STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Notice of Probable Violations by Vermont Gas Systems, Inc., for certain aspects of the constructions of the Addison Natural Gas Project	))))	Case No. 18-0395-PET

MOTION TO INTERVENE OF LAWRENCE SHELTON, RACHEL SMOLKER, KRISTIN LYONS, JANE PALMER AND NATHAN PALMER, AND MOTION TO CONSOLIDATE

Lawrence Shelton, Rachel Smolker, Ph.D., Kristin Lyons, Jane Palmer and Nathan Palmer move to intervene pursuant to PUC Rule 2.209(A) and (B).

Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer also move pursuant to PUC Rule 2.211 and V.R.C.P. 42 that this matter and Case No. 17-3550-Inv be consolidated or that discovery and trial occur jointly.

1. THE FACTS

a. The Intervenors

Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer are intervenors in Case No. 17-3550-Inv.

Ms. Lyons, Ms. Palmer and Mr. Palmer were parties in Docket No. 7970. The Addison Natural Gas Pipeline runs either over or adjacent to the land on which they live. Ms. Palmer and Mrs. Palmer reside less than 300 feet of the pipeline, and therefore are within the zone of catastrophic danger in the event of a pipeline leak and explosion. Docket No. 7970, Finding of Fact 120. ("The impact radius, or the area subject to catastrophic harm to both property and person,

caused by a catastrophic breach of the transmission pipeline as designed by VGS is approximately 320 feet.")

Mr. Shelton and Dr. Smolker do not reside next to the pipeline. However, Dr. Smolker and Mr. Shelton routinely travel over or alongside the portions of the VELCO ROW and through the residential parts of Hinesburg and St. George, where the pipeline has been buried. Dr. Smolker's and Mr. Shelton's personal safety and the safety of their families, every day of their lives, are directly affected by whether Vermont Gas Systems, Inc., has complied with the safety commitments the company made to the Commission. They were two of the five persons on whose behalf counsel filed the June 23, 2017 and July 14, 2017 pleadings in Docket 7970. They were, along with Ms. Lyons, Ms. Palmer and Mr. Palmer, subsequently granted intervenor status in Case No. 17-3550-INV.

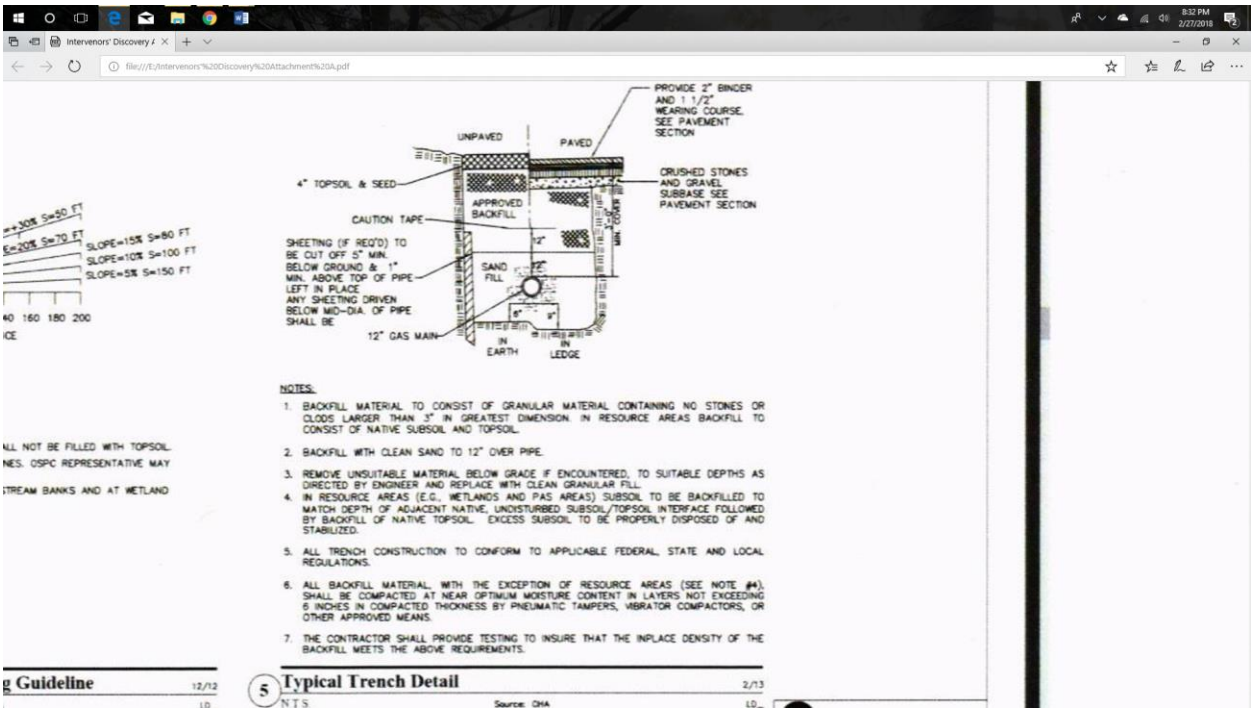
Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer enjoy and benefit from the streams and wetlands in Chittenden and Addison counties. Mr. Shelton is the member of the public who first learned of and photographed the "sink in swamp" method being employed in the Red Maple Green Ash wetlands in New Haven, in September of 2016 (nine months before the company filed a nonsubstantial change request). Each has an interest in preserving these resources.

