

Paul M. Blanch
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15 September 2015

Chairman Burns
Commissioner Baran
Commissioner Ostendorff
Cheryl McCray Office of Investigations
Lisamarie Jarriel
Rossana Raspa Office of the Inspector General
Doug Pickett
Art Burritt

Enclosed is a copy of my meeting notes from our meetings held at NRC headquarters on September 10 and 11, 2015.

I appreciate the time provided to me and listening to my vital concerns related to Indian Point.

Sincerely.



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Summary of meetings with the Nuclear Regulatory Commission September 9th and 10th, 2015

Background

I. Spectra AIM Project

Spectra Energy Partners submitted an application to the Federal Energy Regulatory Commission (FERC) for the Algonquin Incremental Market (AIM) project on February 28, 2014 (Docket number CP14-96). The project includes a new high-pressure 42-inch diameter gas transmission pipeline segment that runs from Rockland County, NY, crosses the Hudson River and enters Westchester County in Verplanck, NY. The new segment crosses Entergy property for 2,159 feet from milepost 4.4 to 4.9.

In the spring of 2014, I requested the Nuclear Regulatory Commission (NRC) require that Entergy, the operator of the Indian Point Energy Center (IPEC), perform a risk analysis assessing the potential risks associated with the proposed installation of the new pipeline in the vicinity of IPEC.

The NRC informed Entergy that it would require that an analysis be conducted per the requirements of 10 CRF 50.59. I offered my previous employer, Fred Dacimo, Chief Nuclear Officer at IPEC, an opportunity to work with him to assist in this analysis. This offer was declined.

On August 14, 2014 Entergy completed its analysis and submitted a summary to the NRC. The summary of this analysis was not provided to the public until late September 2014.

From my review of this summary analysis I discovered it was scientifically deficient and contained numerous material false statements.

On or about October 15, 2014, I filed a petition under 10 CFR 2.206 identifying these material false statements and requested that the NRC take enforcement action against Entergy for submitting materially false information to the NRC in violation of 10 CFR 50.5 and 50.9.

On November 7, 2014, ignoring the serious allegations of material false statements, the NRC issued its inspection report to FERC stating there was no additional risk to IPEC from the installation of the new gas transmission line in the vicinity of IPEC. The response to my FOIA included the final NRC analysis that determined the new pipeline did not increase the risk to the Indian Point plants.

On January 28, 2015, the NRC's Petition Review Board organized a conference call related to my petition. Mr. Richard Kuprewicz of Accufacts, a globally recognized pipeline expert who has performed forensic analyses of pipeline ruptures and has testified

in many cases, joined me on the call. Mr. Kuprewicz has also been employed as a consultant investigating other high profile gas line incidents such as the San Bruno explosion.

The Petition Review Board wrote to me on April 28, 2015 stating that they recommended that my petition be declined. They did, however, offer me another opportunity to present new information. Assemblywoman Sandy Galef, myself, and many members of the public requested that a meeting be conducted in the vicinity of IPEC in accordance with the NRC's Management Directive 8.11.

The NRC denied this request and agreed only to a conference call which was held on July, 15, 2015. Assemblywoman Galef made the arrangements for the call which was held in a public library. Over 120 people were present and others participated by calling in to the conference line. Mr. Kuprewicz joined the call. During the call, I submitted new information on two documents I had obtained through FOIA requests from the NRC that demonstrated that the NRC had used handwritten, unsigned and unsubstantiated calculations to confirm the safety of the reactors. Additionally, using NRC's own calculations, I was able to determine that the blast radius was significantly underestimated and possibly falsified. Both Mr. Kuprewicz and myself identified many other major deficiencies in the risk analysis as well as contradictions in the NRC's own documents. Following the conference call, I submitted to the NRC 39 serious unanswered questions related to my petition.

Without responding to any of the 39 questions posed in my letter, on September 9, 2015 the NRC notified me by telephone and then followed up with a formal letter that it rejected my petition. During this phone call, the NRC said they agreed that pipeline expert Rick Kuprewicz raised valid points, yet stated that they did not follow up with Kuprewicz for quantitative details. The NRC instead, relied on its own unexperienced nuclear staff, and used the ALOHA modeling program¹ to assure themselves that the analysis of a gas pipeline rupture was done correctly. Not only is ALOHA prohibited from use in this situation, the nuclear staff does not have any actual experience in gas pipeline thermodynamics or accident analysis.

