

FOIA/PA NO: 2015-0176

GROUP: A

**RECORDS BEING RELEASED
IN THEIR ENTIRETY**

Tammara, Seshagiri

NLO

From: Tammara, Seshagiri
Sent: Tuesday, August 26, 2014 8:10 AM
To: McCoppin, Michael
Subject: FW: Indian Point Gas Pipeline 50.59 Evaluation Part 1 of 3

FYI

Rao

From: Pickett, Douglas
Sent: Monday, August 25, 2014 4:42 PM
To: Tammara, Seshagiri
Subject: RE: Indian Point Gas Pipeline 50.59 Evaluation Part 1 of 3

No – Do you want me to request one?

From: Tammara, Seshagiri
Sent: Monday, August 25, 2014 4:42 PM
To: Pickett, Douglas; McCoppin, Michael
Subject: RE: Indian Point Gas Pipeline 50.59 Evaluation Part 1 of 3

Doug:

Is there a TAC# for initial review ?

Thanks,
Rao

From: Pickett, Douglas
Sent: Monday, August 25, 2014 4:04 PM
To: Tammara, Seshagiri; McCoppin, Michael
Cc: Tift, Doug; Burritt, Arthur; McNamara, Nancy; Screnci, Diane; Sheehan, Neil; Beasley, Benjamin
Subject: Indian Point Gas Pipeline 50.59 Evaluation Part 1 of 3

NLP

Rao/Mike –

Spectra Energy has proposed building a 42-inch natural gas pipeline that will traverse a portion of the Indian Point owner controlled property. Entergy, the licensee, performed a site hazards analysis and concluded that the new pipeline will not introduce any increased risks. The licensee has submitted their 50.59 evaluation on the docket and Region 1 plans to review the evaluation but will need technical assistance with regard to performing an independent verification of the licensee's blast analysis. Could you please take an initial look at the licensee's evaluation and let me know whether you will have all the information you will need to perform a confirmatory analysis? Once Region 1 and NRR confer, I will let you know what kind of schedule we will be on.

Due to the size of the evaluation, it had to be broken into 3 parts. This is part 1 of 3.


Doug

Douglas V. Pickett, Senior Project Manager

AI

Indian Point Nuclear Generating Unit
James A. FitzPatrick Nuclear Power Plant
U.S. Nuclear Regulatory Commission
301-415-1364
Email: douglas.pickett@nrc.gov

Tammara, Seshagiri

From: Pickett, Douglas 
Sent: Tuesday, September 23, 2014 4:11 PM
To: Miller, Chris
Cc: Beasley, Benjamin; Burritt, Arthur; Rikhoff, Jeffrey; Wrona, David; Folk, Kevin; Turk, Sherwin; Green, Kimberly; Wittick, Brian; Setzer, Thomas; Stewart, Scott; McKown, Louis; O'Sullivan, Kevin; Lubinski, John; Newman, Garrett; Screnci, Diane; Sheehan, Neil; McNamara, Nancy; Tift, Doug; Burnell, Scott; Roach (OGC), Kevin; McCoppin, Michael; Tammara, Seshagiri
Subject: RE: FERC Draft EIS on Indian Point Natural Gas Pipeline
Attachments: Comments on FERC Draft EIS 9-23-2014.docx

Chris -

As you know, FERC has requested comments on their draft EIS no later than Monday, September 29. I spoke with Maggie Suter of FERC and she offered the following insights of their process:

- FERC has a two-part process in granting a certificate to Spectra Energy to construct the pipeline.
- The first step is when the FERC Commission issues an Order^a approving the project.
- The second step is a separate action by the FERC Commission approving a notice to proceed with construction. Spectra needs both actions before starting construction.

Regarding timing:

- FERC plans to issue their Final EIS in mid-December
- The FERC Commission will observe a 30-day "cooling off" period following issuance of the Final EIS. They are expected to approve the project in mid-January 2015. Issuance of the final notice to proceed with construction is expected shortly after that.
- Spectra Energy wants to begin construction in March 2015.

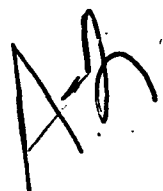
By letter dated August 21, 2014 (ML14253A338), Entergy submitted their 50.59 evaluation to the NRC concluding that the new 42-inch natural gas pipeline would not introduce any additional risks to the site. NRC inspectors are onsite this week and NRO staff are performing a confirmatory blast analysis. Region 1 plans to issue their inspection report in the mid-November time frame.

I have attached our proposed comments which are minimal. Most focus on Entergy's site hazards analysis and states that our inspection is ongoing. Considering that we should know our position on Entergy's 50.59 evaluation by late October, Maggie Suter of FERC recommends that we hold a telephone conference call to discuss our inspection results. This would assist FERC in preparation of the Final EIS.

Let me know if you have any questions. You or your representative will need to negotiate the FERC web site to provide our comments.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit
James A. FitzPatrick Nuclear Power Plant
U.S. Nuclear Regulatory Commission
301-415-1364
Email: douglas.pickett@nrc.gov



U.S. Federal Energy Regulatory Commission
Draft Environmental Impact Statement
Algonquin Gas Transmission, LLC
Docket No. CP14-96-000
Comments Provided by the U.S. Nuclear Regulatory Commission

Comment 1: Page ES-3 includes the following paragraph:

The potential for geologic hazards, including seismic events, to significantly affect construction or operation of the proposed Project facilities is low. Although the Ramapo Fault has been linked to recent earthquake occurrence in the area, the design of the pipeline takes into consideration site-specific conditions, including earthquakes. The recorded magnitude of earthquakes in the Project area is relatively low and the ground vibration would not pose a problem for a modern welded-steel pipeline.

The NRC recommends the paragraph be revised as follows:

The potential for geologic hazards, including seismic events, to significantly affect construction or operation of the proposed Project facilities is low. *The U.S. Geological Survey (USGS) has extensively studied the Ramapo Fault system and the level of seismicity in the region. The USGS's review of data for evidence of Quaternary fault activity (i.e., within the last 1.6 million years) encompassing the Eastern United States indicates that there is no clear association between the fault and small earthquakes that do occur in the region. Further, there is insufficient geologic evidence to indicate the existence of a tectonic fault or Quaternary slip or deformation associated with the fault (Crone and Wheeler 2000; Wheeler 2006).* The design of the pipeline takes into consideration site-specific considerations, including earthquakes. The recorded magnitude of earthquakes in the Project area is relatively low and the ground vibration would not pose a problem for a modern welded-steel pipeline.

Wheeler RL. 2006. "Quaternary tectonic faulting in the Eastern United States." Engineering Geology 82:165–186.

Crone AJ, Wheeler RL. 2000. Data for Quaternary Faults, Liquefaction Features, and Possible Tectonic Features in the Central and Eastern United States, East of the Rocky Mountain Front. Reston, VA: U.S. Geological Survey. Open-File Report 00-260. 2000. 332 p. Available at <<http://pubs.usgs.gov/of/2000/ofr-00-0260>>

Comment 2: Page ES-8 includes the following paragraph:

We received several scoping comments concerning the safety of the Project and its proximity to the Indian Point Energy Center (IPEC), a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Algonquin identified that because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed route would not pose any new safety hazards to the IPEC facility. Based on our consultation with the Nuclear Regulatory Commission, Entergy Nuclear Operations, Inc. (Entergy) is required to assess any new safety impacts on its IPEC facility and that analysis is provided to and reviewed by the Nuclear Regulatory Commission. Algonquin has coordinated with Entergy to provide information about its proposed pipeline and Entergy is currently performing a Hazards

Analysis. To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.

The NRC recommends the paragraph be revised as follows:

We received several scoping comments concerning the safety of the Project and its proximity to the Indian Point Energy Center (IPEC), a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Algonquin identified that because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed route would not pose any new safety hazards to the IPEC facility. *Entergy performed a site hazards analysis to assess any new safety impacts on the IPEC facility and concluded that, based on the proposed routing of the 42-inch pipeline and accounting for the substantial design and installation enhancements agreed to by Algonquin, the proposed pipeline poses no increased risks to IPEC (Entergy 2014). Entergy's site hazards analysis has been submitted to the Nuclear Regulatory Commission for inspection which is scheduled to be completed in late 2014. To ensure that the AIM Project will not present any new safety hazards to the IPEC facility, prior to construction in the vicinity of the IPEC facility, the final design should incorporate the recommendations of the Nuclear Regulatory Commission.*

Letter from Entergy Nuclear Northeast to U.S. Nuclear Regulatory Commission dated August 21, 2014, letter NL-14-106.

Comment 3: Page 4-267 includes the following:

Given the distance from the IPEC generating facilities and the avoidance and mitigation measures described above, the proposed route should not pose any new safety hazards to the IPEC facility. Based on our consultation with NRC, Entergy is required to assess any new safety impacts on its facility and provide that analysis to the NRC. Algonquin has coordinated with Entergy to provide information about its proposed pipeline and Entergy is currently performing a Hazards Analysis. Therefore, to ensure that no new safety hazards would result from the AIM Project, we recommend that:

- Prior to the end of the draft EIS comment period, Algonquin should file with the Secretary its final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy. If Entergy's Hazards Analysis is not yet complete, Algonquin should provide an update on its status and a schedule for anticipated completion. If, upon completion of the Hazards Analysis, additional mitigation measures are required to address safety-related issues or conflicts, prior to construction in the vicinity of the IPEC facility, Algonquin should file with the Secretary, for review and written approval by the Director of OEP, a site-specific construction and mitigation plan for the IPEC developed in consultation with Entergy.

The NRC recommends the paragraph be revised as follows:

Entergy performed a site hazards analysis to assess any new safety impacts on the IPEC facility and concluded that, based on the proposed routing of the 42-inch pipeline and accounting for the substantial design and installation enhancements agreed to by Algonquin, the proposed pipeline poses no increased risks to IPEC (Entergy 2014). Entergy's site hazards analysis has been submitted to the Nuclear Regulatory Commission for inspection which is scheduled to be completed in late 2014. Therefore, to ensure that no new safety hazards would result from the AIM Project:

Prior to construction in the vicinity of the IPEC facility, the final design should incorporate the recommendations of the Nuclear Regulatory Commission.

Letter from Entergy Nuclear Northeast to U.S. Nuclear Regulatory Commission dated August 21, 2014, letter NL-14-106.

Comment 4: Page 5-15 includes the following paragraph:

We received several scoping comments concerning the safety of the Project and its proximity to the IPEC, a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Given the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that would be implemented by Algonquin, the proposed route should not pose any new safety hazards to the IPEC facility. Based on our consultation with NRC, Entergy is required to assess any new safety impacts on its IPEC facility and provide that analysis to the NRC. Algonquin has coordinated with Entergy to provide information about its proposed pipeline, and Entergy is currently performing a Hazards Analysis. To ensure that no new safety hazards would result from the AIM Project, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.

The NRC recommends the paragraph be revised as follows:

We received several scoping comments concerning the safety of the Project and its proximity to the IPEC, a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Given the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that would be implemented by Algonquin, the proposed route should not pose any new safety hazards to the IPEC facility. *Entergy performed a site hazards analysis to assess any new safety impacts on the IPEC facility and concluded that, based on the proposed routing of the 42-inch pipeline and accounting for the substantial design and installation enhancements agreed to by Algonquin, the proposed pipeline poses no increased risks to IPEC (Entergy 2014). Entergy's site hazards analysis has been submitted to the Nuclear Regulatory Commission for inspection which is scheduled to be completed in late 2014. To ensure that the AIM Project will not present any new safety hazards to the IPEC facility, prior to construction in the vicinity of the IPEC facility, the final design should incorporate the recommendations of the Nuclear Regulatory Commission.*

Letter from Entergy Nuclear Northeast to U.S. Nuclear Regulatory Commission dated August 21, 2014, letter NL-14-106.

Comment 5: Page 5-25 includes the following recommendation:

- 42. Prior to the end of the draft EIS comment period**, Algonquin shall file with the Secretary the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy. If Entergy's Hazards Analysis is not yet complete, Algonquin shall provide an update on its status and a schedule for anticipated completion. If, upon completion of the Hazards Analysis, additional mitigation measures are required to address safety-related issues or conflicts, **prior to construction in the vicinity of the IPEC facility**, Algonquin shall file with the Secretary, for review and written approval by the Director of OEP, a site-specific construction and mitigation plan for the IPEC developed in consultation with Entergy. **(Section 4.12.3)**

The NRC recommends the paragraph be revised as follows:

42. *To ensure that the AIM Project will not present any new safety hazards to the IPEC facility, prior to construction in the vicinity of the IPEC facility, the final design should incorporate the recommendations of the Nuclear Regulatory Commission.*

Comment 6: Page 3-9 includes the following paragraph:

Because the subject of nuclear power remains controversial, any future proposals to construct new or expand existing facilities in the region would likely involve prolonged regulatory review and public opposition. Furthermore, there are environmental and regulatory challenges concerning safety and security, the disposal of toxic materials (spent fuel), and alterations to hydrological/biological systems (for cooling water) that would need to be addressed before any new plants could be constructed. Even if these challenges could be overcome, a new plant would not likely be operational for many years. For these reasons, new sources of nuclear power could not meet the schedule of the Project and are not currently a practicable alternative to the proposed Project.

The NRC recommends the paragraph be revised as follows:

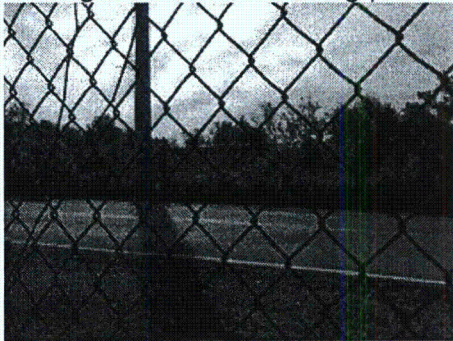
Because the subject of nuclear power remains controversial, any future proposals to construct new or expand existing facilities in the region would likely involve prolonged regulatory review and public opposition. Furthermore, *there is a regulatory process addressing safety and environmental issues (including reviews in the areas of nuclear safety and security, the disposal of spent nuclear fuel, and alterations to hydrological and biological systems) that would have to be completed before any new plants could be constructed and operated. Even if this regulatory review process were completed,* a new plant would not likely be operational for many years. For these reasons, new sources of nuclear power could not meet the schedule of the Project and are not currently a practicable alternative to the proposed Project.

Tammara, Seshagiri

From: McCarver, Sammy
Sent: Wednesday, September 24, 2014 12:46 PM
To: Tammara, Seshagiri
Subject: Photos Near Proposed Gas Line Routing

Rao,

This morning I walked down accessible portions of proposed pipeline route. There are a few stakes marking approximate path but there is not direct line of site from stake to stake because of woods and undergrowth. I'm attaching photos



Looking southeast from southernmost point of Entergy OCA across access road to gypsum board plant. Pipeline would run in a northerly direction approximately 100' beyond town in photo.



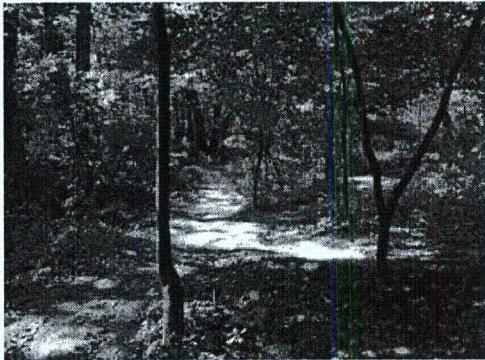
Pipeline will turn easterly and continue through woods beyond high power lines.



Pipeline will exit Entergy property and woods approximately where this stake is and continue easterly across Broadway Ave and back into woods.



Looking eastery from stake in photo above into woods where pipeline will continue.



Typical condition in woods along approximate path of proposed pipeline. Other than existing trees I did not see conditions that would allow accumulation of gas. Terrain is gently rolling. According to info provided by Entergy in their analysis, trees are to be cleared for 100' along pipeline route.

*Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382*

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Monday, September 29, 2014 7:56 AM
To: Beasley, Benjamin; Burritt, Arthur; Tammara, Seshagiri; McCoppin, Michael
Subject: Paul Blanch Letter on Spectra Energy Pipeline
Attachments: Paul Blanch Letter 20140927 DEIS comments of Gas Line.pdf

FYI –

Paul Blanch letter to FERC attached. Note that he copied the letter to Chairman Macfarlane – thus we may get a green ticket.

A-4

Paul M. Blanch
Energy Consultant

September 27, 2014

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Subject:

Algonquin Gas Transmission, LLC
Docket No. CP14-96-000
FERC/EIS-0254D

Dear Ms. Bose

I am submitting the following comments on behalf of myself on the above-proposed project. I am a registered Professional Engineer with more than 45 years of Nuclear safety, engineering operation and Federal regulatory requirements.

I have been a consultant to the Chief Nuclear Officers at Indian Point and also an expert witness for the Attorney General for the State of New York related to the relicensing efforts of Indian point.

In October 2010¹ I petitioned² the Nuclear Regulatory Commission (NRC) to evaluate the risks associated with the existing gas lines. The NRC in its response stated this analysis had been conducted however they would not share it with me due to national security concerns.

I have conducted a detailed review of the Draft Environmental Impact Statement (DEIS) and the requirements as stated in 49 CFR 192 "Transportation of natural and other gas by pipeline: Minimum federal safety standards" and also 30 CFR Part 380, Appendix A to Part 380 – "Minimum Filing Requirements for Environmental Reports Under the Natural Gas Act."

¹ <http://pbadupws.nrc.gov/docs/ML1030/ML103020293.pdf>

² <http://www.huffingtonpost.com/huff-wires/20101025/us-indian-point-gas-line/>

Based upon these Federal requirements I have the following comments related to the DEIS and the Spectra application:

1. 30 CFR 380 (m), Reliability and Safety explicitly states:

“Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes. (§ 380.12(m)).”

This proposed line is located in the vicinity of residents, schools, churches and one of the largest nuclear plants in the USA. 49 CFR 192 discusses various design requirements for safety. I note that the new lines are not designed to the most stringent safety requirements of Class 4 lines. Contrary to these requirements I did not see any discussion within the DEIS or the application discussing what provisions would be incorporated to minimize the impact to the public and why these lines are not designed to the maximum safety standards specified by 49 CFR 192.111 and 49 CFR 192.5. These standards would require closer isolation valve spacing, and more robust pipes designed to withstand higher pressures. While not a specific requirement to design these lines as Class 4, it was never anticipated that gas transmission lines would be located near or on the property of a nuclear power facility.