b. <u>Placement of Pipeline Directly on Trench Bottom in 2014, 2015 and 2016</u>

The Board's December 23, 2013 Certificate of Public Good stated, in paragraph 2:

> 2. Construction of the proposed Project shall be in accordance with plans and evidence as submitted in this proceeding. Any material deviation from these plans or a substantial change to the Project must be approved by the Board. Failure to obtain advance approval from the Board for a material deviation from the approved plans or a substantial change to the Project may result in the assessment of a penalty pursuant to 30 V.S.A. §§ 30 and 247.

The company submitted to the Commission prior to issuance of the CPG the following trench construction detail plan:



The diagram shows the pipe entirely surrounded by "SAND FILL." It shows a minimum depth of sand fill of 6" on earth trench bottom and 9" on ledge trench bottom. It shows 12" of SAND FILL above the pipe. Above the SAND FILL its shows "APPROVED BACKFILL."

Finding 264 of the Commission's order stated that the pipeline would be constructed under a quality assurance plan that addresses "pipe inspection… applying and testing field-applied coating, lowering of the pipeline into the ditch, *padding* and backfilling…" (Emphasis added.) Padding refers to the 6 to 9-inches of sand fill upon which the pipeline was to be laid.

The purposes of requiring clean sand under the pipe are not just to avoid abrading the pipe coating and to provide support to withstand loading. A third, critically important purpose, is to prevent corrosion. The varying oxygen and moisture of native soils can accelerate corrosion, and

nongranular objects can "shield" the pipeline and thereby render CP ineffective. The company did not understand this until the Department explained this to the company in June of 2016. David Berger email to John McCauley June 20, 2016; John St. Hilaire email to GC Morris, July 1, 2016.

No reasonable person would read the plans submitted, CPG paragraph #2, and Finding 264 as contemplating that the company would delegate to its contractors the discretion to decide, on their own, without making any record of the basis for each decision, the decisions whether or not to use *any* padding beneath the pipeline, and decisions as to the *nature and quality* of the padding if any is used. But that is what occurred – with the knowledge of the Department.

In Case No. 17-3550-INV, the company's responses to Intervenors' discovery requests have revealed that the company changed these plans after submitting them to the Commission. In **2014**, the specifications explicitly authorized contractors to lay the coated pipe directly on trench bottom – that is, without sand fill or any other fill between the pipe and the bottom of the trench, and also without any sand bags or other means of intermittent pipe support to keep the pipe off of the trench bottom**.** No documentation was required of why that decision was being made. (See VGS Answers to Discovery Requests 1-85 through 1-96, and Discovery Requests Attachments D and E)[1].

Discovery responses also showed that in **2014** pipe had, in fact, been laid directly on the bottom of the trench. No fill of any kind -- much less sand – and no sandbags or other means of keeping the pipe off of trench bottom was placed under the pipe in numerous locations in 2014. The company lacks a complete record of where this occurred. Discovery Attachment 84.3a., the December 21, 2015 QA Report, states "There was concern as to whether proper backfill was used

[1] All documents cited are those attached to Intervenors' Motion to Broaden the Scope of Investigation dated February 28, 2018, unless otherwise noted.

in all areas where construction occurred in 2014. We are uncertain of specific locations were improper backfill may have been used."

These documents, along with responses to Public Records Act requests, also showed that in **2014** the Department learned that the specifications had been rewritten to delete the requirement that 6 to 9 inches of sand fill be placed beneath the pipeline *and* learned that unknown lengths of pipeline had been laid directly on trench bottom. The Department, however, did not seek any sanctions, penalty or investigation for changing the plans or for laying the pipe directly on trench bottom.