Mr. Kuprewicz stated in the Petition Review Board call, "In reviewing the various analyses of information provided to date, it has become obvious that those attempting to perform rupture dynamics of the 42-inch pipeline should not be doing such work, as their analyses consistently fail to capture the fundamental basics of gas pipeline rupture dynamics, especially on this system in the vicinity of the nuclear plant. From my perspective, it appears the permitting agencies are attempting to take advantage of a loophole that permits the NRC to dismiss risks if such analysis can be categorized below

¹ Direct quote from ALOHA Manual:

"You can use ALOHA to model two types of gas pipeline leak scenarios:

- A pipeline connected to a very large (**infinite**) reservoir, so that gas escapes from the broken end of the pipeline at a constant rate for an indefinite period of time; or
- A finite length of pipeline that is closed-off at the unbroken end (for example, by a shut-off valve).

Because the pressure within this section of pipe declines as gas is released, release rate drops over time, and the release continues only until the finite length of pipe is emptied.

ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends" (Bold emphasis by EPA and DOT)

a certain threshold value, while ignoring the severe consequences that might prevent the nuke plant to safely shutdown.” (PRB transcript)

On September 1, 2015, FERC granted a Notice to Proceed with construction, based on material false information, to Spectra to commence construction of the gas transmission line in the Village of Buchanan, even though the Town of Cortlandt, the Westchester County Board of Legislators and a coalition of impacted residents and grassroots groups throughout four states had filed formal Requests for Rehearing that have not yet been answered by FERC. The risks of siting the pipeline adjacent to nuclear power plants and the danger to 20 million people in the 50 mile radius of Indian Point was raised in these Requests for Rehearing.

Additionally, letters requesting that an independent risk assessment be conducted due to concerns about the validity of the Entergy risk assessment and NRC confirmatory analysis were sent to FERC and the NRC by Senators Charles Schumer and Kirsten Gillibrand, Congresswoman Nita Lowey, New York State Senators, New York State Assemblymembers, County Legislators, Town Supervisors, Town Board members, the Nuclear Resource Information Service, the Union of Concerned Scientists, Riverkeeper, Greenpeace and over 25,000 members of the public. Disregarding the Request for Rehearing and the multitude of letters, neither FERC nor the NRC have called for any independent risk assessment and is enabling the project to move forward with invalid risk assumptions.

II. Existing Algonquin pipelines

There are two existing Algonquin pipelines that were installed in the 1950’s and 60’s, prior to the construction of IPEC. On October 25, 2010, I filed a 2.206 petition alleging that the existing gas lines passed very close to vital structures and the failure of these lines, that are now 63 years old, could disable vital structures and result in a major accident. This petition was rejected under the premise that the information contained security related information that was not available to me.

In June of 2015 an IPEC operations supervisor informed me and other witnesses² that he was not aware of any gas lines within or crossing the IPEC site. When asked about his perception of the safety of having gas pipelines within the IPEC site, he answered, “you mean those gas lines in those woods over there.” He also informed us that there were no emergency procedures nor was he aware of numbers to call should the existing gas lines fail. It appears to me that IPEC management has intentionally withheld this vital information about the presence of the existing gas lines from those responsible to respond to an emergency that would have grave consequences for entire region.

Following our conversations with the operations supervisor, I filed a formal allegation via phone and in writing to the NRC’s hot line that the plant was operating in an analyzed condition, that it **must be reported within 4 hours³ and that the plant must be**

² Names will be supplied to authorized investigators upon request.

³ 10 CFR 50.72 and 50.73

shutdown until the issue is resolved⁴. The NRC later informed me that this allegation would not be accepted as an allegation because “all my issues had been previously addressed.”

The present IPEC Final Safety Analysis Report (FSAR) clearly states that a failure of these buried gas lines “is not feasible.” I believe this to be another false and unsupported statement by Entergy and ignored by the NRC staff. In a conversation I had in July 2015 with Mr. Arthur Burritt, Mr. Burritt confirmed that the buried gas pipes had never been analyzed and only the above ground pipes had been analyzed.

Congresswoman Nita Lowey will be filing a FOIA request for a copy of the NRC’s analysis that allegedly demonstrates the safety of these existing lines. Given the immediate safety issue, a responsible regulator would not wait for a FOIA response to determine plant safety.