There is no discussion in either the AIM proposed description or the DEIS as to automatic isolation valves which had been removed from the original gas lines. The only isolation valves are controlled from Houston, Texas and there is no assurance these will be operable due to an earthquake or other natural disaster.

2. The White Plains Journal News published the following Community View on September 15, 2014. Some of these may be new issues however none of these issues have been addressed in either the DEIS or the Spectra Application.

“View: Algonquin plan poses risks to Indian Point, residents

Paul Blanch 10 p.m. EDT September 14, 2014 Spectra plans to place a larger gas pipeline near Indian Point. The probability of a gas line failure is remote but is not zero. It is unconscionable and irresponsible to continue this project prior to a complete, independent risk analysis.

Nuclear power plants and natural gas transmission lines provide energy for homes and businesses. Due to the inherent hazards associated with these energy sources, the federal government "regulates" both. The proposed routing of the Algonquin natural gas pipeline near the Indian Point nuclear plant poses the risk that these hazards may team up to harm the community.

I speak as a professional engineer with more than 45 years of nuclear experience including formerly reporting directly to the Chief Nuclear Officer at Indian Point and an expert witness for the State of New York related to the relicensing of Indian Point.

There are three gas existing natural gas transmission lines traversing the Indian Point site within 600 feet of vital structures. There has not been any publicly available analysis demonstrating the risks of these lines. The Nuclear Regulatory Commission has refused to provide this information under the guise of national security, yet has maintained the "secret" analysis shows Indian Point is not at undue risk.

Failure of any of these lines could result in a total loss of cooling to the reactor cores and 40 years inventory of spent fuel. There are no provisions within the area to combat this event until valves are remotely closed from the pipeline company's facility in Houston, Texas. In the meantime, the energy released from a ruptured line in one hour would exceed the energy released from one of the atomic bombs dropped on Japan in 1945.

Some of the possible consequences of a gas line fire/explosion to Indian Point include loss of power to the entire site, secondary fires from liquid fuel storage tanks, reactor core damage and melting, asphyxiation of site personnel, spent fuel radioactivity releases exceeding those of Fukushima, and social/economic damages exceeding \$1 trillion.

Now Algonquin/Spectra wants to place yet another high-pressure 42-inch line also in the vicinity of Indian Point, doubling the existing

capacity. According to the Federal Energy Regulatory Commission, "the proposed route would not pose any new hazard to the (Indian Point) facility." There is no way FERC could make this determination without a complete risk analysis. And FERC's Draft Environmental Impact Statement ignores damage prevention, emergency response and public awareness, which are federal Department of Transportation requirements.

Algonquin gas pipeline project sparks safety concerns

An independent study of a gas pipeline near a nuclear facility in another state concluded it represented an undue risk. The amount of gas flow and energy in that pipeline was less than 1/1000 of the Algonquin/Spectra project and the facility was located in an area with much lower population.

The probability of a gas line failure is remote but is not zero especially if terrorism is considered. This may possibly be one of the most attractive targets in the nation.

The event would be aggravated by the decision of Spectra to not include any automatic gas termination valves and no means to combat the fire/explosion prior to gas flow termination. The gas lines are not designed to the most stringent safety standards as discussed in DOT regulations. The only gas isolation valves are remotely controlled from Houston, Texas. It seems the community around Indian Point is protected against a gas pipeline rupture triggering a nuclear plant accident—unless a gas pipeline ruptures. That's unacceptable.

The State of New York and all of the impacted counties must demand an independent and transparent analysis be conducted by an independent engineering organization. The cost for this study should be borne by Spectra/Entergy.

It is unconscionable and irresponsible to continue this project prior to a complete, independent risk analysis. The potential consequences of this event are too devastating to the New York area and my home State of Connecticut not to design this new line to maximum safety standards and assess the risk.

The writer, a West Hartford, Conn., resident, is an engineer.”

3. 30 CFR Part 380 also requires:

(1) Describe measures proposed to protect the public from failure of the proposed facilities (including coordination with local agencies).

(3) Discuss design and operational measures to avoid or reduce risk.

(5) Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.

Again, none of these requirements met or addressed.

4. Page ES-8 FERC DEIS states:

*“Algonquin identified that because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed **route would not pose any new safety hazards to the IPEC facility.** To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.”*

This is one of the most egregious statements within the DEIS and is an irresponsible and rash statement with no bases. The Nuclear Regulatory Commission (NRC) has reviewed similar analysis at nuclear facilities nuclear facilities with 1/1000 of the proposed gas flow and located more than one mile from the facility and determined that a 16-inch operating at 50-PSI. The study

performed by Framatome determined gas line presented undue risk to the facility. Any analysis conducted with a foregone outcome as stated within the DEIS is completely unscientific and irresponsible. It should be FERC's responsibility to assure this analysis is conducted in an open, scientific, transparent independent manner with a peer review. This analysis cannot be conducted by any organization with a vested interest such as Spectra/Algonquin, Indian Point/Entergy or the Nuclear Regulatory Commission.

West Point Partners, LLC ("WPP") proposes to construct and operate the West Point Transmission Project ("the Project"), an approximately 80-mile-long high voltage electric transmission facility that will connect the existing National Grid Leeds Substation (Leeds Substation) in the Town of Athens, Greene County, NY, and the existing Consolidated Edison Company of New York, Inc. (Con Edison), Buchanan North Substation (Buchanan Substation) located adjacent to the Indian Point Energy Center in the Village of Buchanan, Town of Cortlandt, Westchester County, NY. For approximately 77 miles of its length, the Project will be buried under the bed of the Hudson River.

Both the American Society of Civil Engineers³ and the National Association of Corrosion Engineers clearly state⁴ that high voltage direct current (HVDC) lines will induce "stray currents" which will accelerate the corrosion of metallic piping systems. This HVDC line will directly intersect with both the new and 60 year old degrading existing gas transmission lines and piping systems and tanks at the Indian Point facility.

49 CFR Part 192, Appendix D to Part 192 - Criteria for Cathodic Protection and Determination of Measurements require this to be addressed and measures implemented to assure that there will be no impact or stray current corrosion induced by the HVDC lines in the proximity of the gas lines.

³ <http://ascelibrary.org/doi/abs/10.1061/9780784413142.093>

⁴ <http://www.nace.org/cstm/Store/Product.aspx?id=b7a6056e-bb57-df11-a321-005056ac759b>

5. 49 CFR 192.615⁵ requires “each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency.”

There is no discussion within the DEIS as to how this problem will be addressed especially when remotely operated valves are controlled from Houston, Texas.

6. 49 CFR §192.616 Public awareness requires “each pipeline operator must develop and implement a written continuing public education program that follows the guidance provided in the American Petroleum Institute's (API) Recommended Practice (RP) 1162 (incorporated by reference, *see* §192.7).”

There is no discussion within the DEIS of the application as to how this is being addressed. This public education process must include the potential consequences of impact to the Indian Point nuclear plants and how an accident would be minimized.

7. The requirements of 49 CFR 192 Subpart L—OPERATIONS⁶ TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS are not addressed within the DEIS.
8. 30 CFR Part 380 states: “Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents **with estimates of probability of occurrence** (emphasis added) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.”

There is no discussion within the DEIS as to how these requirements are addressed especially the probability and

⁵http://www.ecfr.gov/cgi-bin/text-idx?SID=feed3509ef9a6b39ee12360353228fd6&node=se49.3.192_1615&rqn=div8

⁶<http://www.ecfr.gov/cgi-bin/text-idx?SID=feed3509ef9a6b39ee12360353228fd6&node=sp49.3.192.1&rqn=div6>

consequences of an accident and/or malfunction.

9. Based on the results of the Fukushima nuclear meltdowns the Social and Economic consequences may exceed \$1 Trillion should an accident occur with consequential damage due to proximity to Indian Point and NYC. Consequential damages from secondary fires and explosions from the millions of gallons of fuel oil stored on the Indian Point site must also be considered
10. The Nuclear Regulatory Commission has specifically notified⁷ all nuclear facilities of the potential dangers of locating gas lines in the vicinity of nuclear plants. Neither the Spectra application nor the DEIS address this major risk.

There is no discussion of the potential for preventing terrorism and the impacts of such an event.

As stated in the DEIS: “To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.

It is imperative that this “Hazards Analysis” be performed by an independent, qualified party with oversight from representatives from local legislators and residents.

In summary, the proposed AIM project poses extreme dangers to the residents of Westchester County and surrounding areas that include pipe corrosion to the new and existing gas lines, damage due to installation and subsequent construction accidents, and other events that may impact the environment.

⁷ INFORMATION NOTICE NO. 91-63: NATURAL GAS HAZARDS AT FORT ST. VRAIN NUCLEAR GENERATING STATION

September 27, 2014

I would appreciate a detailed written response to these issues prior to the finalization of the DEIS.

Sincerely;

A handwritten signature in cursive script that reads "Paul M. Blanch".

Paul M. Blanch
135 Hyde Rd.
West Hartford, CT 06117
860-236-0326

Cc: Chairman Allison M. Macfarlane
USNRC

Mr. John Sipos
State of New York
Assistant Attorney General

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Monday, October 06, 2014 11:35 AM
To: McCarver, Sammy; Burritt, Arthur; McCoppin, Michael
Cc: Dimitriadis, Anthony; Tammara, Seshagiri; Setzer, Thomas; Krohn, Paul; Beasley, Benjamin
Subject: Indian Point Gas Pipeline Analysis

Rao has completed his independent confirmatory blast analysis and his results are consistent with the licensee. He is completing his formal documentation this week. Rao and I decided it would be best to distribute his documentation and allow everyone to review it prior to a phone call to respond to questions. Thus, after we share Rao's documentation, I will schedule a phone call for sometime next week.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit
James A. FitzPatrick Nuclear Power Plant
U.S. Nuclear Regulatory Commission
301-415-1364
Email: douglas.pickett@nrc.gov

From: McCarver, Sammy
Sent: Friday, October 03, 2014 12:16 PM
To: Pickett, Douglas; Burritt, Arthur
Cc: Dimitriadis, Anthony; Tammara, Seshagiri; Setzer, Thomas; Krohn, Paul
Subject: Conference Call Monday Oct 6 to Discuss Blast Analysis?

LI

All:

I'm traveling to Pittsburgh area Sunday night for security baseline at BV; a late change to my inspection schedule. If there is to be a conference call to discuss Rao's blast analysis and I'm needed for the call, please set-up a bridge line and forward dial-in information. I don't know the time of our entrance at BV, but expect it will be in early afternoon, so a call before lunch or after 3 pm would likely be best option for me.

*Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382*

A-5

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Friday, October 10, 2014 12:50 PM
To: Tammara, Seshagiri
Subject: RE: Results of Blast Analysis

OK – will do

From: Tammara, Seshagiri
Sent: Friday, October 10, 2014 11:53 AM
To: Pickett, Douglas
Subject: RE: Results of Blast Analysis

Doug:

It is fine with me. Go ahead schedule a call.

Thanks,
Rao

From: Pickett, Douglas
Sent: Friday, October 10, 2014 11:26 AM
To: Tammara, Seshagiri
Subject: Results of Blast Analysis

Rao – I received your voice-mail this morning about your Branch Chief reviewing your final results.

I would like to schedule a call with the Region 1 folks next Wednesday afternoon to discuss your results. While Mike may not finished his review by then, we need to move this along and I would think that the Region won't have many questions once you explain that your results are consistent with the licensee. We also need to discuss our overall results with FERC by the end of the month which is why I want to go ahead and get this call scheduled.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit
James A. FitzPatrick Nuclear Power Plant
U.S. Nuclear Regulatory Commission
301-415-1364
Email: douglas.pickett@nrc.gov

Tammara, Seshagiri

From: Hart, Michelle
Sent: Wednesday, October 15, 2014 9:37 AM
To: Tammara, Seshagiri
Subject: RE: IPEC confirmatory Calculations

Rao,

You're welcome. I am always willing to help, so you have backup and I get to learn new things. You have been doing a good job explaining what you did – this is just the painful editing part.

Michelle

From: Tammara, Seshagiri
Sent: Wednesday, October 15, 2014 9:34 AM
To: Hart, Michelle
Subject: RE: IPEC confirmatory Calculations

Michelle:

Thank you very much for your great help. Since I did not have guidance or template to follow, I had to struggle with scattered thoughts for the write-up. I will try to answer your comments and get back to you.

Thanks once again,

Rao

From: Hart, Michelle
Sent: Tuesday, October 14, 2014 5:24 PM
To: Tammara, Seshagiri
Subject: RE: IPEC confirmatory Calculations

Hi, Rao.

I have marked it up. A lot is grammar, partly my preferences for ease of reading. I do have a few comments with things for you to consider. I don't think the section you called "recommendations" should be called that, partly because I'm not sure that the region will follow up more than minimally with the licensee if the 50.59 analysis shows that the proposal is acceptable and doesn't need NRC approval.

Also, I think IP2 and IP3 have separate UFSARs (there isn't one UFSAR for IPEC), so we should be clear if that is the case. My comments assumed that the UFSARs are separate.

Please let me know if you have any questions.

Michelle

From: Tammara, Seshagiri
Sent: Tuesday, October 14, 2014 12:18 PM
To: Hart, Michelle
Subject: IPEC confirmatory Calculations

Michelle:

Based on your advice, I have added summary and reduced the scenarios. Please review/comment and correct. I am sorry to bother you.

Thanks,
Rao

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Wednesday, October 15, 2014 5:01 PM
To: McCoppin, Michael
Subject: Qualifications
Attachments: Qualifications of Analyst.docx

Mike:

Enclosed is my qualifications sheet for your review, which I plan to send it along with the report tomorrow.

Thanks,
Rao

Qualifications of Analyst

Name: Seshagiri Rao Tammara

Organization: NRO/DSEA/RPAC

Title: Scientist

Qualifications: M.S. Environmental Engineering, University of Maryland
M.S. Chemical Engineering, University of Maryland
M.S. Chemical Engineering, Osmania University, India
B.S. Chemical Engineering, Osmania University, India

Experience: From May, 2006 to present, at NRC performing power plant siting evaluations, and external man-made hazards from nearby facilities at the proposed new nuclear power plants. These evaluations include potential accidents and their impacts consisting of potential explosions, vapor plume explosions, fires, and toxic vapor concentrations affecting operating personnel due to nearby chemical manufacturing, storage and transportation. Potential aircraft hazards and turbine missile impacts are also being evaluated as part of power plant license applications. Have been working at NRC, on all COL and ESP applications since 2006.

From 1974- 2006, worked as a technical analyst at NUS corporation performing various tasks in preparing ERs, FSARs, EISs, and potential chemical and radiological accident impact evaluations.

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Tuesday, October 28, 2014 12:54 PM
To: Krohn, Paul
Subject: RE: IPEC Gas Pipeline Rev 7 with Changes following our discussion

WPD

Release

Paul:

I have checked the draft write-up, and have no further comments. I have reviewed the information pertaining to SME's qualifications and experience, which displays that he has extensive knowledge and analysis experience. Therefore, he has the ability to evaluate the proposed pipeline hazards impact evaluation for Entergy.

Thanks,
Rao.

From: Krohn, Paul
Sent: Tuesday, October 28, 2014 11:14 AM
To: Tammara, Seshagiri
Cc: McCarver, Sammy; Dimitriadis, Anthony
Subject: IPEC Gas Pipeline Rev 7 with Changes following our discussion

RT

Rao,

Following our discussions today, I made changes to the draft write-up to reflect your comments. Please respond if I have adequately addressed them and you find the vendor's qualifications acceptable for performing these type of blast analyses.

Paul

A-9

Tammara, Seshagiri

From: Krohn, Paul
Sent: Tuesday, October 28, 2014 3:05 PM
To: Tammara, Seshagiri

RT

In addition, owing to a methane plume being buoyant, it rises aloft quickly, and burns rapidly in seconds far above the ground without challenging the structures and components; and the existing margin of safety is not expected to be reduced due to a potential rupture of the proposed pipeline near IPEC.

A-10

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Wednesday, October 29, 2014 8:36 AM
To: Krohn, Paul
Subject: RE: One more change to IPEC writeup

Pual:
Yes. The discussion of assessment of the safety significance of a postulated loss of SSCs ITS from postulated gas pipeline ruptures on pages 12,13,14 of 21 supports that conclusion.

Thanks,
Rao

From: Krohn, Paul
Sent: Tuesday, October 28, 2014 4:00 PM
To: Tammara, Seshagiri; McCarver, Sammy
Cc: Dimitriadis, Anthony
Subject: One more change to IPEC writeup

Rao and Sammy,

I have one other change from the SLOs. I believe this is still true. Please confirm:

The staff determined that the impacts to the SSCs important-to-safety outside the SOCA from the proposed new pipeline are bounded by the impacts from low probability events of extreme natural phenomena (including seismic activity, tornado winds, and hurricanes) which have been previously assessed and are addressed in the Indian Point Units 2 and 3 Updated Final Safety Analysis Report (UFSARs), and Indian Point Units 2 and 3 would still be able to achieve safe shutdown conditions.

The SLOs felt it important to provide context saying that even though IPEC is bounded analytically, safe shutdown can still be achieved. Any objections to the highlighted addition?

Paul

Tammara, Seshagiri

From: McCoppin, Michael
Sent: Wednesday, November 12, 2014 8:33 AM
To: Kock, Andrea; Flanders, Scott; Tammara, Seshagiri
Subject: FW: Indian Point Inspection Report RE: Spectra Energy Natural Gas Pipeline
Attachments: IP23 2014 004 final.pdf

M L14314A052

Kudos to Rao regarding his support for the Indian Point pipeline review for Region I and NRR...

From: Pickett, Douglas
Sent: Wednesday, November 12, 2014 8:26 AM
To: Tammara, Seshagiri; McCarver, Sammy; Burritt, Arthur
Cc: McCoppin, Michael; Beasley, Benjamin
Subject: Indian Point Inspection Report RE: Spectra Energy Natural Gas Pipeline

NRR

Sam/Rao/Art –

Great job in the attached inspection report! You guys really nailed the issue and provided all the background documentation we should need to address stakeholder concerns. I'll forward the inspection report to our contact at FERC for their use in completing their EIS. I'm sure they will be extremely pleased with the thoroughness of your work.

Thanks again – Doug

A-12

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Monday, November 24, 2014 9:34 AM
To: Tammara, Seshagiri; McCoppin, Michael
Subject: FW: Report on confirmatory calculations pertaining to AIM Project 42 inch pipeline near IPEC
Attachments: Report_Confirmatory_of_IPEC_AIM_HazardAnalysis.docx; Qualifications of Analyst Rao.docx

Mike/Rao –

Have you placed the attached files in ADAMS? Since our inspection report relied upon them, I think that we need to capture this information as official agency records and maintain them as security-related and non-public. If these files are currently not in ADAMS, would you object to me placing them in ADAMS?

Thanks - Doug

From: Tammara, Seshagiri
Sent: Thursday, October 16, 2014 8:52 AM
To: Pickett, Douglas
Cc: McCoppin, Michael; Burritt, Arthur; Setzer, Thomas; Dimitriadis, Anthony; Trapp, James; Stewart, Scott; Petch, Jeromy; McCarver, Sammy; Beasley, Benjamin
Subject: Report on confirmatory calculations pertaining to AIM Project 42 inch pipeline near IPEC

Doug:

Attached is the brief report pertaining to the confirmatory calculations performed for the hazard analysis related to proposed AIM Project pipeline near Indian Point Entergy Center (IPEC). It contains brief description, scope, methodology, summary and conclusions. Please feel free to ask questions, if you have any, use this report as appropriate for your overall review findings and conclusions of the 50.59 evaluation. I have also attached my qualifications.

Thanks,
Rao

Tammara, Seshagiri

From: Pickett, Douglas NMR
Sent: Tuesday, December 09, 2014 8:05 AM
To: Gordon, Dennis; Dimitriadis, Anthony; McCoppin, Michael; Tifft, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Andoh, Roger
Cc: Tammara, Seshagiri; Huyck, Doug; Prescott, Peter
Subject: RE: Blast Analysis
Attachments: Supplement to 2.206 Petition on the Algonquin Natural Gas Pipeline

Dennis –

Paul Blanch has requested Entergy's blast analysis in the attached email. This is not a FOIA and I have not seen the recent FOIA request.

From: Gordon, Dennis NSIR
Sent: Tuesday, December 09, 2014 7:19 AM
To: Pickett, Douglas; Dimitriadis, Anthony; McCoppin, Michael; Tifft, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Andoh, Roger
Cc: Tammara, Seshagiri; Huyck, Doug; Prescott, Peter
Subject: RE: Blast Analysis

ALL,

In speaking with Mike McCoppin, I have been asked to review Rao's Safety Review/Blast Analysis Report (ML14330A276). It is my understanding that a FOIA request has "explicitly" requested this document and ONLY this document.

If the additional documents we are discussing are intended to help this group (NRC) understand the issue at IP internally, then this is good information, however, I caution everyone not to go too far in the identification of additional documentation that has not been requested by the specific FOIA request we have at hand. The SGI documents have not been requested, so any discussion of them should be kept in the context of "internal" NRC discussion.

I have performed a preliminary review of ML14330A276 and believe that the stand-off "distances" specified in the report may need to be redacted along with one or two other references. However, this is preliminary and I will be discussing this with another staff member later today.

Dennis Gordon
Security Specialist
NSIR/DSP/RSLB
(301) 287-3633

From: Pickett, Douglas NRR
Sent: Monday, December 08, 2014 4:21 PM
To: Dimitriadis, Anthony; McCoppin, Michael; Tifft, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Andoh, Roger
Cc: Gordon, Dennis; Tammara, Seshagiri
Subject: RE: Blast Analysis

A-14

I spoke to John Boska, the previous PM for Indian Point, and he says the following documents are safeguards and relate to the 2008 Indian Point blast analysis:

3/28/08, SGI SLES document (non-public), NS107994, Indian Point 3, calculation IP-CALC-08-00033, Rev. 0, Evaluation of Algonquin Pipeline Explosion.

3/4/11, NSIR review of IP gas pipelines, SGI SLES document NS108076.

Rao – Are you able to compare these older documents with the current blast analysis and determine the differences?

From: Dimitriadis, Anthony
Sent: Monday, December 08, 2014 12:26 PM
To: McCoppin, Michael; Tift, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Pickett, Douglas; Andoh, Roger
Cc: Gordon, Dennis
Subject: RE: Blast Analysis

RI

Mike: That was me. Last week, Art Burritt mentioned to me that there was a previous analysis (possibly in the 2008 timeframe) that was designated as Safeguards Information (SGI). I don't know anything about the previous analysis, but Art sounded fairly certain and recommended that we look in SLES where all SGI files are currently stored.

I will defer to Art about that, but it would help if we could flush that out.

Tony

From: McCoppin, Michael
Sent: Monday, December 08, 2014 11:58 AM
To: Tift, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Dimitriadis, Anthony; Pickett, Douglas; Andoh, Roger
Cc: Gordon, Dennis
Subject: Blast Analysis

Folks,

Rao looked at his records after the 10:00 call this morning and found the previous 2008 blast analysis from the contractor marked Security Related Information in his file cabinet. The blast analysis was performed by the same contractor for the licensee and similar in format to the one we just completed. Rao look puzzled during the call this morning until he could check his records regarding the marking of the material. Someone? during the call this morning mentioned they thought the previous analysis was Safeguards material... I took an action to find why there was a delta between the two.

Whoever made that statement, please contact me so we can validate what documents we are discussing.

Thanks,

mike

From: Paul Blanch <pdblanch@comcast.net>
Sent: Monday, December 08, 2014 10:10 AM
To: Pickett, Douglas
Cc: Rick Kuprewicz; Dave Lochbaum; Susan Van Dolsen; Ellen Weininger
Subject: Supplement to 2.206 Petition on the Algonquin Natural Gas Pipeline
Attachments: Kuprewicz IP Gas analysis.pdf

Doug:

I would like to supplement my petition based on the opinions of the world recognized gas line expert, Richard Kuprewicz.

A copy of his report/analysis is enclosed.

Please explain the process to formally supplement my original 2.206 petition.

I would appreciate a copy of the NRC's and Entergy's expert analysis for comparison purposes.

When we have our PRB meeting, Mr. Kuprewicz will be participating.

Please **do not withhold** this information under 10 CFR 2.390. This communication is public information and

may be placed in ADAMS.

Paul

On 11/24/14 3:29 PM, Pickett, Douglas wrote:

Thank you for the response. I'll be contacting you in the future regarding scheduling a presentation before the PRB.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

From: Paul [mailto:pmblanch@comcast.net]
Sent: Monday, November 24, 2014 2:45 PM —
To: Pickett, Douglas
Cc: Dave Lochbaum
Subject: Re: 2.206 Petition on the Algonquin Natural Gas Pipeline

Douglas

I would appreciate an opportunity to have a conference with the petition review board.
I have no objections to placing my petition in the public document room and in Adams
You may also include within this petition and make it publicly available my allegation about the qualifications of the individual conducting the analysis.

Sent from my Maxipad

Paul Blanch
Home 860-236-0326
Cell 860-922-3119

On Nov 24, 2014, at 13:39, Pickett, Douglas <Douglas.Pickett@nrc.gov> wrote:

Mr. Blanch:

I'm the NRR project manager for Indian Point and I will be serving as the petition manager for your 2.206 petition to Mr. Mark Satorius regarding the proposed 42-inch diameter natural gas pipeline that will traverse the owner controlled property at the Indian Point facility.

We will be forming a Petition Review Board in accordance with NRC Management Directive 8.11, which is our guidance on reviewing 2.206 petitions. As you may know, prior to the initial meeting of the PRB, you will have

the opportunity to address the Board in order to provide any additional information you may want to offer. Following your presentation, if you chose to have one, the PRB will formally meet to make its initial determination. At that time, you will be notified of the Board's initial determination and offered a second opportunity to make a presentation before the Board. Thus, at this point, I would like to know if you are interested in making a presentation before the Board. Presentations by petitioners are typically done via telephone conference call in lieu of a face-to-face public meeting.

I also want to remind you that the 2.206 process is a public process and ask whether you have any objections to our making your petition publicly available in ADAMS, our electronic database. An item of note is your concern about Entergy's contractor not being qualified per Appendix B to 10 CFR Part 50. I understand that NRC Region 1 has contacted you and they are reviewing this concern as part of our allegation process. Our allegation process is not public and we do not release this kind of information to the public. Thus, I want to confirm whether you have any objections to our including your concerns about the contractor's qualifications in the publicly available version of your petition. Clearly, we could redact this portion of your petition if you request it.

Please feel free to contact me if you have any questions.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

--
Paul Blanch

860-236-0326

860-922-3119 cell

Accufacts Inc.

“Clear Knowledge in the Over Information Age”

4643 192nd Dr. NE
Redmond, WA 98074
Ph (425) 836-4041
Fax (425) 836-1982
kuprewicz@comcast.net

November 3, 2014

**To: Mr. Thomas Wood
Town Attorney
Town of Cortlandt
1 Heady Street
Cortlandt Manor, NY 10567**

Re: Review of Algonquin Gas Transmission LLC’s Algonquin Incremental Market (“AIM Project”), Impacting the Town of Cortlandt, NY, FERC Docket No. CP14-96-0000, Increasing System Capacity from 2.6 Billion Cubic Feet (Bcf/d) to 2.93 Bcf/d

Executive Summary

Accufacts Inc. was retained by the Town of Cortlandt (“Cortlandt”) to perform a basic system review and to provide a brief analysis of the above FERC filing as it may affect Cortlandt. The project as submitted to FERC is asking for several major modifications on the Algonquin gas transmission system to increase gas capacity by approximately 342 dekatherms per day (Dth/d) from Ramapo, NY, to move gas eastward to Connecticut, Rhode Island and Massachusetts markets. The AIM proposal impacting Cortlandt upgrades the existing 26-inch and 30-inch looped pipelines between the Stony Point and the Southeast Compressor Stations in New York, by removing sections of existing 26-inch lower 674 psig Maximum Allowable Operating Pressure (“MAOP”) pipe, replacing it with approximately 8 miles of new 42-inch higher 850 psig MAOP pipe, and installing new interconnecting pressure reducing/letdown valves to take advantage of the higher MAOP pipe (See Exhibit 1).^{1, 2, 3} A segment of the new 42-inch installation may also involve approximately 2 miles of pipe looped on new right-of-way (“ROW”) running south of the Indian Point nuclear power plant complex within Cortlandt. Modifications to a metering and regulating station servicing the Cortlandt, NY area are also

¹ Looping is the connection of two or more pipes between two points, splitting gas flow to reduce pressure drop through the connected sections of the pipeline due to pressure limitations or for increasing the flow rate in a bottlenecked or constrained segment or section.

² MAOP is a term defined in federal minimum pipeline safety regulations that defines the maximum pressure under which a gas pipeline may normally be operated. Pressures greater than MAOP are allowed in certain situations.

³ There are varying numbers in AIM Project filings to FERC for the miles of pipe replacement within Cortlandt. The 8 mile figure is derived from Exhibit G data.

included in the project. This report focuses on the gas transmission infrastructure that could impact Cortlandt.

The following are major findings and observations from my analysis of the AIM Project proposal, sections of the AIM DEIS, and a detailed review of CEII information supplied in the Exhibit Gs submitted to FERC by Algonquin that contain important system information.⁴ Exhibits 4 and 5, which are included as attachments, contain more detailed information bolstering my general observations and findings, but these two specific Exhibits are CEII protected under a nondisclosure agreement (“NDA”), and are not for public release or distribution, even among Cortlandt officials, unless they have also signed a FERC CEII NDA.

Major Accufacts Findings and Observations for Cortlandt concerning the AIM Project:

- 1) The new 42-inch pipeline in Cortlandt is considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d claimed for this project.
- 2) Actual gas velocities, an important variable driving design, for the pre-AIM existing gas transmission pipelines spanning Cortlandt are within acceptable ranges, but after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments.
- 3) Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed for AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortlandt. However, the AIM proposal and the DEIS contain no evaluation of the impacts of these future expansions.
- 4) The Safety Evaluation and Analysis for the Indian Point Nuclear Plant (“IPEC”) submitted by Entergy concerning the risk associated with the 42-inch AIM pipeline is seriously deficient and inadequate.
- 5) Additional precautions are warranted for the proposed southern 42-inch pipeline route near the Buchanan-Verplanck Elementary school.

Expanding on the above major findings and observations:

- 1) **The new 42-inch pipeline in Cortlandt is considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d claimed for this project.**

The following Exhibits included as Attachments supplement this report:

- 1) Exhibit 1 is a simple schematic developed from information in the public domain of the existing and proposed major pipeline segments for the AIM Project that could impact

⁴ Accufacts requested the CEII information from FERC on September 11, 2014 and received the files from Algonquin on October 6, 2014.

Cortlandt. The AIM Project is proposing to modify the pipeline segments between the Stony Point and Southeast Compressor Stations into two significantly different operating loops via new mainline interconnects utilizing pressure reducing/letdown valving installations, and various pig launcher/receiver modifications (to be installed within Cortlandt) to produce: (a) a “Smaller Loop” mainline system consisting of first an existing 30-inch pipeline reducing to an already existing 26-inch mainline, and (b) a “Larger Loop” mainline system consisting of new proposed 42-inch pipe reducing down to an already existing downstream 30-inch mainline (See Exhibit 1).⁵

- 2) Exhibit 2 is a figure captured from the AIM Project DEIS showing the relative location of where the existing 26-inch pipeline will be removed and replaced by new 42-inch pipeline that AIM has labeled “Take-up and Relay (T&R),” in essentially the same right-of-way (“ROW”) through most of Cortlandt.⁶
- 3) Exhibit 3 is a figure taken from the AIM DEIS depicting existing and proposed Algonquin Hudson River crossings for the AIM Project.⁷
- 4) Exhibit 4 (CEII Protected) is a hydraulic profile (pipeline pressure vs. pipeline milepost) developed by Accufacts for the smaller diameter (30-inch and 26-inch) lower MAOP pipeline (Smaller Loop) segment within New York State, pre and post AIM Project, for the pipelines between the Stony Point and Southeast compressor stations, incorporating Exhibit G information provided by Algonquin’s submission to FERC.
- 5) Exhibit 5 (CEII Protected) is a hydraulic profile developed by Accufacts for the larger diameter (42-inch and 30-inch) higher MAOP pipeline (Larger Loop) segment within New York State, pre- and post-AIM Project, for the pipelines between the Stony Point and Southeast compressor stations, incorporating the Exhibit G information provided by Algonquin’s submission to FERC.

Exhibits 1, 2, and 3 provide a quick perspective of the pipeline changes and general routing for the AIM Project in that specific segment of concern between the compressor stations that bridge Cortlandt. Exhibits 4 and 5 provide a more detailed technical perspective of some of the hydraulics (pressures, MAOP, and gas velocities at certain locations along the pipelines) for the flow cases that drive various Accufacts conclusions and findings. For ease of reference in Exhibit 4 and 5, I have set the milepost (“MP”) reference for the segments beginning at the Stony Point, NY compressor station at zero. The pipelines crossing Cortlandt generally begin at the landfall on the east side of the Hudson River, and are thus

⁵ Pig launcher/receivers are above ground installations to permit the periodic launching or receiving, depending on their location within the system, of multi-ton inline inspection tools inserted into an operating transmission pipeline to assess for various pipeline imperfections, or certain possible threats, to pipeline integrity.

⁶ Algonquin Gas Transmission LLC Docket No. CP14-96-000, FERC/EIS-0254D, “Algonquin Incremental Market Project Draft Environmental Impact Statement,” filed to the FERC Docket on 8/6/14, p. 2-2.

⁷ *Ibid.*, p. 3-20.

between approximately MP 3.5 and 11.5 as indicated on Exhibits 4 and 5. Exhibit 4 contains an approximately 5 mile shorter length for the Smaller Loop between compressor stations post versus pre AIM, which Accufacts cannot explain from the Exhibit G data provided. This discrepancy suggests an error in this important submission to FERC. This difference does not affect Accufacts' major findings or conclusions, however.

In addition, I have reviewed the Hudson River crossing DEIS discussions currently consisting of: two existing 24-inch pipelines, and an existing 30-inch pipeline, and a proposed new 42-inch pipeline crossing to be routed either south of the existing three gas pipeline river crossings or at a more northern crossing (the Hudson River Northern Route Alternative, or "HRNRA") near the existing three pipelines (See Exhibit 3).⁸ This new 42-inch Hudson River crossing, to be installed via Horizontal Directional Drill, or HDD, if possible, would connect to new onshore 42-inch pipelines installed on each side of the Hudson River as part of AIM. The southern 42-inch crossing option would incorporate a new additional pipeline right-of-way of approximately 1 3/4 miles within Cortlandt as it is routed out of the existing pipeline ROW and south of the Indian Point Energy Complex passing a church and an elementary school. The route eventually rejoins the existing 26-inch ROW east of IPEC to continue its route through Cortlandt in the existing ROW as indicated in Exhibit 3 filed to the FERC Docket on August 6, 2014 as the Draft Environmental Impact Statement, or DEIS.

A detailed review of the CEII files captured by the hydraulic profile in Exhibit 5 clearly demonstrates the 42-inch pipeline is not needed for the AIM project claimed capacity increases of 342 Dth/d. The Larger Loop is taking considerable pressure drop introduced from a new "midstream" mainline pressure reducing/letdown valve located at the end of the new pipe MAOP 42-inch upgrade at the edge of Cortlandt, essentially wasting horsepower added at the Stony Point compressor station (See Exhibits 1 and 5). The 42-inch proposal overbuilds the system for the capacity/horsepower increases submitted for AIM. The Stony Point Compressor station after the AIM project, fails on both the Larger Loop and Smaller Loop mainline systems to operate anywhere near Stony Point Compressor Station discharge pipeline MAOP, and the 42-inch to 30-inch mainline pressure reducing/letdown valve takes a major pressure drop for the stated maximum flow conditions.⁹ This indicates that added AIM horsepower is wasted at the Stony Point Compressor station increasing pollution emissions.

Exhibit 5 can also be used to demonstrate that a new smaller (i.e., 30 or 36-inch 850 psig MAOP pipe instead of the proposed 42-inch) can provide the additional 342 Dth/d claimed in the AIM proposal. Installation of higher rated MAOP pipe on the discharge segment of Stony Point Compressor Station deals with one bottleneck on this segment spanning the compressor stations. AIM is incomplete, however, as it fails to also adequately address the

⁸ The proposed installation of the 42-inch across the Hudson River and south of Indian Point is in a new ROW within the Town of Cortlandt. The existing two, 24-inch and one, 30-inch crossings under the Hudson River will remain active and pressurized, in "standby" backup service if ever needed, which is a reasonable operating approach for this river crossing.