III. Meeting notes from September 9 and 10, 2015

The following is my understanding of the discussions that occurred and the agreements reached during these meetings with the NRC Chairman, Commissioners, Office of the Inspector General, Director of the Office of Investigations, Allegations Office, and members of the 2.206 Petition Review Board (PRB).

James Riccio of Greenpeace accompanied me during my meetings with Lisamarie Jarriel and David Vito of the Allegations Branch, Rossana Raspa from the Inspector General’s Office, Chairman Burns and Commissioner Baran.

Meeting with Lisamarie Jarriel and David Vito of the Allegations Office, 9 AM, September 10, 2015

This meeting primarily focused on my allegation submitted to the NRC’s hot line on or about June 13, 2015. I informed Ms. Jarriel that it is totally inappropriate for her organization to outright reject and dismiss a major allegation (Figure 2) that the plant is operating in an unanalyzed condition. I told her that Mr. Thomas Setzer of the NRC, stated these issues had been previously addressed and the NRC would not accept my urgent communication as an allegation.

I told Ms. Jarriel that in July 2015, after my allegation was rejected, I spoke with Mr. Burritt on the phone and discussed the relevant information concerning the allegation. Mr. Burritt admitted that in response to an internal concern raised in 2008, he knew that the buried portion of the pipeline had not been analyzed. This is also confirmed within the FSAR where it is stated that a rupture of the buried gas pipe is “not feasible.” Mr. Burritt and I also had a discussion about the proposed AIM pipeline being a Design Basis Event (DBE) according to IPEC whereas the 63-year-old pipeline accident is not considered a DBE even though it is located much closer to vital structures.

⁴ It is my strongest belief that a responsible regulator would take proactive actions and immediately demand a copy of the alleged existing gas line analysis and determine if a valid analysis was conducted which considered all changes since installation including the unanalyzed removal of the original automatic closure valves.

I informed Ms. Jarriel that during to my conversation with Mr. Burritt, the NRC finally acknowledged my allegation and totally mischaracterized it totally ignoring the fact that the plant was, and still is operating in an analyzed condition.

Ms. Jarriel committed to respond in writing to both the mischaracterization of the allegation and each point identified in the allegation along with documentation supporting the NRC's position.

Meeting with Rossana Raspa of the Office of Inspector General's (OIG) office 10 AM, September 10, 2015

The purpose of this meeting was to discuss alleged wrongdoing by the NRC related to both the new and existing gas transmission lines at IPEC. Following normal OIG process, no commitments were made by the OIG during this meeting. The issues of alleged wrongdoing include the following:

- Improper closeout of the October 2014 2.206 petition without any consideration of material false statements by IPEC, nor consideration of technical issues.
- Invalid and non-existent procedures for conducting a safety analysis of the siting of a high-pressure gas pipeline that impacts the safety of 20 million residents.
- NRC accepted Entergy's statement that isolation valves would close within 3 minutes. The analyst, Mr. Rao Tammara stated to me that he just accepted this number from Entergy without question. Mr. Doug Pickett told Assemblywoman Galef that the three minute timeframe came from Spectra Energy's Resource Report #11.
- Use of unsigned, undated, unapproved, hand drawn sketches to determine the risk which must be addressed by OIG.
- NRC did not have, nor did it ever request, the technical gas pipeline information (system drawings and diagrams) from FERC necessary for a valid engineering analysis.
- NRC's refusal to accept a valid allegation reported to the NRC's "hot line".
- OPA's refusal to formally respond to a direct question about the flammable content of million gallon fuel oil tanks located within the blast radius zone. Neil Sheehan's response to me when asked if the tanks contain any flammable material, paraphrased was "To the best of my knowledge, the tanks are drained."
- Pipeline rupture calculations were not conducted per NRC guidance but instead used ALOHA code which is specifically prohibited for this application by EPA and DOT.
- NRC staff provided inaccurate information to Chairman Burns about blast radius and effects of a prolonged release of flammable gas. This inaccurate information was the basis for testimony before Congresswoman Lowey.