⁹ For the Exhibit G CEII cases reviewed, the Smaller Loop does not take pressure drop at the new pressure reducing/letdown valve to stay within the 26-inch mainline MAOP.

weaker bottleneck mainline segments downstream of Cortlandt entering the Southeast Compressor Station that are experiencing extremely high actual gas velocities.

Installation of the overbuilt/oversized AIM 42-inch pipe appears to be an initial effort by Algonquin to minimize future construction impacts by installing a pipeline larger than that needed for the present stated application, but positions the system for future major increased expansions. This is especially true if further downstream pipeline “bottlenecks” to the Southeast Compressor Station can be overcome with additional pipe replacements/upgrades to reduce the extreme actual gas velocities in these remaining existing mainline pipes.

The AIM Project is clearly oversized and is only a partial step toward a more system-wide pipe upgrade path within the state of New York. The AIM Project thus appears to be either an unjustified pipeline expansion or a segmentation of a larger, system-wide upgrade. The AIM Project effort is substituting quicker-to-install compressor horsepower placed at Stony Point against additional needed pipe replacement. Such a quicker path may be an attempt to avoid a proper environmental review and introduces a substantial loss of pipeline system efficiency via wasted horsepower and subsequent increased air pollution emissions. This inefficiency is not addressed in AIM’s DEIS.

2) Actual gas velocities, an important variable driving design, for the existing gas transmission pipelines spanning Cortlandt are within acceptable ranges, and after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments.

For a natural gas transmission pipeline a critical variable, actual gas velocities (in ft/sec, or fps) along the system, is very relevant, usually driving piping mainline modification/addition decisions and compressor horsepower installations. Actual gas velocities within a pipeline segment are mainly a function of:

1. the internal pipeline diameter,
2. the required gas flow along a given pipeline segment, usually reported at standard flow conditions,
3. pipeline pressure, which decreases and varies down a pipeline, and
4. pipe segment MAOP.¹⁰

Because natural gas is compressible as pressure decreases along a pipeline, actual gas velocities increase for the same cross-sectional area of the pipe and same gas flow stated at standard conditions. Gas flow as stated at standard conditions of temperature and pressure can vary depending on possible major additions and takeoffs along a specific pipeline segment, though many segments do not have major receipts or deliveries. Because the pressure at the downstream segment is less than the upstream pressure, actual mainline velocity is usually (but not always, depending on such factors as receipts/deliveries) highest for pipeline segments immediately upstream of compressor stations (at lowest segment

¹⁰ There is an associated effect of gas temperature on gas velocity but this influence in long transmission pipelines is usually not leveraging.

pressure). High gas velocities can also be experienced in segments where the effective cross sectional area of a pipeline, or looped pipelines, is restricted or “pinched,” compared to the rest of the segments experiencing similar standard flows and pressures.

Accufacts has observed that maximum actual gas velocities along a specific pipeline have usually been set by company internal standards that keep velocities well below those that could result in mainline erosion and based on other considerations. As a result, federal minimum pipeline safety regulations have not established maximum gas velocities for gas transmission pipelines. Unfortunately, Accufacts has found that more than one company has elected to change, ignore, or modify their own internal maximum historical gas velocity standards in recent FERC filings in order to minimize project costs and/or accelerate applications/approvals with FERC and project startup on multibillion dollar expansion projects. For example, I place little credence in studies or industry standards submitted to FERC that try to convey that a maximum gas velocity of 100 fps is appropriate for gas transmission pipelines.¹¹ For many reasons, including close proximity to population areas, gas transmission velocities should be set at limits well below those of production pipelines.

For gas transmission pipelines, two cases are usually important in actual gas velocity determinations: the velocities at “design” capacity, and the velocities at “peak flow” which will usually be higher than the design case. These two terms are often not defined in a FERC process and their misuse or misapplication can have serious consequences on safe and appropriate operation of a gas transmission pipeline.

Peak flow cases and their probable duration usually establish the maximum actual gas velocity design control within a transmission pipeline segment, as well as the needed additional horsepower and pipeline operating pressure, but this should be confirmed by the development of a hydraulic profile (pipeline operating pressure vs milepost) of the boundary case incorporating the gas additions and removals along a pipeline system that may differ between the cases. Peak flow cases usually set the maximum operating pressure which can affect a safety design review within a pipeline segment, but not always. The information provided in Exhibit Gs usually permits one to develop such a simple hydraulic profile as that captured in Exhibits 4 and 5. Fortunately, the Exhibit Gs and supporting documents for the AIM Project provided under CEII Nondisclosure Agreements provided sufficient relevant details to reliably evaluate this system at important points where actual gas velocities may be critical for the AIM Project and provide an indication where pipeline bottlenecks remain for possible future capacity increases.

A detailed analysis of the information provided under FERC CEII nondisclosure and Algonquin NDA agreements has allowed Accufacts to develop the hydraulic profiles of Exhibits 4 and 5.¹² Further, Accufacts’ calculations based on this CEII protected data

¹¹ Accufacts Report to Delaware Riverkeeper, “Evaluation of Actual Velocity Critical Issues Related to Transco’s Leidy Expansion Project,” dated Sept 8, 2014 (FERC Docket No. CP13-551, Accession No. 20140910-5084 submitted 9/10/2014).

¹² Accufacts was required to take a highly unusual step of signing an Algonquin NDA, which raises serious questions about the CEII process in this FERC filing.

indicate that actual gas velocities do not exceed prudent velocities in the pipeline segments spanning Cortlandt for both the AIM base and expansion cases. In fact, the resulting very low gas velocities for these segments after AIM suggest the pipelines crossing Cortlandt will be able to easily accommodate considerable future expansions via horsepower increases at the Stony Point compressor station.

- 3) Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed for AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortlandt. However, the AIM proposal and the DEIS contain no evaluation of the impacts of these future expansions.**

While the gas transmission pipelines crossing Cortlandt for the CEII cases reviewed indicate actual gas velocities well within acceptable ranges, this is not the case for much of the existing looped pipelines remaining downstream of Cortlandt but upstream of the Southeast Compressor Station in New York. Actual gas velocities on these existing 26 and 30-inch downstream transmission pipelines are at the highest levels that Accufacts has observed in the many FERC CEII filings we have been asked to review (well beyond 60 feet per second). Such high gas velocities suggest further pipe replacement projects in the Algonquin system in New York are needed or forthcoming. Such additional expansions should not be segmented in phases, but should be considered as one overall project requiring a complete environmental review considering their cumulative environmental impact. FERC needs to pursue this important possible segmentation question in further detail.

Because of gas compressibility, pipeline segments facing high gas velocities from increased demand can reduce velocities by increasing compressor horsepower with one or a combination of the following approaches: (1) increase system operating pressure subject to the MAOP limitations of the pipe, (2) rerate or uprate the segment of the pipe MAOP following certain pipeline safety minimum regulations for such upgrades that can introduce some serious risks unless a proper integrity hydrotest is performed, (3) replace or loop the pipeline usually with higher MAOP rated pipe, to yield a larger effective diameter for the segment, and/or (4) shorten the interval between compressor stations by adding new compressor stations that essentially raise the system average operating pressure.

While the 42-inch take and replace segments (42-inch to replace portions of the existing 26-inch) overcompensate for basically the upstream half of the looped system between Stony Point and Southeast Compressor Stations within New York, the remaining existing looped New York pipeline systems downstream of Cortlandt are a serious impediment given inefficiencies of the looped remaining pipeline system both in limited pipe diameter and low MAOP. I would anticipate further 26-inch pipe replacement proposals on this segment downstream of Cortlandt and upstream of the Southeast Compressor Station in the near future that take full advantage of additional capacity of the 42-inch proposed installation applied for in this Docket. Commensurate with such an additional pipe segment upgrading will most likely be a need for additional compressor horsepower at Stony Point.

4) The Entergy-submitted Safety Evaluation and Analysis for the Indian Point Nuclear Plant (“IPEC”) concerning the risk associated with the 42-inch AIM pipeline is seriously deficient and inadequate.¹³

After a careful review, Accufacts has concluded that the above referenced Entergy Safety Evaluation and Analysis (“Analysis”), which includes enhanced pipeline measures proposed by the pipeline operator for the 42-inch pipe segment near IPEC fails to adequately capture the threat and, more importantly, prudently demonstrate that rupture of the new 42-inch higher MAOP pipeline will not markedly impact IPEC facilities, including IPEC’s ability to “failsafe” shutdown from such a pipeline rupture. A 42-inch pipeline rupture is a far greater release event than that from the existing 26- or 30-inch lower MAOP gas transmission pipelines now operating in close proximity to IPEC.

A primary deficiency in the Analysis is the critical assumption of a three minute response time to identify, acknowledge, and close appropriate gas mainline remote isolation valves in event of a pipeline rupture. This assumption is unrealistically optimistic, ignoring both systemic dynamics (compressor and pipeline system rupture dynamics/interactions that mask remote rupture identification), uncertainty in the SCADA monitoring that will further delay remote recognition of a pipeline rupture, and control room operator confusion and related human factors that will also easily further delay control room remote response actions of a pipeline rupture, all of which will work to drive response well beyond the assumed 3 minute time. In addition, the 3 minute assumption disregards initial release and subsequent blowdown times dictated by the laws of thermodynamics related to pipeline rupture, even large 42-inch gas transmission pipelines. History is filled with clear examples of gas transmission pipeline rupture events generating high heat flux events well past an hour, so the 3-minute response assumption in the Analysis is highly unrealistic and not appropriate for this sensitive infrastructure site, especially with a 42-inch high MAOP pipeline. Such important issues must be taken into consideration in any prudent and realistic safety analysis concerning critical energy infrastructure, such as a nuclear power plant, where gas transmission pipeline rupture interactions, such as loss of nearby power grid or substations and resulting loss of power to IPEC, may cascade or snowball, driving the nearby IPEC facility to failure or prevent emergency access.

The Analysis has identified that in the vicinity of IPEC the 42-inch pipeline will be enhanced, or upgraded, to consist of X-70 API 5L grade pipe with a thicker wall thickness of 0.72 inches, buried to a minimum depth of four feet.¹⁴ While I approve of these specific proposed safety enhancement measures to increase the 42-inch pipeline safety near IPEC, additional arguments presented in the Analysis are very misleading or inappropriate so as to cause one to underrepresent the real risks of pipeline rupture on/near IPEC, even with the enhancements. These additional arguments are far from complete in preventing a pipeline

¹³ Entergy letter to U.S. Nuclear Regulatory Commission, “10 C.F.R 50.59 Safety Evaluation and Supporting Analysis Prepared in Response to the Algonquin Incremental Market Natural Gas Project Indian Point Nuclear Generating Unit Nos. 2 & # Docket Nos. 5-247 and 50-286 License Nos. DPR-26 and DPR-64,” dated August 21, 2014.

¹⁴ *Ibid.*, Sheets 3 to Sheet 10 of 21.

rupture. For example, the argument to install a concrete barrier over the pipeline to prevent possible damage from third parties at first blush sounds like an appropriate step. Unfortunately, Accufacts has seen too many pipeline near misses where such barriers were defeated, negating the effectiveness of such barriers to avoid serious damage to high-pressure pipelines. Accufacts has yet to see a steel pipeline that cannot be damaged by third party threat activities, especially damage that could result in delayed pipeline rupture. I have seen similar misguided arguments presented in the Analysis that steel pipelines can be made difficult to puncture, reflected in some very poor pipeline risk management approach studies and safety risk analyses trying to improperly convey the impression that pipelines cannot be made to rupture. Delayed pipeline ruptures generating massive explosions and flames are caused by damage that seldom punctures the pipe, but the pipe is weakened to where it eventually fails in time as a rupture, a large pipeline fracture that occurs in microseconds during operation.

The Analysis should more thoroughly assess the impact of pipeline rupture on IPEC facilities and operation. Such a safety hazard analysis is unique to the IPEC facilities and should thoroughly evaluate and document a process safety management approach to assess the real effect on IPEC of the proposed 42-inch, 850 MAOP, gas transmission if it should rupture. Given the seriousness of a nuclear plant loss-of-containment incident, that analysis should reflect actual gas rupture dynamics and realistic duration and impact for this specific location and system. Such an analysis should be performed and subjected to a true independent process hazard analysis that would assure any equipment loss impacted by such a large diameter pipeline rupture would not prevent the “failsafe” shutdown of IPEC, nor loss of radiation storage containment that could cascade into a radiation release in this highly populated and sensitive location. Risk management analysis should be considered seriously deficient if it dismisses low probability events with catastrophic consequences as no probability. History has repeatedly demonstrated that when it comes to complex systems, low probability events can easily become linked, substantially increasing the likelihood and risks, and may even drive a system to catastrophic failure with all too predictable disastrous consequences. A more thorough and truly independent safety analysis of the 42-inch pipeline and its possible rupture effects to IPEC are warranted and the results made public given the deficiencies and many failings of the current Analysis to instill confidence in the public.

5) Additional precautions are warranted for the proposed southern 42-inch pipeline route near the Buchanan-Verplanck Elementary school.

Given the various concerns raised from involved officials and citizens about the risks associated with the southern routing option of the new 42-inch proposed pipeline in close proximity to the Buchanan-Verplanck Elementary School, Accufacts will comment on pipeline related safety concerns concerning this matter. Ironically, current federal pipeline minimum safety regulations, industry codes, or best practices, do not specifically or adequately address siting issues or risks related to natural gas pipelines near schools. Pipeline safety regulations are moot concerning such important siting related issues for various reasons.

Nevertheless, there are several precautions that Accufacts recommends that would prove helpful to minimize the consequences of a 42-inch pipeline rupture if the new pipeline is routed in such a sensitive location near the school. There is no requirement that a pipeline be placed in an existing or new ROW, or even in the middle of a pipeline ROW. The placement of the pipeline right-of-way and the actual location of the pipeline within the ROW should be carefully reviewed and assured so as to minimize the removal of trees that buffer between the proposed pipeline and the school. Such large and numerous trees can reduce the impact of blast and thermal radiation to structures and individuals, buying critical time that can markedly reduce injury or loss of life associated with a possible pipeline rupture. In addition the Buchanan-Verplanck Elementary School is constructed mostly of masonry that has a much greater tolerance, or survivability, during a rupture event. Such more hardened structures also serve as excellent radiation shields to shelter individuals from blast and thermal radiation. While there is no requirement, placement of school ball and play fields where individuals are most likely to be caught unsheltered, are best situated as presently located, in the shadow of the building away from the gas transmission pipeline. Sheltering substantially increasing the likelihood of individual survival should a pipeline rupture.

The stark reality is that pipeline safety regulations and industry standards do not provide FERC with siting precautions for such sensitive locations. Integrity management ("IM") pipeline safety regulations have attempted to instill certain additional safety precautions in such potential High Consequence Areas, or HCAs. Unfortunately, the first phase of these IM regulations, in effect for more than ten years now, have met with very mixed success as evidenced by many high profile pipeline ruptures indicating further improvements in IM regulation are warranted.¹⁵

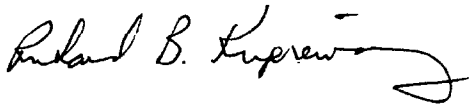
Conclusion

It should be clear, from a review of the Exhibits and the above discussions, that the attempt to replace segments of the 26-inch pipeline segment with a 42-inch pipeline across Cortlandt are not in sync with the claimed increased gas demands identified in the current AIM FERC filing and subsequent DEIS. The operator appears to be positioning for further expansions on the Algonquin system and there are still serious bottlenecks on the looped system between the Stony Point and Southeast Compressor Stations that should have been included with this FERC application. The operator appears to be attempting to utilize horsepower compressor additions that can be permitted more quickly than pipe installations, in an attempt to overcome pipeline bottleneck inefficiencies in remaining segments spanning New York State.

Accufacts cannot overstate the importance of performing a full and complete process hazard safety analysis, independently demonstrating, especially to the public, that there will be no interplay between a possible gas transmission pipeline rupture and the IPEC facilities to failsafe shutdown or cause a loss of radiation containment in such a sensitive and highly populated area

¹⁵ Sites where significant numbers of people can gather near a pipeline, such as churches and schools, fall under the definition of High Consequence Areas, meriting additional pipeline safety integrity management precautions as per Subpart O of 49CFR§192 for gas transmission pipelines.

of the country. A proper and thorough hazard review and analysis may suggest another 42-inch route is warranted to assure the safety of IPEC from this gas transmission pipeline infrastructure. While Accufacts can appreciate attempts to keep certain information of such an important safety analysis somewhat secret, much more detailed effort is needed to assure the public that prudent and complete safety analysis efforts have been performed in choosing possible pipeline options in this location.

A handwritten signature in black ink, reading "Richard B. Kuprewicz". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard B. Kuprewicz
President,
Accufacts Inc

Exhibit 1

Simplified Schematic - Algonquin Gas Transmission Pipelines Stony Pt to Southeast Compressor Stations Looped Segment Pre & Post AIM Project Proposal

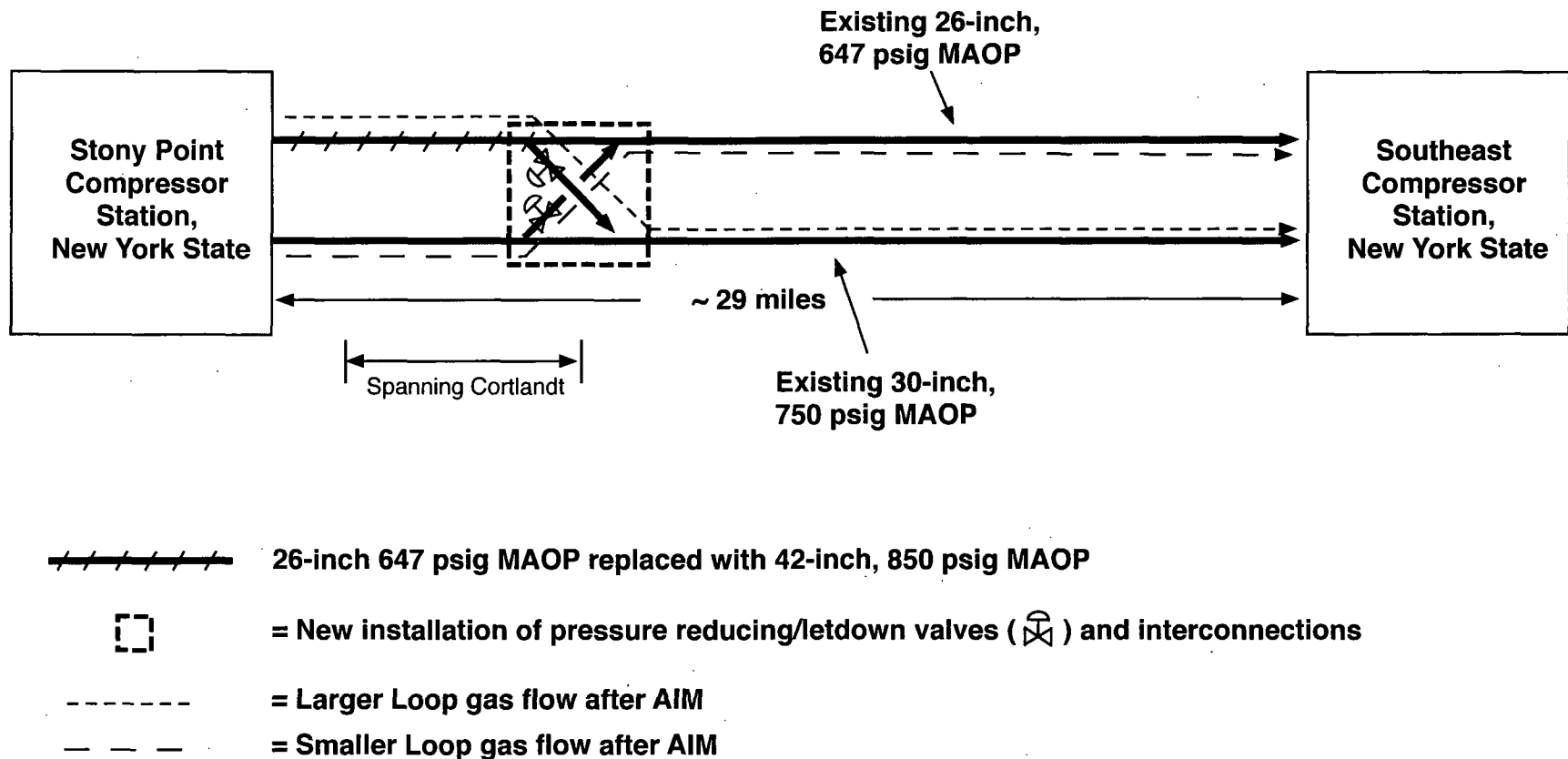


Exhibit 2 – AIM Project Overview Map from DEIS Showing General Location of Replacement of 26-inch with 42-Inch Pipeline Across Cortland, NY

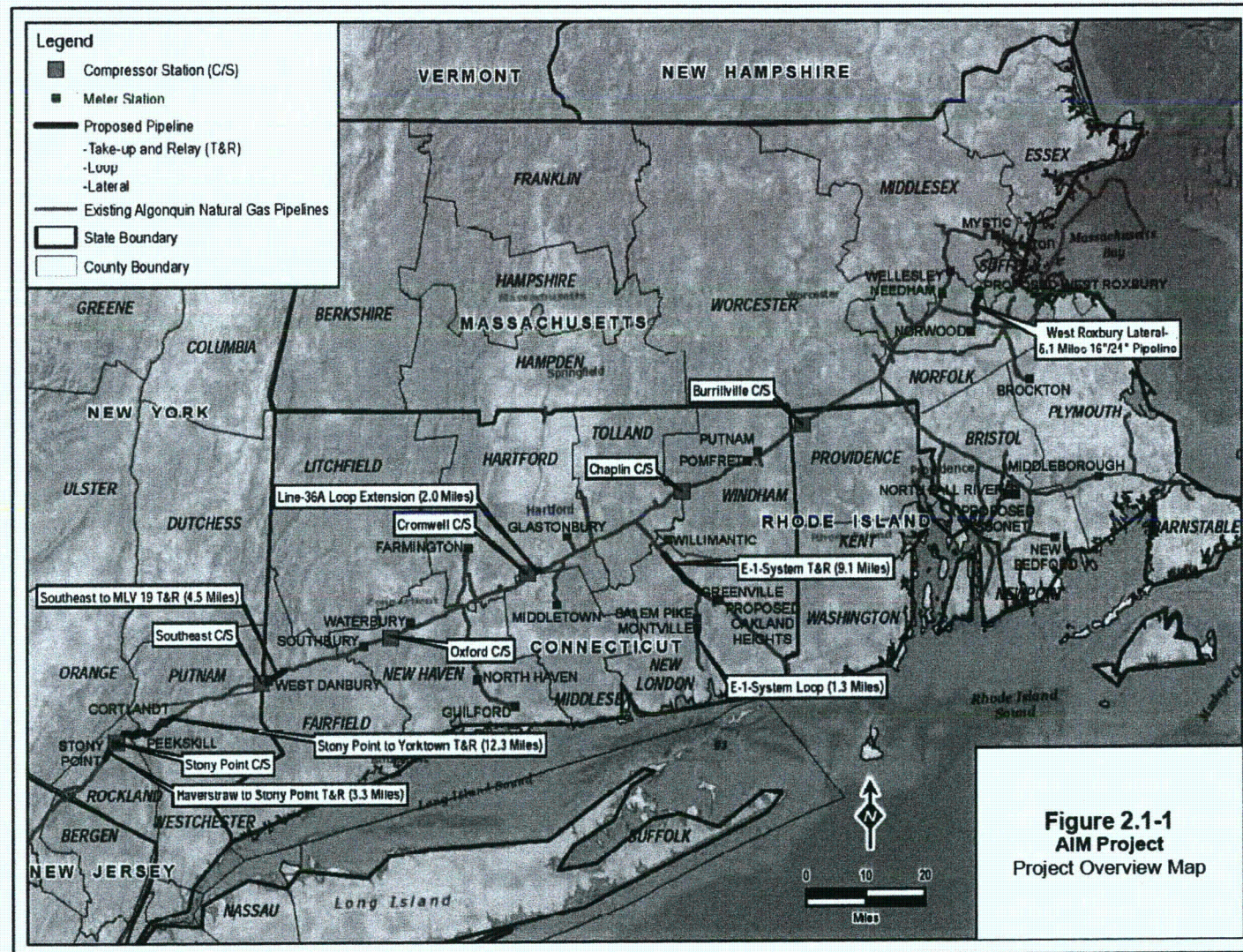
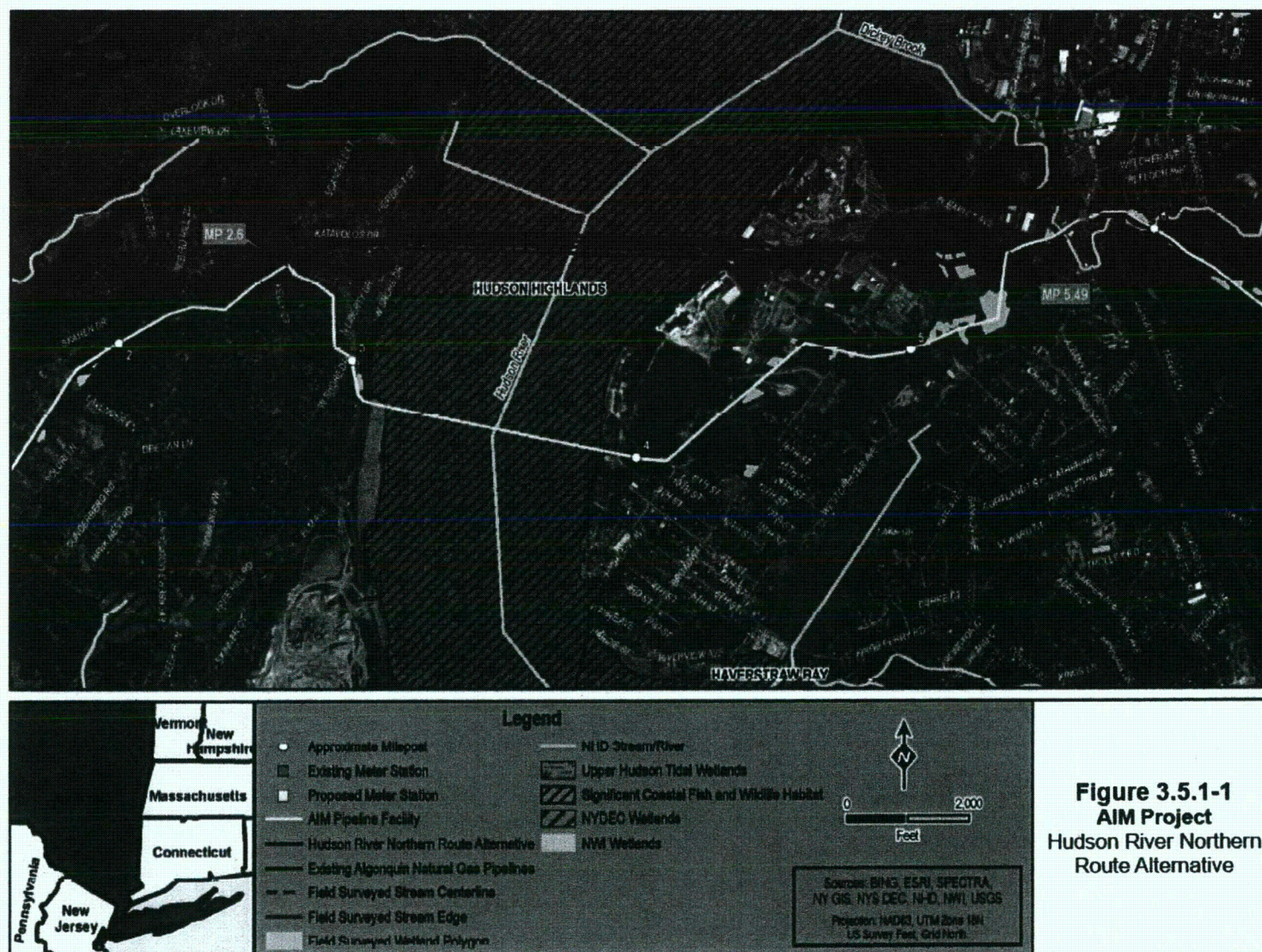


Exhibit 3 – Algonquin Pipeline Hudson River Crossings, Existing and Proposed from AIM DEIS



Tammara, Seshagiri

From: Pickett, Douglas
Sent: Thursday, December 18, 2014 4:38 PM
To: Banic, Merrilee; Tammara, Seshagiri; Setzer, Thomas; Carpenter, Robert; Cylkowski, David; Beaulieu, David; Prescott, Paul
Cc: Miller, Chris; Beasley, Benjamin; McCoppin, Michael; Kavanagh, Kerri
Subject: Background Information for Paul Blanch 2.206 Petition
Attachments: 20141015 final signed IP 2 206 petition on AIM project .pdf; Kuprewicz IP Gas analysis.pdf; IP23 2014 004 final.pdf

NRR.

ML14394A751

Folks –

Early next year we'll be forming a Petition Review Board (PRB) to address the attached 2.206 petition from Mr. Paul Blanch. The petition has been supplemented by the attached Accufacts Inc. report. Finally, I have attached the Region 1 inspection report regarding the licensee's site hazards analysis (starts on page 14).

ML14314A053

I was previously provided your names to support the PRB and I hope you will still be available. Mr. Blanch and Mr. Kuprewicz will make a joint presentation before the PRB as part of the 2.206 process (See Management Directive 8.11, ML041770328). As you probably know, the PRB will not formally meet until after the presentation by the petitioners. At that time, we will discuss the petition and make our initial recommendation.

Please let me know if you're not familiar with our 2.206 process or if you have any questions.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

A-15

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Wednesday, December 03, 2014 9:40 AM
To: McCoppin, Michael
Subject: FW: Indian Point Gas Line Review

Mike:

For Your Information. This is the request. I do not have a formal documentation of analysis.

Rao

From: McCarver, Sammy
Sent: Thursday, November 20, 2014 9:54 AM
To: Tammara, Seshagiri
Cc: Tifft, Doug; Burritt, Arthur; Trapp, James
Subject: Indian Point Gas Line Review

Rao,

Our State Liaison Officer has a request from a NY State legislator for a copy of the "NRC risk analysis" for the proposed gas line.

Do you have any formally documented analysis/report, other than personal notes?

Thanks,

*Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382*

A-116

Tammara, Seshagiri

From: Tifft, Doug
Sent: Thursday, December 04, 2014 4:02 PM
To: Weil, Jenny
Cc: McCoppin, Michael; Tammara, Seshagiri
Subject: FW: NRC hazard analysis request
Attachments: Report_Confirmatory_of_IPEC_AIM_HazardAnalysis.docx

Jenny, attached is the NRC analysis. It is OUO – Security related information.

Mike / Rao, I'm cc'ing you for your awareness since you are the own this document which was requested by a member of Congress.

-Doug

From: Tifft, Doug
Sent: Thursday, December 04, 2014 3:58 PM
To: Weil, Jenny; Burritt, Arthur
Cc: Dorman, Dan; Lew, David; Dacus, Eugene; McNamara, Nancy
Subject: RE: NRC hazard analysis request

Ok. I'll send you the OUO version separately so you can enter it into your process for releasing non-public documents to Congress.

-Doug

From: Weil, Jenny
Sent: Thursday, December 04, 2014 3:47 PM
To: Tifft, Doug; Burritt, Arthur
Cc: Dorman, Dan; Lew, David; Dacus, Eugene; McNamara, Nancy
Subject: RE: NRC hazard analysis request

Thanks Doug,

Markey wants the OUO document.

From: Tifft, Doug
Sent: Thursday, December 04, 2014 3:37 PM
To: Weil, Jenny; Burritt, Arthur
Cc: Dorman, Dan; Lew, David; Dacus, Eugene; McNamara, Nancy
Subject: RE: NRC hazard analysis request

It's not public, it is OUO. We have a copy, but the document was authored by NRO. NRO is working through the FOIA process to determine if the document can be redacted or if it should be withheld in its entirety.

Does Markey want the un-redacted OUO document or just what we provide at the end of the FOIA process?

-Doug

From: Weil, Jenny
Sent: Thursday, December 04, 2014 3:21 PM

To: Burritt, Arthur
Cc: Dorman, Dan; Lew, David; Dacus, Eugene; McNamara, Nancy; Tift, Doug
Subject: FW: NRC hazard analysis request

The document requests continue. This one came in yesterday from Senator Markey's staffer, who is referencing a FOIA request in seeking to obtain the NRC's hazards analysis (I've attached the inspection report). I did a quick search in ADAMS but couldn't find it. Is it public? Can you assist in this request?

Thank you,

Jennyh

From: Freedhoff, Michal (Markey)
Sent: Wednesday, December 03, 2014 3:22 PM
To: Weil, Jenny
Cc: Freedhoff, Michal (Markey)
Subject: NRC hazard analysis request

Could I please get this document as well?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight & Investigations
Office of Senator Edward J. Markey
218 Russell Senate Office Building
Washington, DC 20510
202-224-2742

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Monday, December 08, 2014 4:42 PM
To: Pickett, Douglas
Cc: McCoppin, Michael
Subject: RE: Blast Analysis

Doug:

I have not seen these two SGI documents. John gave me a document prepared by David J. Allen "Consequences of Fire and Explosion Following the Release of Natural Gas from Pipelines Adjacent to Indian Point" dated August 14, 2008 for Risk Research Group, Inc., which I reviewed for resolution of petition by Paul Blanch in 2010. It is hand written on this document as non-public, Sensitive-Security Related.

Thanks,
Rao

From: Pickett, Douglas
Sent: Monday, December 08, 2014 4:21 PM
To: Dimitriadis, Anthony; McCoppin, Michael; Tift, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Andoh, Roger
Cc: Gordon, Dennis; Tammara, Seshagiri
Subject: RE: Blast Analysis

I spoke to John Boska, the previous PM for Indian Point, and he says the following documents are safeguards and relate to the 2008 Indian Point blast analysis:

3/28/08, SGI SLES document (non-public), NS107994, Indian Point 3, calculation IP-CALC-08-00033, Rev. 0, Evaluation of Algonquin Pipeline Explosion.

3/4/11, NSIR review of IP gas pipelines, SGI SLES document NS108076.

Rao – Are you able to compare these older documents with the current blast analysis and determine the differences?

From: Dimitriadis, Anthony
Sent: Monday, December 08, 2014 12:26 PM
To: McCoppin, Michael; Tift, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Pickett, Douglas; Andoh, Roger
Cc: Gordon, Dennis
Subject: RE: Blast Analysis

Mike: That was me. Last week, Art Burritt mentioned to me that there was a previous analysis (possibly in the 2008 timeframe) that was designated as Safeguards Information (SGI). I don't know anything about the previous analysis, but Art sounded fairly certain and recommended that we look in SLES where all SGI files are currently stored.

I will defer to Art about that, but it would help if we could flush that out.

Tony

From: McCoppin, Michael

Sent: Monday, December 08, 2014 11:58 AM

To: Tifft, Doug; Trapp, James; Lorson, Raymond; Krohn, Paul; Burritt, Arthur; McCarver, Sammy; Weil, Jenny; Dimitriadis, Anthony; Pickett, Douglas; Andoh, Roger

Cc: Gordon, Dennis

Subject: Blast Analysis

Folks,

Rao looked at his records after the 10:00 call this morning and found the previous 2008 blast analysis from the contractor marked Security Related Information in his file cabinet. The blast analysis was performed by the same contractor for the licensee and similar in format to the one we just completed. Rao look puzzled during the call this morning until he could check his records regarding the marking of the material. Someone? during the call this morning mentioned they thought the previous analysis was Safeguards material... I took an action to find why there was a delta between the two.

Whoever made that statement, please contact me so we can validate what documents we are discussing.

Thanks,

mike

Tammara, Seshagiri

From: McCoppin, Michael
Sent: Monday, January 12, 2015 11:37 AM
To: Tammara, Seshagiri
Subject: FW: IPEC Gasline Analysis

-----Original Message-----

From: Lorson, Raymond
Sent: Monday, January 12, 2015 11:36 AM
To: McCoppin, Michael
Cc: Krohn, Paul
Subject: RE: IPEC Gasline Analysis

Thanks Mike!

Ray

-----Original Message-----

From: McCoppin, Michael
Sent: Monday, January 12, 2015 11:35 AM
To: Lorson, Raymond
Cc: Krohn, Paul
Subject: FW: IPEC Gasline Analysis

Ray,

Rao's summary to the feeder and qualifications can be found at [ML14330A276](#) which is OUO non-public in ADAMS. Let us know if you have any further questions.