Meeting with NRC Chairman Burns⁵ 2 PM September 10, 2015

⁵ Attendees listed below and also included James Riccio

I informed Chairman Burns that:

- I have a very strong desire to work with the Commission and the NRC staff to resolve these major safety issues and provide assurance that IPEC is and will remain in compliance with all NRC Regulations.
- The approval provided to FERC should be immediately rescinded as it was based upon material false statements by Entergy. The safety analysis performed ignored NRC guidance (RG 1.91) and used prohibited computer codes for this type of postulated accident.
- The NRC engineer performing the confirmatory analysis has no experience with gas line accident investigations.
- The risk analysis of the pipeline's siting alongside IPEC may have been conducted by an engineer selectively using text books and published papers, however, a gas pipeline expert with field experience did not conduct or review the analysis. The NRC engineer conducting the analysis did not even question the accuracy of the information provided by Entergy.
- There must be an independent risk assessment conducted by qualified individuals that follow the guidance provided by OSHA in Appendix C to § [1910.119](#)—“Compliance Guidelines and Recommendations for Process Safety Management.” Representatives of the public must have some type of oversight role in this assessment. The cost of this analysis should be borne by Entergy. Other independent studies such as the Millstone ICAVP, Independent assessment of the safety culture at Millstone, independent safety study at Vermont Yankee, and the State of Maryland study on the Cove Point LNG expansion were paid for by the licensee. The entire analysis and approval of the pipeline siting alongside IPEC was based on material false statements contained within my 10 CFR 2.206 petition of October 15, 2015.
- In the email of April 27, 2015 from David Beaulieu that I obtained via FOIA request, the NRC staff states that if the time of valve closure after a pipeline rupture increased from 3 minutes to 1 hour, the blast radius would not be significantly impacted. According to the NRC's own guidance, the blast radius would increase by a factor of about 2.7 if the gas flow continues for 60 minutes following a pipeline rupture. Therefore, if the gas release continued for one hour, the blast radius would increase to about 3000 feet using Entergy's numbers and about 8000 feet by my calculations and previously accepted NRC calculations. Both would devastate Indian Point, especially considering there are no existing procedures in place.
- In the July 15 Petition Review Board meeting, the NRC Staff clearly stated that the NRC had not considered the San Bruno event and other major explosions that took hours to isolate.
- A gas line operated by the same gas line operator, Spectra, failed in May 2015. The rupture was not detected in 3 minutes but continued for over 24 hours and was isolated only after a fisherman, whose boat on the Arkansas River had been damaged by debris from the blast, reported the damage and Spectra was subsequently notified and isolated the rupture.
- Entergy is presently conducting a seismic study, mandated by the NRC, on the potential impact of an earthquake on Indian Point. During a telephone conversation with the NRC on September 9, 2015, the NRC stated that a rupture

in the proposed gas line was considered; however the 63 year old, cast iron line would not be considered in the seismic study.

- As admitted⁶ by Mr. Burritt, IPEC is presently operating in an unanalyzed condition and is in violation of NRC Regulations and Technical Specifications as required by NRC Regulations. This event must be reported and the plant immediately brought to a safe condition.
- I presented the Chairman with a copy of the NRC's analysis as an example of the use of material false information and the total and complete inadequacy of this calculation that was used to evaluate the risk that could impact 20 million persons and that could result in more than \$2 trillion in social and economic damage to the local area which includes the financial capital of the world.
- David Lochbaum wrote a letter on August 31, 2015 to all of the Commissioners suggesting the ACRS possibly evaluate the technical and generic implications of co-locating gas lines and nuclear plants. While the ACRS does have extremely qualified personnel, they do not possess the specific needed expertise with gas line dynamics. Should the Commission decide to involve the ACRS, it is requested that this process also be totally transparent and that representatives of the impacted public and gas line forensic experts be directly involved with all aspects of the study.
- The IAEA, in a study of pipeline risks stated that most states (countries) do not locate gas lined within 5 to 10 km of nuclear plants.
- I did not discuss the very obvious potential for terrorism.

Meeting with NRC Commissioner Baran⁷ 3 PM September 10, 2015

- The content of the information I provided to Commissioner Baran was very similar to the items discussed with the Chairman.
- Following the meeting with the Commissioner, we had an informal discussion with Amy Powell - Chief of Staff and Robert Krsek - Technical Assistant for Reactors. This discussion involved some of the more technical issues and consequences of a gas line explosion at IPEC.

Meeting with Ben Beasley and Doug Pickett 9 AM September 11, 2015

- Both Mr. Pickett and Beasley admitted to me that the issues raised in my 2.206 petition have not been fully investigated and are still open but that the petition is closed.⁸ Mr. Beasley and Mr. Pickett both agreed to send me a formal letter explaining that while the petition is "closed" there are still many items that remain unaddressed. These items include the allegation of material false statements and the 39 formal questions submitted to the NRC on July 27, 2015.

Meeting with NRC Commissioner Ostendorff⁹ 9:30 AM September 11, 2015

⁶ My personal interpretation of the conversation

⁷ Attendees listed below and also included James Riccio

⁸ Somewhat akin to "The accused is guilty and now we will find the evidence to support our conviction."

⁹ Attendees listed below and also included James Riccio

- This meeting was very similar in content to the meeting with Commissioner Baran with the addition of the exchange of some ole submarine “sea stories”.
- The Commissioner and I discussed that the NRC Staff misinformed the Commission that the blast radius would not be significantly increased should the line break continue for 60 minutes versus the 3 minutes falsely stated by Entergy. I reviewed with the Commissioner the actual calculation used by the NRC to calculate the blast radius and he did not disagree with me that the blast radius would increase from about 1100 feet to about 3000 feet using Entergy’s/NRC’s numbers. My calculations using a flow rate of 376,000 kg/minute of methane converted to TNT (obtained under FOIA) produce a blast radius of more than 6000 feet, which would encompass the entire IPEC site.

Requested and/or confirmed actions

1. The Commission must immediately determine if IPEC is operating in an unanalyzed condition and if plant procedures include the ability to respond to a gas line rupture of the existing lines.
2. The Commission must order Entergy to conduct an independent and transparent risk analysis in accordance with the guidance 29 CFR 1910 and include persons with actual gas line rupture experience and at least two persons representing the interest of the local population.
3. The Office of Investigation must immediately commence an investigation of material false statements made in Entergy’s 10 CFR 50.59 analysis. These statements are material in that the NRC safety analysis was based upon these false statements and approval provided to FERC was based on these false statements.
4. The Commission should direct the NRC Staff to include both the new and existing gas lines in the ongoing seismic study for IPEC.
5. The Commission should direct the Staff to review the 10 CFR 2.206 process and how a petition can be “closed” while none of the identified issues have been investigated or even addressed. There are 39 questions that remain open as well as very strong allegations of material false statements.
6. Ms. Jarriel will review my June 13, 2015 allegation and respond to each identified concern with all supporting documentation and analysis.
7. The Office of the Inspector General is requested to address the following issues:
 - a. Why the petition was “closed” when the identified issues were never addressed? Was this due to pressure to provide approval¹⁰ to Spectra to commence construction of the new gas line?
 - b. Did the NRC Staff comply with MD 8.11 for petition rejection?
 - c. How could the NRC allow close-out of the petition when none of the issues were addressed?
 - d. Why was the SRI at IPEC directed not to confirm in writing that the fuel oil tanks were empty as verbally stated by this SRI? Why did the Office of Public Affairs (OPA) attempt to mislead me with a statement the tanks contained no flammable materials?

¹⁰ FERC provided permission to Spectra to commence construction on August 31, 2015

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- e. Why did the Staff mislead the Commission and convey that the blast radius increase was minimal should the line isolation continue for one hour? As explained to Commissioner Ostendorff using the NRC's own approved RG 1.91 equation, the blast radius increases by a factor of 2.7 or about 2700 feet.
 - f. Why did the NRC Staff use the EPA and DOT ALOHA computer code when it is specifically prohibited for use in this type of postulated accident?
8. Mr. Pruitt will issue me a letter within a week stating that although the petition is "closed" there are still many open issues yet to be addressed including the 39 questions and a well-supported contention that Entergy provided material false statements.
9. The Office of Investigations is requested to immediately commence an investigation related to the alleged material false statements made by Entergy in its submittal dated August 14, 2014, with details provided in my petition dated October 15, 2014.