Thank,

mike

-----Original Message-----

From: Tammara, Seshagiri
Sent: Monday, January 12, 2015 11:02 AM
To: McCoppin, Michael
Subject: FW: IPEC Gasline Analysis

Mike:

Please advise about this request. I have personal hand written calculations and ALOHA computer runs, but do not have a formal calculation package. Summarized methodology and results are included in the report transmitted to the Region for their use in the 50.59 Review and Evaluation/Inspection Report.

Thanks,

A-19

Rao

-----Original Message-----

From: Lorson, Raymond
Sent: Monday, January 12, 2015 8:39 AM
To: Krohn, Paul; Tammara, Seshagiri
Subject: RE: IPEC Gasline Analysis

Paul - thanks. Rao - any chance I can get a copy of our assessment to look at for awareness?

Thanks

Ray

-----Original Message-----

From: Krohn, Paul
Sent: Monday, January 12, 2015 7:55 AM
To: Lorson, Raymond; Tammara, Seshagiri
Subject: RE: IPEC Gasline Analysis

Ray,

I can give you the feeder, but for the exact number crunching and calcs, assumptions, etc., that was retained by Seshagiri Tammara (who goes by Rao).

Paul

-----Original Message-----

From: Lorson, Raymond
Sent: Saturday, January 10, 2015 9:14 AM
To: Krohn, Paul
Subject: IPEC Gasline Analysis

Paul - do you have a copy of the IPEC gasline analysis that NRO did for us recently. I don't recall the name of the guy who did it and would like to look at our analysis for information.

Thanks

Ray

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Thursday, January 15, 2015 12:11 PM
To: Tammara, Seshagiri
Cc: McCoppin, Michael
Subject: RE: Petitioner Presentation Before the Petition Review Board

Thanks for the continued support.

From: Tammara, Seshagiri
Sent: Thursday, January 15, 2015 12:05 PM
To: Pickett, Douglas
Cc: McCoppin, Michael
Subject: RE: Petitioner Presentation Before the Petition Review Board

Doug:

I got okay from my BC, and I am glad to support and participate as a PRB member.

Thanks,
Rao

From: Pickett, Douglas
Sent: Wednesday, January 14, 2015 3:21 PM
To: Tammara, Seshagiri
Cc: McCoppin, Michael
Subject: RE: Petitioner Presentation Before the Petition Review Board

Rao – It was my understanding that you would be a member of the Petition Review Board for the Blanch petition and I hope you can still support us. According to our procedures for reviewing 2.206 petitions, we offer the petitioner the opportunity to address the PRB. We will only listen and ask clarifying questions. The petitioner will not be allowed to have an open dialogue with the staff.

Please let me know if you can still support us.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

From: Tammara, Seshagiri

A-20

Sent: Wednesday, January 14, 2015 3:11 PM
To: Pickett, Douglas
Cc: McCoppin, Michael
Subject: RE: Petitioner Presentation Before the Petition Review Board

Doug:

I got a scheduler for petitioner presentation before PRB. I am not sure nor my BC, that I am a member of PRB. Please verify and advise.

Thanks,
Rao

-----Original Appointment-----

From: Pickett, Douglas

Sent: Wednesday, January 14, 2015 2:09 PM

To: Banic, Merrilee; Setzer, Thomas; Carpenter, Robert; Beaulieu, David; Cylkowski, David; Meighan, Sean; Beasley, Benjamin; Prescott, Paul; Solomon, Tahiri; Tammara, Seshagiri; Miller, Chris; Prussman, Stephen G
(SPrussm@entergy.com)

Subject: Petitioner Presentation Before the Petition Review Board

When: Wednesday, January 28, 2015 2:30 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: HQ-OWFN-07B04-25p

<< File: Blanch Petition 10-15-2014.pdf >> << File: Sup 1 to Blanch Petition 11-3-2014.pdf >> << File: Sup 2 to Blanch Petition 11-11-2014.pdf >>

Paul Blanch and Richard Kuprewicz of Accufacts, Inc. will make their initial presentation before the Petition Review Board on Wednesday, January 28, 2015, from 2:30 to 3:30 p.m. The original Blanch petition and the two supplements are attached.

The green ticket is OEDO-14-00737 and the TACs are MF5050 and MF5051.

Tammara, Seshagiri

From: Pickett, Douglas NRR
Sent: Wednesday, February 04, 2015 4:21 PM
To: Miller, Chris; Banic, Merrilee; Setzer, Thomas; Carpenter, Robert; Beaulieu, David; Cylkowski, David; Meighan, Sean; Beasley, Benjamin; Prescott, Paul; Solomon, Tahirih; Tammara, Seshagiri; McCoppin, Michael; Oberson, Greg; Sheehan, Neil; Render, Diane; Dimitriadis, Anthony; Willis, Dori; Basturescu, Sergiu; Tifft, Doug; Opara, Stella; Figueroa, Gladys
Subject: Transcript of Blanch Petition Review Board Jan 28 2015
Attachments: OEDO-14-00737 Transcript of 1-28-2015 - Pickett Edits.docx ML15044A459

FYI – Attached is the transcript for the meeting of January 28, 2015, between the Petition Review Board, Paul Blanch, and Richard Kuprewicz.

I have made edits due to spelling and identification of speakers. Please let me know if you believe any additional changes need to be made. Otherwise, the attached transcript will be entered into ADAMS and become a supplement to the Blanch petition.

Lee and I will be scheduling the first meeting of the PRB in response to the petition.

Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

NH

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Thursday, February 19, 2015 11:07 AM
To: McCoppin, Michael
Subject: Sandra Galef Response
Attachments: Sandra Galef Response.docx

Mike:

I have reviewed and made slight changes to Doug's letter. Please review, comment and correct. We can discuss further.

Thanks
Rao

A-22

Sandra R. Galef
Assemblywoman 95th District
The Assembly State of New York, Room 641
Legislative Office Building
Albany, NY 12248

Dear Ms. Galef:

I am responding to your letter of January 15, 2015, to NRC Chairman Allison Macfarlane regarding the proposed Algonquin Incremental Market (AIM) Project where a 42-inch diameter natural gas pipeline is proposed to cross a portion of the owner controlled property at the Indian Point Energy Center in Buchanan, NY. Members of your staff have previously discussed the AIM project with staff from the Nuclear Regulatory Commission (NRC) Region I Office located in King of Prussia, PA, with support from NRC headquarters staff located in Rockville, MD.

NRC regulations required that Entergy Nuclear Operations, Inc., the licensee for Indian Point, perform a site hazards analysis to determine the impact that the proposed natural gas pipeline would have on the facility. Accordingly, Entergy performed an analysis that assumed a complete rupture of the proposed 42-inch diameter gas pipeline and concluded that the plant could safely shut down and that the proposed gas pipeline would ~~did~~ not represent an undue risk to the safe operations of the facility. Separately, the NRC staff reviewed Entergy's analysis and concluded that it was reasonable and included rationale assumptions. In addition, the staff performed an independent confirmatory analysis assuming conservatively a complete rupture of the 42-inch diameter gas pipeline and similarly concluded that the plant could operate safely or could shut down and that the proposed pipeline would ~~did~~ not represent an undue risk.

Your letter stated that the NRC analysis was based on unrealistic assumptions and severely underestimated the ability of remote operators to isolate the gas pipelines and stop the flow of gas. Your letter also included a letter from Mr. Richard Kuprewicz, President of Accufacts, Inc., where he states that the Entergy site hazard analysis is severely deficient and inadequate. Finally, you requested that an independent risk analysis be performed before the Federal Energy Regulatory Commission approves a certificate to build the proposed AIM Project.

During previous discussions with your staff, you questioned Entergy's assumption that remote operators located in Houston, TX, could recognize a pipeline break and take appropriate manual actions to close system isolation valves and stop flow within 3 minutes of a pipe break. During these same discussions, you were informed that the NRC had received a petition from Mr. Paul Blanch where he also called for an independent analysis of the safety impact of the proposed AIM Project and that Mr. Blanch would have the opportunity to discuss his concerns with the NRC's Petition Review Board.

On January 28, 2015, Mr. Paul Blanch, with assistance from Mr. Richard Kuprewicz, made their presentation before NRC's Petition Review Board where they discussed their concerns over the proposed AIM Project. Their presentation focused on the following three items. First, they stated that it was absolutely unreasonable to assume that remote operators located in Houston, TX, would be able to detect pressure losses resulting from a postulated pipe rupture and take actions resulting in isolating gas flow within 3 minutes. Based on his experience, Mr. Kuprewicz

estimated that the remote isolation valves would not close prior to 30 to 60 minutes following a pipe rupture. Second, they believed that the controlling factor following a postulated pipe rupture would be the critical heat flux resulting from an extended fire that would last much longer than 3 minutes and would result in melting of essential safety systems and components at the Indian Point site. They acknowledged that the robust concrete structures at the Indian Point site would not likely be adversely impacted by the overpressure pulse associated with the initial explosions. Third, they insisted that an independent safety analysis be performed to more accurately determine the impact of the proposed AIM project on the Indian Point site.

As a result of the presentation by Messrs. Blanch and Kuprewicz, the NRC staff performed a series of sensitivity studies to determine the impact of a delayed closure of the pipeline's isolation valves. The sensitivity studies were bounded with the assumption of an infinite source which, simply stated, is the case where the isolation valves are not closed and remain open(not closed in 3 minutes) indefinitely. The results of the infinite source on the staff's confirmatory analysis resulted in only a minimal increase in the peak overpressure pulse as well as the critical heat flux at safety related Structures, Systems and Components (SSCs) of the plant. Due to the distance between the proposed routing of the 42-inch diameter natural gas pipeline and structures, safety systems and components located at the Indian Point site, the predicted increase in peak pressure and critical heat flux remained below levels that would adversely impact the safe operations at the Indian Point site.

The NRC staff believes that it has adequately addressed the primary objective of safe operation of the plant or safe shutdown of the plant, and principal concerns of Messrs. Blanch and Kuprewicz. Conservative analysis performed independently by both Entergy and the staff have concluded that the initial peak pressure pulse and critical heat flux are dominant and that the actual time to close the piping system's isolation valves has little impact on the results. The proposed routing of the AIM Project pipeline will be located at a sufficient distance such that a postulated rupture of the pipeline will not adversely impact the safe operations at the Indian Point site. Finally, as described in the NRC's inspection report dated November 7, 2014, NRC inspectors thoroughly examined the qualifications of the individuals who performed the blast analysis for both Entergy and the NRC and concluded that both had the requisite knowledge and expertise to perform these calculations thus precluding the need for an additional independent analysis.

Thank you for sharing your concerns on this important issue. Please do not hesitate to contact me if you have any additional questions or concerns.

Sincerely,

Michele G. Evans, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

estimated that the remote isolation valves would not close prior to 30 to 60 minutes following a pipe rupture. Second, they believed that the controlling factor following a postulated pipe rupture would be the critical heat flux resulting from an extended fire that would last much longer than 3 minutes and would result in melting of essential safety systems and components at the Indian Point site. They acknowledged that the robust concrete structures at the Indian Point site would not likely be adversely impacted by the pressure pulse associated with the initial explosions. Third, they insisted that an independent safety analysis be performed to more accurately determine the impact of the proposed AIM project on the Indian Point site.

As a result of the presentation by Messrs. Blanch and Kuprewicz, the NRC staff performed a series of sensitivity studies to determine the impact of a delayed closure of the pipeline's isolation valves. The sensitivity studies were bounded with the assumption of an infinite source which, simply stated, is the case where the isolation valves are not closed and remain open indefinitely. The results of the infinite source on the staff's confirmatory analysis resulted in only a minimal increase in the peak pressure pulse as well as the critical heat flux. Due to the distance between the proposed routing of the 42-inch diameter natural gas pipeline and safety systems and components located at the Indian Point site, the predicted increase in peak pressure and critical heat flux remained below levels that would adversely impact the safe operations at the Indian Point site.

The NRC staff believes that it has adequately addressed the principal concerns of Messrs. Blanch and Kuprewicz. Conservative analysis performed independently by both Entergy and the staff have concluded that the initial peak pressure pulse and critical heat flux are dominant and that the actual time to close the piping system's isolation valves has little impact on the results. The proposed routing of the AIM Project pipeline will be located at a sufficient distance such that a postulated rupture of the pipeline will not adversely impact the safe operations at the Indian Point site. Finally, as described in the NRC's inspection report dated November 7, 2014, NRC inspectors thoroughly examined the qualifications of the individuals who performed the blast analysis for both Entergy and the NRC and concluded that both had the requisite knowledge and expertise to perform these calculations thus precluding the need for an additional independent analysis.

Thank you for sharing your concerns on this important issue. Please do not hesitate to contact me if you have any additional questions or concerns.

Sincerely,

Michele G. Evans, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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ADAMS ACCESSION NO.: ML15

OFFICE	LPL1-1/PM	LPL1-1/LA	LPL1-1/BC	DORL/DD	DORL/D
NAME	DPickett	KGoldstein	BBeasley	GWilson	MEvans
DATE	02 / / 2015	02 / / 2015	02 / / 2015	02 / / 2015	02 / / 2015

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✓

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Friday, February 20, 2015 8:34 AM
To: McCoppin, Michael; Tammara, Seshagiri; McCarver, Sammy; Setzer, Thomas; Burritt, Arthur; Krohn, Paul; Tifft, Doug; McNamara, Nancy; Stewart, Scott
Cc: Miller, Chris; Banic, Merrilee; Beasley, Benjamin
Subject: Paul Blanch Comments on 3 Minute Valve Closure Time
Attachments: Re: Transcript of PRB Meeting; RE: Transcript of PRB Meeting

NRR

Folks - As you know, the transcript of the PRB meeting of January 28, 2015 (ML15044A459), with Paul Blanch has been released. I immediately received an email from Mr. Blanch questioning the NRC's basis for accepting the 3 minute valve closure time. In the attached two emails, you will see my response to Mr. Blanch, which steals from a previous Region 1 response to Sandra Galef, and Mr. Blanch's response to that.

Please be prepared to discuss the thoughts expressed below by Chris Miller during next week's PRB meeting. I am also requesting that Mike McCoppin and Rao Tammara discuss their post-PRB sensitivity studies that demonstrated that the 3 minute valve closure time is largely inconsequential.

Doug

From: Miller, Chris
Sent: Thursday, February 19, 2015 4:43 PM
To: Pickett, Douglas
Subject: PRB Meeting

NRR

Hi Doug,

Can we get the tech folks to give us a bit more on the 3 minute estimate, how much difference that it makes in the blast/burn analyses and if there is any way to gauge the time from the open pipe to loss of pressure actuation, and the actual response time of the operators in the 24/7 center / (panel continuously monitored, or 1 person, who leaves panel to go on rounds, bathroom etc.)? This will be important in the upcoming review.

chris

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Wednesday, February 25, 2015 1:42 PM
To: Krohn, Paul; McCarver, Sammy; Setzer, Thomas; Miller, Chris; Banic, Merrilee; Beasley, Benjamin; McCoppin, Michael; Tammara, Seshagiri; Thompson, William; Solomon, Tahiri; Figueroa, Gladys; Meighan, Sean; Render, Diane; Carpenter, Robert; Cylkowski, David; Prescott, Paul; Beaulieu, David
Cc: Burritt, Arthur; Dimitriadis, Anthony
Subject: Indian Point Gas pipeline: Basis for 3 Minute Valve Closure

NRR

Followup Item from PRB Meeting of February 24, 2015

At the request of the PRB, the Region 1 inspectors who performed the 50.59 inspection of Entergy's site hazards analysis were asked if they questioned Entergy's assumption that the pipeline isolation valves would close within 3 minutes of a pipe rupture.

As indicated below, they did not.

From: Krohn, Paul
Sent: Wednesday, February 25, 2015 8:10 AM
To: McCarver, Sammy; Setzer, Thomas
Cc: Pickett, Douglas; Burritt, Arthur; Dimitriadis, Anthony
Subject: RE: Gas pipeline - 50.59, 3 minutes time basis

Tom,

Our basis for not looking into the basis for 3 minutes was that it was DOT based and outside our jurisdiction.

Paul

From: McCarver, Sammy
Sent: Wednesday, February 25, 2015 7:26 AM
To: Setzer, Thomas; Krohn, Paul
Cc: Pickett, Douglas; Burritt, Arthur; Dimitriadis, Anthony
Subject: RE: Gas pipeline - 50.59, 3 minutes time basis

RI

I did not

From: Setzer, Thomas
Sent: Tuesday, February 24, 2015 3:29 PM
To: Krohn, Paul; McCarver, Sammy
Cc: Pickett, Douglas; Burritt, Arthur; Dimitriadis, Anthony
Subject: Gas pipeline - 50.59, 3 minutes time basis

RI

Paul and Sammy - A question from the 2.206 call today was asked to be passed onto you guys. In our inspection of the 50.59, did we evaluate whether or not the 3 minute assumption in the 50.59 had an adequate basis? Rao's analysis bounded this by saying an infinite source would not adversely affect safety, but did we look into this 3 minutes at all via calcs or evaluations to determine if it was reasonable?

Thanks
TOM

A-MH

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Thursday, February 26, 2015 3:17 PM *NRR*
To: Miller, Chris; Banic, Merrilee; Beasley, Benjamin; Burritt, Arthur; Stewart, Scott; Setzer, Thomas; Trapp, James; Tift, Doug; McNamara, Nancy; Screnci, Diane; Sheehan, Neil; Meighan, Sean; McCoppin, Michael; Tammara, Seshagiri; Carpenter, Robert; Cylkowski, David; Figueroa, Gladys; Solomon, Tahirih; Prescott, Paul; Render, Diane; Newman, Garrett; Pinson, Brandon; Petch, Jeromy
Subject: Additional Emails from Paul Blanch Received on February 26, 2015
Attachments: FERC letter to Senator Schumer; Indian Point PRB transcript

FYI – I am forwarding the attached information received from Mr. Paul Blanch today. They include:

1 – A letter to me dated February 26, 2015, that further questions the 3 minute valve closure assumption. It quotes large portions of 10 CFR 50, Appendix B on testing. Mr. Blanch has requested that this letter be included as a supplement to his petition.

2 – A letter from FERC to Senator Charles Schumer of New York dated February 20, 2015, where FERC describes the NRC analysis of a pipe rupture adjacent to the Indian Point site.

3 – A letter to me also dated February 26, 2015, that quotes the above FERC letter and asks for additional analysis.