Meeting attendees with Chairman Burns:

Jason Zorn-Chief of Staff
Eugene Dacus-Director, Office of Congressional Affairs
Tracey Stokes-Legal Counsel
Nan Gilles-Technical Assistant for Reactors
James Riccio - Greenpeace

Meeting attendees with Commissioner Baran:

Amy Powell-Chief of Staff
Robert Krsek-Technical Assistant for Reactors
James Riccio Greenpeace

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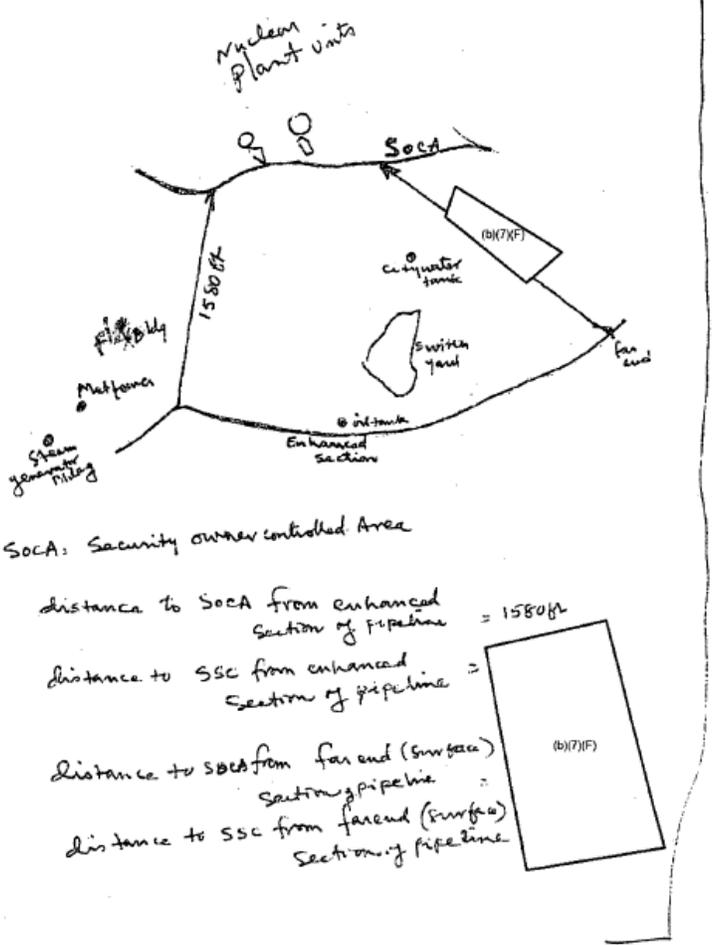


Figure 1
Page from NRC's calculation verifying the safety of Indian Point

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Original sent June 13, 2015

Allegation for Indian Point

I have received communication from an individual that a failure of the existing gas lines traversing the protected area of Indian Point is or should be considered a Design Basis Event (DBE)

This conclusion is based upon Entergy's risk analysis submitted to the NRC on August 21, 2014. This analysis concluded that the new proposed 42 inch natural gas lines would be considered a DBE, therefore the failure of existing lines located even closer to vital structures logically would also be considered a DBE.

According to the NRC's own analysis the probability of a gas line failure the "accident rate of pipes greater than 20 inches diameter is about 5×10^{-4} /mile-yr." This assumption is based on new piping and 60-year-old piping would be expected to have a much higher rate of failure. This is an unacceptably probability.

The present FSAR states this event "is not feasible." Both of these statements can't be accurate.

The specific allegation is as follows:

- 1 Both plants are presently operating in an unanalyzed condition. No analysis exists other than a fictitious statement in the FSAR that this event is not "feasible."
- 2 Entergy's analysis states: ". . . conclude that the rupture of the gas pipeline must be considered as a design basis event under NRC guidance."
- 3 Operations personnel have not been properly trained to deal with an event such as fire or explosion of these gas lines.
- 4 Some operations personnel are not even aware of the existence of these ancient active gas transmission lines.
- 5 The fire brigade, including offsite responders, has not been trained to respond to such an event.
- 6 There are no procedures available to counter this high probability event.
- 7 No risk analysis has been conducted for this event.
- 8 There is no documentation or requirements verifying the integrity of these gas transmission lines.
- 9 There are no automatic isolation valves or any isolation valves under the control of

I expect a prompt response to this concern. You are free to share this allegation with the licensee as 10 CFR 50.72 requires the licensee to submit an eight hour report for operating in an unanalyzed condition.

I am free to discuss this at any time with the NRC staff.



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Figure 2