Paul M. Blanch

Energy Consultant

26 February 2015

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
USNRC
King of Prussia, PA

Doug:

Thanks for a direct answer to my question. I have carefully reviewed all of this information from the NRC and Entergy prior to submitting my 2.206 petition.

I have also reviewed Department of Transportation (DOT) Pipeline Hazardous Material Safety Administration (PHMSA) website and Resource Report 11, "Reliability and Safety," and 49 CFR 190-199. None of these NRC cited references the 3 minute isolation times. I would like to see industry/NRC research or actual calculations, history or testing supporting this assumed isolation time.

There is no indication or documentation supporting this imagined 3 minute closure time. Exactly where did this number originate other than from Entergy's 50.59 submittal? There are numerous reports from ASME, NTSB publicly available <http://www.nts.gov/investigations/AccidentReports/Pages/pipeline.aspx> that discuss closure time and termination of flammable gas flow from a pipe rupture. The two most prominent are the San Bruno fire and the Edison, NJ gas line rupture in 1994 but many more can be above cited NTSB website.

I think the NRC needs to do some research on actual events rather than blindly accepting a questionable 3 minute number which has no apparent basis. Should the NRC care to review these ASME, NTSB and other documents refuting this 3 minute assumption, I and Richard Kuprewicz would be more than willing to provide them to the NRC or

the NRC can search the web for the same information I have obtained.

The NRC apparently not required or plans any actual performance testing or verification. The NRC itself requires the analysis to consider an operator response time of 10 or 20 minutes. See enclosed NRC documentation.

In addition, one has to consider the actual closure time of at least (2) 42 inch valves, the blowdown time of 850 PSI--42 inch diameter pipe and five miles between valves. One must also consider the gas lines which run parallel to these lines and must also be isolated.

I have worked with the NRC/AEC for more than 40 years and do not recall it ever accepting an analysis number without verification, analysis and actual testing. 10 CFR 50 Appendix B clearly requires testing. Below are just two of the examples from 10 CFR 50 that requires testing of SSCs as defined in 10 CFR 50.2.

III. Design Control

Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components.

Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. These measures shall include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.

The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. The verifying or checking

process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization. Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions. Design control measures shall be applied to items such as the following: reactor physics, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for inservice inspection, maintenance, and repair; and delineation of acceptance criteria for inspections and tests.

Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization.

XI. Test Control

A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests during nuclear power plant or fuel reprocessing plant operation, of structures, systems, and components. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. Test results shall be documented and evaluated to assure that test requirements have been satisfied.

Once again, where did the 3 minute time originate?

Please consider this additional information as part of my 2.206 petition.

Paul M. Blanch

Paul M. Blanch
135 Hyde Rd.
West Hartford, CT 06117
860-236-0326

**ASSOCIATED
PUBLIC FILE**

**FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426**

CP14-96

February 20, 2015

OFFICE OF THE CHAIRMAN

The Honorable Charles E. Schumer
United States Senate
Washington, D.C. 20510

Dear Senator Schumer:

Thank you for your February 9, 2015, letter regarding Algonquin Transmission, LLC's (Algonquin) Algonquin Incremental Market Project (Federal Energy Regulatory Commission's Docket No. CP14-96-000). Specifically, you request that the environmental, safety, and public health impacts for this project be sufficiently addressed.

The final environmental impact statement (EIS) for this proposal was issued on January 23, 2015. Section 4.12 of the draft EIS identifies extensive safety information about the project, presenting the U.S. Department of Transportation's pipeline safety standards and how they relate to the population density and public use areas around the pipeline, pipeline accident data, and the impact on public safety. In response to comments, the final EIS also includes a thorough impact analysis of the pipeline facilities and Entergy's Indian Point Energy Center (IPEC). This analysis includes the Nuclear Regulatory Commission's independent evaluation of risks on the IPEC.

Section 4.8.5 of the final EIS addresses the project impacts on public lands, recreation, and local park land. The final EIS also presents the impacts on wildlife and threatened and endangered species that may occur across the entire project, including public parks. Section 4.11 of the final EIS identifies the construction and operating air emissions for the project and includes the results of a detailed air dispersion modeling analysis in comparison with the National Ambient Air Quality Standards, which are set by the U.S. Environmental Protection Agency to be protective of human health and welfare.

Lastly, section 2.6 of the final EIS explains the use of pig launcher/receivers and how solids and liquids are properly handled from these facilities. The final EIS also responds to comments about the potential presence of radon, or its decay products, in the pipeline or released through pigging activities.

2015-00025

-2-

You ask that the Commission not issue a final decision until the public has had the opportunity to comment and review this project and additional public meetings are held. The draft and final EIS were mailed to the affected landowners. As identified in the final EIS, FERC staff held public scoping meetings and draft EIS public comment meetings in New York to obtain input from the public, agencies, and elected officials. All who attended these meetings were provided the opportunity to orally present comments or submit written comments. Also, associated with the scoping meetings and public comment meetings were public comment periods in which FERC received written comments. FERC staff continued to accept comments made on the record beyond the close of each of these comment periods.

The Commission will consider staff's findings in the EIS, as well as all other information in the record, including public comments, in acting on Algonquin's application. The Commission's decision on whether to authorize this project will be based on a careful review of the entire record, including information on safety, security, and environmental issues relating to this project, and will be based on the law, facts, and science. I hope the above information has been helpful. If I can be of any further assistance in this or any other Commission matter, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cheryl A. LaFleur'.

Cheryl A. LaFleur
Chairman

Paul M. Blanch
Energy Consultant

26 February 2015

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
USNRC
King of Prussia, PA

Doug:

On February 20, 2015, the FERC Chairman responded to Senator Schumer (letter enclosed) stating the following:

The final environmental impact statement (EIS) for this proposal was issued on January 23, 2015. Section 4.12 of the draft EIS identifies extensive safety information about the project, presenting the U.S. Department of Transportation's pipeline safety standards and how they relate to the population density and public use areas around the pipeline, pipeline accident data, and the impact on public safety. In response to comments, the final EIS also includes a thorough impact analysis of the pipeline facilities and Entergy's Indian Point Energy Center (IPEC). This analysis includes the Nuclear Regulatory Commission's independent evaluation of risks on the IPEC.

I assume this is part of the public record however; I have been unable to locate the information.

Please provide me with the information supplied to FERC by the NRC that enabled FERC to come to this critical decision highlighted above.

Paul M. Blanch

Paul M. Blanch
135 Hyde Rd.
West Hartford, CT 06117
860-236-0326

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Thursday, February 26, 2015 7:25 AM
To: Miller, Chris; Banic, Merrilee; Beasley, Benjamin; Burritt, Arthur; Stewart, Scott; Setzer, Thomas; Trapp, James; Tift, Doug; McNamara, Nancy; Screnci, Diane; Sheehan, Neil; Meighan, Sean; McCoppin, Michael; Tammara, Seshagiri; Carpenter, Robert; Cylkowski, David; Figueroa, Gladys; Solomon, Tahirih; Prescott, Paul; Render, Diane
Subject: NY Assemblywoman Galef Statement on Indian Point Gas Pipeline
Attachments: Galef-NRC Should Shutdown AIM Siting Approval Near Indian Point.pdf

FYI – Paul Blanch forwarded the attached statement from NY Assemblywoman Sandra Galef. This is just for information and I do not consider it to be a supplement to his petition.

AHL



SANDRA R. GALEF
Assemblywoman 95th District

THE ASSEMBLY
STATE OF NEW YORK
ALBANY

CHAIR
Real Property Taxation

COMMITTEES
Corporations, Authorities and Commissions
Election Law
Governmental Operations
Health

**Galef: NRC Must Shut Down Approval of Spectra's
AIM Pipeline Siting at Indian Point**
*Assemblywoman Calls for NRC to Require an Independent,
In-Depth Safety Analysis*

(February 25, 2015) In a catastrophic failure scenario, how quickly can a 42-inch high-pressure natural gas line in Buchanan, New York be shut down from a remote access location in Texas? The Nuclear Regulatory Commission (NRC), responsible for the safety of all nuclear power plants in the U.S., believes that failsafe shutdown could occur in only three minutes.

Entergy, the operator of the Indian Point nuclear power plants, conducted a safety assessment of the proposed gas line siting, and came up with the three-minute gas pipeline shutdown estimate, which was then accepted by the Nuclear Regulatory Commission (NRC). When asked by the Assemblywoman for verification of the estimate, the NRC said that Entergy based its estimate on information provided in documents submitted by Spectra Energy to the Federal Regulatory Energy Commission (FERC).

Spectra Energy has filed its Algonquin Incremental Market (AIM) project application with the federal agency responsible for approving siting of pipelines. The AIM project calls for installing a high pressure and high volume natural gas pipeline that will pass less than two hundred feet from vital structures at Indian Point.

New York State Assemblywoman Galef, who represents Buchanan, New York, has raised concern about the three-minute shutdown claim. She believes the NRC needs to require a full and complete independent analysis of the safety of the AIM project in relation to Indian Point, in which assumptions are properly validated. "It is irresponsible to take a recommendation from a company like Spectra that wants their business to be here, and not independently validate it. The safety of the people in the Hudson Valley region should take precedence over the interests of two energy production companies. There is no other place in this country where a gas pipeline comes as close to a nuclear power plant as there is here, so it requires above and beyond oversight and analysis," Galef said.

The NRC actions violate its own regulatory obligations to require verifiable safety testing methodology and results for systems related to Indian Point. The NRC accepted Entergy's estimate for a safe shutdown of the natural gas pipeline in a catastrophic failure and explosion – the information is little more than an unsubstantiated claim of Spectra Energy buried in its paperwork submission to FERC. To compound the failure of these agencies, FERC then accepted the NRC's explanation.

Upon a detailed review, pipeline expert Rick Kuprewicz and nuclear expert Paul Blanch have concluded that the estimated timeframe is inaccurate and defies the law of thermodynamics should an explosion occur. In spite of requests from members of the U.S. House and Senate as well as Assemblywoman Galef, Westchester County legislators and local elected officials, the NRC and FERC have refused to require Entergy or Spectra to have their claims verified by an independent analysis.

"We must do a better job analyzing these potential threats and should not be rushing to any conclusions," Galef stated. "The safety of this region is at stake."

###

Tammara, Seshagiri

From: Pickett, Douglas
Sent: Monday, March 02, 2015 4:27 PM
To: Beasley, Benjamin; Miller, Chris; McCoppin, Michael; Tammara, Seshagiri
Subject: FW: New Letter from Sandra Galef re: Indian Point Gas Pipeline
Attachments: *Tab B - 02-26-15 Galef 15-0103.pdf

NRR

*ML 15 058A684/

From: Stuchell, Sheldon
Sent: Monday, March 02, 2015 4:09 PM
To: Beaulieu, David
Cc: Pickett, Douglas; Mohseni, Aby; Banic, Merrilee; Mensah, Tanya
Subject: FW: New Letter from Sandra Galef re: Indian Point Gas Pipeline

NRR

Dave,

Some very good points, and something we should probably be looking a little deeper into.

Let's discuss further. Please set up a meeting with you, me and Lee. I want to understand what options are available to us, since we did send the letter to Paul Blanch.

Thanks,
Sheldon

From: Beaulieu, David
Sent: Monday, March 02, 2015 4:01 PM
To: Stuchell, Sheldon
Cc: Pickett, Douglas; Banic, Merrilee
Subject: FW: New Letter from Sandra Galef re: Indian Point Gas Pipeline

NRR

Sheldon,

I was a member of the PRB that met regarding this 2.206 last week. The PRB decided to reject the petition. I said at the meeting that the basis for rejecting, while acceptable, is very unwise. Specifically, I said that Blanch is absolutely correct that it is not reasonable to credit closing the 42" isolation valve within 3 minutes by gasoline operators in Houston responding to a low pressure alarm. To address this, NRR staff calculated the effect of the valves remaining open (e.g., heat flux) and determined the consequences acceptable. The PRB decided it would be acceptable to disposition this issue in the response to Blanch by stating the NRR staff's calculations showed the consequences acceptable. It approach is acceptable but unwise.

The licensee, not the NRC, is responsible for performing an engineering evaluation and 50.59 that uses reasonable, conservative, defensible assumptions. This is out of process. The process is that licensees perform engineering evaluations and the NRC inspects them. For such an extremely high visibility issue, why on earth would the NRC take it upon ourselves to perform the licensee's engineering evaluation for them, which ultimately we will have to make publicly available and subject to intense scrutiny. Blanch correct that 3-minutes is not reasonable and through the 2.206 process Blanch is requesting that the NRC take action to have the licensee evaluate this valid issue. The NRC should absolutely have resident inspectors inspect the issue to prompt the licensee to evaluate this issue.

Again, I continue to accept the collective wisdom of the PRB. I am simply making you aware of this potential problem because that's what you pay me for.

1442-1-1-1

AMT

Dave

~~~~~  
David Beaulieu,  
Project Manager  
NRR/DPR/PGCB  
301-415-3243

~~~~~  
From: Pickett, Douglas

Sent: Monday, March 02, 2015 9:28 AM

To: Miller, Chris; Banic, Merrilee; Carpenter, Robert; Cylkowski, David; Beaulieu, David; Solomon, Tahirih; Thompson, William; Render, Diane; Prescott, Paul; Setzer, Thomas; Burritt, Arthur; Meighan, Sean; McCoppin, Michael; Tammara, Seshagiri

Subject: New Letter from Sandra Galef re: Indian Point Gas Pipeline

FYI

Tammara, Seshagiri

From: McCoppin, Michael
Sent: Monday, March 02, 2015 10:44 AM
To: Pickett, Douglas; Miller, Chris; Banic, Merrilee; Carpenter, Robert; Cylkowski, David; Beaulieu, David; Solomon, Tahirih; Thompson, William; Render, Diane; Prescott, Paul; Setzer, Thomas; Burritt, Arthur; Meighan, Sean; Tammara, Seshagiri; Kock, Andrea
Subject: RE: New Letter from Sandra Galef re: Indian Point Gas Pipeline

Doug,

Andrea Kock (my manager) suggested we coordinate a BLOG to tell our side of the story and get it out into the public et al. in coordination with OPA... Sounds like a good suggestion...thoughts?

mike

From: Pickett, Douglas
Sent: Monday, March 02, 2015 9:28 AM
To: Miller, Chris; Banic, Merrilee; Carpenter, Robert; Cylkowski, David; Beaulieu, David; Solomon, Tahirih; Thompson, William; Render, Diane; Prescott, Paul; Setzer, Thomas; Burritt, Arthur; Meighan, Sean; McCoppin, Michael; Tammara, Seshagiri
Subject: New Letter from Sandra Galef re: Indian Point Gas Pipeline

FYI

Tammara, Seshagiri

From: Tammara, Seshagiri
Sent: Wednesday, March 04, 2015 8:55 AM
To: McCoppin, Michael
Subject: AIM Project Approval by FERC

Mike:
This is in "

FERC Approves AIM Pipeline Project That Will Run Near Indian Point Plant. The Lower Hudson Valley (NY) Journal News (3/3, Garcia, 320K) reports the Federal Energy Regulatory Commission Tuesday issued its approval to the Algonquin natural gas pipeline expansion in New York. The FERC's approval for Spectra Energy's Algonquin Incremental Market Project "will allow an increased flow of natural gas from Ramapo to various cities' delivery points in the Northeast." Critics of the expansion like Susan Van Dolsen of the group Stop the Algonquin Pipeline Expansion were "disappointed" at the FERC decision especially in light of "unanswered questions about the impact of a major pipeline breach near the Indian Point nuclear power plant." But both Entergy and the NRC advised FERC that the "pipeline would not endanger the power plant even if it exploded at its closest point to the plant."

The Armonk (NY) Daily Voice (3/4, Auchterlonie) adds that regarding the pipeline's proximity to Indian Point, "FERC notes that Entergy...performed a safety evaluation and submitted it to the Nuclear Regulatory Commission (NRC), which in turn conducted a review." FERC said the "NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the Indian Point facility." FERC added, "Therefore, the final EIS concludes that the project will not result in increased safety impacts at the Indian Point facility."

Rao

Release

ABG

Tammara, Seshagiri

From: Krohn, Paul
Sent: Wednesday, March 11, 2015 3:03 PM
To: Pickett, Douglas; Miller, Chris; McCoppin, Michael; Tammara, Seshagiri; Beasley, Benjamin; Tifft, Doug; McNamara, Nancy; Burritt, Arthur; Banic, Merrilee; Stewart, Scott; Wilson, George
Subject: RE: Another Last Call for Galef Letter Comments

Doug,

You have concurrence from Region I. I have communicated with Art and Doug and updated Division management. We have no comments on the current version.

Paul Krohn

From: Pickett, Douglas
Sent: Wednesday, March 11, 2015 2:21 PM
To: Miller, Chris; McCoppin, Michael; Tammara, Seshagiri; Beasley, Benjamin; Tifft, Doug; McNamara, Nancy; Krohn, Paul; Burritt, Arthur; Banic, Merrilee; Stewart, Scott; Wilson, George
Subject: Another Last Call for Galef Letter Comments

Folks –

I've been asked to revise the proposed Galef response to clearly state that we're responding to her letters and her concerns as opposed to responding to the Blanch petition. Here is the link to the current Galef response letter:

[View ADAMS P8 Properties ML15050A131](#)
[Open ADAMS P8 Document \(Sandra Galef Response\)](#)

For your convenience, here is the link to the Galef letter of February 26, 2015:

[View ADAMS P8 Properties ML15058A686](#)
[Open ADAMS P8 Package \(LTR-15-0103-Ticket - Sandra R. Galef, Assemblywoman, State of New York, Ltr re: Concern about the Safety of Siting the AIM Pipeline in Close Proximity to the Indian Point Energy Center.\)](#)

Also, for your convenience, here is the link to the Galef letter of January 15, 2015:

[View ADAMS P8 Properties ML15027A421](#)
[Open ADAMS P8 Package \(LTR-15-0043 Sandra Galef, Assemblywoman, State of New York, Letter re: concerns about the safety of siting the AIM pipeline in close proximity to the Indian Point Energy Center\)](#)

Paul Krohn – I would like to document Region 1 concurrence and ask if you would mind providing concurrence for the Region.

I would appreciate comments by COB today. If you can't do this, please let me know if you plan on providing comments.

Thanks - Doug

Douglas V. Pickett, Senior Project Manager

Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

Tammara, Seshagiri

From: Tifft, Doug
Sent: Thursday, March 19, 2015 1:52 PM
To: McCoppin, Michael; Tammara, Seshagiri
Subject: FW: Follow up question to NRC response letter

Mike / Rao,

See below in yellow from Assemblywoman Galef's office. They imply that we used ALOHA in lieu of RG 1.91. I thought that we used information from ALOHA, then plugged that in to the equations in RG 1.91. Assuming I'm correct, is there a one or two sentence way we can clear this up?

-Doug

From: Dana Levenberg [<mailto:levenbergd@assembly.state.ny.us>]
Sent: Thursday, March 19, 2015 1:14 PM
To: Tifft, Doug
Subject: Follow up question to NRC response letter

Dear Doug,

Thank you for helping get a response to Assemblywoman Galef's letters to the NRC re AIM siting near IPEC. Based on this letter, it appears that there has been additional analysis conducted since she had originally corresponded, perhaps in response to many of the concerns that were raised, and she is very appreciative of that. We received a copy of a letter from Paul Blanch yesterday, which identifies specifically that the EPA says the ALOHA code should not be used for assessing a pipeline rupture of the nature that is being considered in your analysis. Here is a quote from his letter:

The analysis relies on the EPA ALOHA code to predict the probability and consequences of fires, overpressure and radiant heat flux. The EPA document states the following: ***"ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends."*** (Bold emphasis added by EPA)

The Assemblywoman shared this most recent response from NRC with our two experts and Mr. Blanch suggests that "the ALOHA model is not valid for a situation such as this. This recalculation was apparently used in direct conflict with NRC and EPA requirements, to justify the project. Had the NRC used its own approved program, (Regulatory Guide 1.19) the results would have been unacceptable."

It seems that your follow up analysis is still reliant on the ALOHA model as opposed to your Regulatory Guide 1.19. Can you comment?

Again, thank you for your response.

Sincerely,
Dana Levenberg
Chief of Staff
Office of Assemblywoman Sandy Galef
2 Church Street
Ossining, NY 10562
levenbergd@assembly.state.ny.us
(914) 941-1111 (p)
(914) 941-9132 (f)

Tammara, Seshagiri

From: Beasley, Benjamin
Sent: Friday, March 13, 2015 7:11 AM
To: McCoppin, Michael; Tammara, Seshagiri
Cc: Pickett, Douglas
Subject: RE: Comments on IPEC gas pipeline analysis

Doug told me about Important to Safety. Doug is making edits to clarify the items I commented on before he submits the analysis to ADAMS. So I am satisfied.

Ben

From: McCoppin, Michael
Sent: Thursday, March 12, 2015 7:18 PM
To: Beasley, Benjamin; Tammara, Seshagiri
Cc: Pickett, Douglas
Subject: RE: Comments on IPEC gas pipeline analysis

Thanks for the comments... I'll have to consult with Rao and we will get back to you.

mike

From: Beasley, Benjamin
Sent: Thursday, March 12, 2015 8:45 AM
To: Tammara, Seshagiri; McCoppin, Michael
Cc: Pickett, Douglas
Subject: Comments on IPEC gas pipeline analysis

Rao and Mike,

I read the sensitivity study last night and I have a couple of comments. The quotes below are from the last paragraph on the first page.

"therefore 1 psi overpressure is not expected at any safety-related SSC inside the SOCA from a potential rupture and explosion at the far end of the pipeline located above the surface."

I understand that you ran the model conservatively postulating that the pipe rupture is at the far end of the line above ground. Are the distances you used to the above ground pipe or to the closest point, which would be below ground? If the distances you used are for the above ground pipe, do we need to postulate a breach of the buried pipe that is closer to the plant?

"However, as the calculated minimum safe distance of XXXXX ft is larger than the actual distances to all SSC ITS, they may experience greater than 1 psi overpressure. Therefore, the SSC ITS would be impacted."

What are SSC ITS?

"Nevertheless, their impacts are bounded by the severe/beyond design basis accidents considered as part of low probability events such as natural phenomena that include seismic, hurricane and tornado events including Loss of Offsite Power and Station Black Out (SBO) considerations with design of redundant systems, engineering safeguards and mitigation measures in the plant UFSARs."

How do we know that the effects are bounded? I think that we need to do more to establish that no serious consequences are anticipated for the SSC ITS, whatever they are.

Thanks for all your help on this project!

Ben

Tammara, Seshagiri

From: Lorson, Raymond
Sent: Monday, March 02, 2015 1:57 PM
To: Krohn, Paul; Dorman, Dan; Lew, David; Trapp, James; Burritt, Arthur; McCoppin, Michael; Tammara, Seshagiri; Pickett, Douglas; Tifft, Doug; Beasley, Benjamin; Nieh, Ho; Scott, Michael; Sheehan, Neil; Screnci, Diane; Klukan, Brett; McNamara, Nancy; Setzer, Thomas; Stewart, Scott; Dimitriadis, Anthony; McCarver, Sammy
Subject: RE: Draft Options Paper for IPEC Gas Pipeline - to Support 3/2/15 RI Meeting
Attachments: IPEC Gas Line Key Messages.docx

Thanks Paul! To supplement the plan I drafted the attached big picture messages to capture our understanding of the pipeline at Indian Point. Feel free to add to or quibble with or replace with better words or your own!

Ray

From: Krohn, Paul
Sent: Monday, March 02, 2015 1:52 PM
To: Dorman, Dan; Lew, David; Lorson, Raymond; Trapp, James; Burritt, Arthur; McCoppin, Michael; Tammara, Seshagiri; Pickett, Douglas; Tifft, Doug; Beasley, Benjamin; Nieh, Ho; Scott, Michael; Sheehan, Neil; Screnci, Diane; Klukan, Brett; McNamara, Nancy; Setzer, Thomas; Stewart, Scott; Dimitriadis, Anthony; McCarver, Sammy
Subject: Draft Options Paper for IPEC Gas Pipeline - to Support 3/2/15 RI Meeting

All,

Here's an options paper that provides a brief background of incoming correspondence and ongoing processes regarding the IPEC gas pipeline. It presents a range of 4 options.

This should help focus our discussion at 2:00 pm. The proposed recommendation is some advance, proactive outreach on the gas pipeline prior to the 4/28 AAM.

More detail in the attached.

Paul

IPEC Gas Line Key Messages

March 2, 2015

- The NRC is not the licensing or approval authority for the gas line. In fact, if the NRC were to identify a safety problem at Indian Point imposed by construction of the gas line its authority would be limited to requiring additional actions by Entergy to mitigate the postulated concern.
- The NRC evaluated the risk posed by operation of the gas line and determined that the risk of a significant gas line failure was sufficiently low (i.e. below $1E-7$) such that no additional safety analysis or assessment was necessary.
- However, the NRC conducted an independent review of the gas line and determined that the consequences from a gas line rupture that could lead to postulated events such as the radiant heat from a jet plume fire and blast overpressure would not impact safety related equipment needed to safely shutdown Indian Point.
- The NRC's analysis followed the methodology described in Reg Guide 1.91 and also relied on the ALOHA model employed by other federal agencies such as NOAA and the EPA to evaluate the consequences of hazardous chemicals and gas line failures.
- Other postulated events such as missile generation, secondary external fires, and ground movement following a gas line failure are already analyzed and bounded by other types of external events.
- The location of the gas line and its design features near Indian Point employ a number of conservative features that further reduce the risk of this pipeline to Indian Point. Some of these features include: the pipe is thick walled, the pipe will be protected with an external shield, the pipe is below grade and the topography between the pipe and Indian Point would mitigate the expected potential effects of a pipe failure.
- The NRC will maintain an awareness of the pipe should it be installed and will revisit the above should new information emerge regarding the location or size of the pipeline.

Tammara, Seshagiri

From: Krohn, Paul
Sent: Monday, March 02, 2015 1:52 PM
To: Dorman, Dan; Lew, David; Lorson, Raymond; Trapp, James; Burritt, Arthur; McCoppin, Michael; Tammara, Seshagiri; Pickett, Douglas; Tifft, Doug; Beasley, Benjamin; Nieh, Ho; Scott, Michael; Sheehan, Neil; Screnci, Diane; Klukan, Brett; McNamara, Nancy; Setzer, Thomas; Stewart, Scott; Dimitriadis, Anthony; McCarver, Sammy
Subject: Draft Options Paper for IPEC Gas Pipeline - to Support 3/2/15 RI Meeting
Attachments: IPEC Gas Pipeline Communcitions Options Rev1.docx

All,

Here's an options paper that provides a brief background of incoming correspondence and ongoing processes regarding the IPEC gas pipeleine. It presents a range of 4 options.

This should help focus our discussion at 2:00 pm. The proposed recommendation is some advance, proactive outreach on the gas pipeline prior to the 4/28 AAM.

More detail in the attached.

Paul

AAH
ABV

Communications Options IPEC Gas Pipeline

Purpose

Gain internal Region I alignment on path forward regarding IPEC gas pipeline and how/when the NRC responds to questions from 1/15/15 and 2/26/15 correspondence. Seek input from HQs staff who may also be on the line.

Incoming Correspondence and Other Ongoing NRC Processes

- 1/15/15 – Assemblywoman Galef to NRC Chairman.
 - Galef conferred with gas pipeline and nuclear experts about NRC's risk analysis and concluded that it was based on unrealistic assumptions.
 - Based on expert's input, Galef called for an independent risk assessment.
 - Galef requested that any NRC approvals be delayed until the independent risk assessment is complete.
- 2/26/15 – Galef/Gillibrand to NRC Chairman.
 - Claims very important assumption in safety analysis (3 minutes to isolate) has not been validated.
 - Press release from Galef's office also issued same day. Paul Blanch's 2.206 petition also referenced.
- 2.206 petition from Paul Blanch. Initial presentation before PRB done on 1/28/15. 3 items provided:
 - 3 minutes to isolate is unreasonable. Should be more like 30 to 60 minutes.
 - Controlling factor would be critical heat flux, not the pressure wave.
 - Requested independent review of safety analysis.

Recommendation

Communicate what we can as now, staying clear of the 2.206 process to the extent possible. Recommend using a mix of Options 1 and 2 (see next page) during March 2015 to proactively communicate the Agency's position on the gas pipeline prior to the 4/28 AAM.

While the pipeline subject is expected to come up at the 4/28 AAM, having had advance communications with local officials and docketed replies should help explain the NRC's position.

Options

Option	Pros	Cons
<p>1. Respond to 1/15 and 2/26 letters early ahead of 2.206 petitions.</p> <p>Give partial response that addresses some issues in 1/15 and 2/26 letters, but steers clear of 2.206 questions.</p> <p>Could also involve an OpEd piece in the Editorial section of the local IPEC newspaper.</p> <p>Note – Mike McCoppin has reached out to FERC contacts for peer review. Would want FERC peer review complete before issuing partial response.</p>	<ul style="list-style-type: none"> • Response to 1/15 letter has already been drafted. With slight modifications, could be used to answer 1/15 and 2/26 letters concurrently. • Message – NRC has done sensitivity studies regarding an infinite source of gas and increase in pressure wave and heat flux are minimal and still well below acceptance criteria. • Gets initial response out. Begins to build communication plan leading up to Options 2 and 3. • Allows process 2.206 petition to continue. 	<ul style="list-style-type: none"> • May complicate 2.206 responses. Will need careful coordination with NRR and OGC. (i.e., petitioner and consultant may participate in any outreach efforts to Galef's office).
<p>2. Government to Government (GTG) meeting with targeted Galef/Gillibrand office in March 2015.</p> <p>In-person, telephone, or webinar.</p>	<ul style="list-style-type: none"> • Demonstrates forthcoming regulator actions to government peers in that meeting would occur in advance of the AAM in late April. • May allay some questions at April AAM regarding gas pipeline. • May prevent other incoming letters and prevent further expenditure of NRC resources. • May reduce FOIA requests and workload. 	<ul style="list-style-type: none"> • May complicate 2.206 responses. Will need careful coordination with NRR and OGC. (i.e., petitioner and consultant may participate in any outreach efforts to Galef's office)
<p>3. Wait until 2015 AAM cycle. GTG on 4/27 with AAM on 4/28.</p>	<ul style="list-style-type: none"> • More time to complete peer review of NRC calculations. 	<ul style="list-style-type: none"> • More difficult questions may arise during public Q&A at AAM. If Option 2 is done, the NRC could say that security sensitive issues have been discussed with elected officials in March.
<p>4. Wait til 2,206 petition final decision is issued before responding to two incoming letters.</p>	<ul style="list-style-type: none"> • Official NRC position will be issued by an Office level Director to close issue. 	<ul style="list-style-type: none"> • Public questions likely to keep coming in, especially after the April AAM. • Loss of working relationship with Galef/Gillibrand.

Tammara, Seshagiri

From: McCarver, Sammy
Sent: Wednesday, September 24, 2014 8:56 AM
To: Tammara, Seshagiri
Subject: ALOHA Tech Docs
Attachments: * ALOHA Final techdoc and QA.pdf, ALOHA manual 2007.pdf

RI

*
@EPA.gov

Rao,

Don't know if you have a need for the attached docs, but I thought I'd send them along since I have them.

*Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382*

A-155

Tammara, Seshagiri

From: McCarver, Sammy
Sent: Wednesday, September 24, 2014 11:50 AM
To: Pickett, Douglas; Krohn, Paul
Cc: Dimitriadis, Anthony; Tammara, Seshagiri; Beasley, Benjamin; Burritt, Arthur; McCoppin, Michael
Subject: RE: IPEC Responses to Your Questions for the Gas Line 50.59

That works for me. If possible, schedule call for morning because I'll be traveling to IPEC later that day to support HAB exercise on 7th (unless I'm not needed for call).

*Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382*

From: Pickett, Douglas
Sent: Wednesday, September 24, 2014 11:31 AM
To: McCarver, Sammy; Krohn, Paul
Cc: Dimitriadis, Anthony; Tammara, Seshagiri; Beasley, Benjamin; Burritt, Arthur; McCoppin, Michael
Subject: RE: IPEC Responses to Your Questions for the Gas Line 50.59

I just spoke to Rao about overall schedule and Regional needs. Rao's preliminary blast analysis results are consistent with the licensee. He is seeking some additional plant-specific information which Sammy should be able to provide.

Rao and I recommend that we hold a telephone conference call with the Region on or about Monday, October 6, to discuss his final results. He plans to complete his documentation on or about October 15. This schedule should be supportive of Region 1's desire to close this inspection with the resident inspector's 3rd quarter report which should be issued in mid-November. This is also supportive of FERC's request to have a telephone conference call in late October to discuss our overall results. This call will be supportive for FERC in finalizing their EIS which is scheduled for issuance in mid-December.

Doug
]
Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit
James A. FitzPatrick Nuclear Power Plant
U.S. Nuclear Regulatory Commission
301-415-1364
Email: douglas.pickett@nrc.gov

From: McCarver, Sammy
Sent: Wednesday, September 24, 2014 9:30 AM
To: Krohn, Paul; Pickett, Douglas

• **Cc:** Dimitriadis, Anthony; Tammara, Seshagiri
Subject: FW: IPEC Responses to Your Questions for the Gas Line 50.59

After providing Rao with answers from Entergy with questions he posed, I asked when he expected finish his review. I thought it was needed by end of Sept to support a feeder to resident 3rd quarter report. Per his email below, he had the impression the review did not need to be completed until end of Oct.

Please let me know if Rao's review is intended to be included in 3rd quarter report feeder or not and whether he should complete the review by the end of Sept or the end of October.

Thanks.

Sam McCarver, PE
Physical Security Inspector
U.S. Nuclear Regulatory Commission
Region I Division of Reactor Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406
610-337-5382

From: Tammara, Seshagiri
Sent: Wednesday, September 24, 2014 9:19 AM
To: McCarver, Sammy
Cc: Pickett, Douglas; McCoppin, Michael
Subject: FW: IPEC Responses to Your Questions for the Gas Line 50.59

Sammy:

Thanks for the information collected and passed on to me. I will go over and see whether any more information is required, and also may use the information if required in my review and confirmatory analysis.

I am a bit confused from your e-mail, whether I am supposed to complete my review by September 30th, 2014 to feed into the 3rd quarter report? I was under the impression that the review is to be completed by the end of October, 2014. Please clarify by discussing with the PM.

Thanks,
Rao

From: McCarver, Sammy
Sent: Wednesday, September 24, 2014 8:36 AM
To: Tammara, Seshagiri
Subject: IPEC Responses to Your Questions for the Gas Line 50.59

Rao,

Attached doc contains latest responses from IPEC.

When do you anticipate completing your review? My bosses want to put our inspection feeder into the resident 3rd quarter report. Quarter ends Sept 30.

Sam McCarver, PE
Physical Security Inspector

RI

Tammara, Seshagiri

From: Krohn, Paul
Sent: Wednesday, October 22, 2014 11:31 AM
To: Tammara, Seshagiri; Dimitriadis, Anthony; McCarver, Sammy
Cc: Burritt, Arthur; Setzer, Thomas; Stewart, Scott
Subject: FW: Draft IPEC 3Q Report Feeder on Proposed Gas Pipeline - Request for Short Review and Sanity Check before processing feeder to DRP.
Attachments: IPEC 3Q Report FeederR1 - Pipeline Blast Analysis Rev3.docx

RI

ML143076748

Rao, Tony, and Sammy,

I have pulled together your comments and revised the write-up. Please give it a quick review and sanity check before I process the feeder and it goes to DRP. As a final check, please confirm that you do not have any proprietary information in your possession. Thanks.

Paul

From: Krohn, Paul
Sent: Friday, October 17, 2014 10:35 AM
To: Dimitriadis, Anthony; 'Sammy McCarver'
Cc: R1ALLEGATION RESOURCE; 'Richard Urban'; Warnek, Nicole
Subject: IPEC 3Q Report Feeder on Proposed Gas Pipeline - Krohn Changes and Need to Verify some tasks were Completed

RI

Tony,

Please review the attached feeder from Sammy for OUO/SRI info. I think it is written pretty cleanly. Sammy – I also made some slight changes for clarifications. Please make sure that I have not altered the basis of the inspection you performed.

Rich/Nicole – I also added some explicit sentences regarding an IPEC allegation we received related to the IPEC proposed pipeline. Sammy – please verify that these additional sentences are what you actually did, as I think we need this documented to disposition the allegation.

Thanks. Note – My changes are highlighted.

Paul

From: Cowan, Grace
Sent: Friday, October 17, 2014 8:43 AM
To: Krohn, Paul
Subject: Please review and approve this Feeder and email to Workflow Thank You. IPEC 3Q Report FeederR1.docx