The company's plans were revised again on **April 29, 2015**, to allow use of *either* pipe supports *or* a continuous bed of 6 to 9 inches of "select backfill." No sand or other select backfill was required between pipe supports. Sand was not required in the absence of supports – any "select backfill" could be used, without any documentation of what it consisted of. The plans left it to each contractor's discretion to select the "select backfill" without requiring any record of what was used. DPS 2/16/18 letter p.2. Again, no notice was provided to the Commission nor any request for a nonsubstantial change ruling.

On **August 31, 2015**, according to the Department, the company installed 3,949 of pipe that had *neither* pipe supports *nor* 6 to 9 inches of "select backfill." DPS 2/16/18 letter p.2. Actually, the distance was at least 4,200 feet. Adam Gero Memorandum "Addison Natural Gas Project Pipe Laid on Trench Bottom," June 6, 2017. In other words, after the CPG plans were changed to allow use of "select backfill" instead of sand, and to allow use of intermittent sandbags or other support instead of select continuous backfill or sand, the company's contractors constructed 4,200 feet of pipeline directly on trench bottom without select backfill or support.

The Department, again, sought no penalties or investigation.

In **May of 2016**, the company amended its plans again, to require use of "select backfill" *between* sandbags or other pipe supports where the pipe was not being laid directly on continuous select backfill. The 2016 version of the plans did not require that the pipe be laid on continuous select backfill of any kind, did not require use of sand as the select backfill, and did not require contractors make any record of the nature of the select backfill they were using in lieu of sand.

The discovery and Public Records Act documents reveal that on **June 16, 2016,** Vermont's inspector found ongoing construction in which pipe again was being laid directly on trench bottom. "At kickoff Williston station observed pipe laid directly on trench bottom…" And on **July 8, 2016**, Mr. McCauley wrote: "Observing backfilling at Williston substation. Once again noted pipe directly on bottom of ditch." The company argued to Mr. McCauley that this was entirely proper. (See "McCauley Excerpts" filed in Docket 7-3550-INV). The documents do not reveal the length of pipeline that was laid directly on trench bottom; it appears that the Department remains unaware of whether hundreds or thousands of feet of pipeline were laid directly on trench bottom I 2016. Again, according to these documents, the Department did not seek any sanctions, penalty or investigation.

Until June of 2016, the company constructed the pipeline in ignorance of the fact that the purpose of sand padding is not just to protect against abrasion but to protect against the accelerated *corrosion* that occurs when the pipeline lies on certain soils, and therefore (undocumented) inspection for rocks provides no solace. David Berger email to John McCauley June 20, 2016; John St. Hilaire email to GC Morris, July 1, 2016. Clay soils, in particular, accelerate pipeline corrosion. The pipeline was laid down directly on trench bottom on clay soils, before and after

the company learned why proper fill beneath a pipeline is needed to prevent corrosion[2]. As the Department's engineer wrote in an email to PHMSA:

> Padding/pipe support appear to be out of design specification in several areas. The primary concern is the possibility these conditions may contribute to the establishment of a corrosion cell(s) (see attached Bushman Associates white paper). In two areas, a 3949 foot long section and a 360 foot long section, the pipe appears to have been laid directly on the trench bottom of in-situ clay. In four areas, a 237 foot long section, a 136 foot long section, a 93 foot long section, and a 150 foot long section, records indicate the pipe was laid on sand berms and several sections were installed in swampy areas without structured pipe support.

(8/7/17 email, attached).

Obviously, in supervising its contractors and the entire construction process prior to June of 2016, the company took no actions to ensure that the "select fill" it authorized to be used in lieu of sand did not include clay soils. The company itself did not understand this is one of the purposes of sand padding. If the native soils that were excavated to dig the trench were clay soils, then clay soils rather than sand were used as "select backfill" (so long as they were inspected for rocks). Most of the pipeline was constructed using a watered-down "select fill" specification that did not require sand, and that allowed use of clay soils as fill.

If the plans submitted to the Commission had been adhered to, the Commission would now know that no rocks, and no clay soils, were used to create the padding on which the pipeline rests. But they weren't.

In **July 1, 2016,** the company agreed not to lay pipe without use of select fill beneath it. John St. Hilaire email to GC Morris, July 1, 2016

[2] Addison County is well-known for its clay soils. The Red Maple Green Ash wetlands in New Haven appears to be dominated by clay soils known as "Livingstone" soils.

Nonetheless, according to these documents, in **September of 2016**, the company yet again laid pipe without sand or any other select fill beneath it, in wetlands in New Haven and Monkton. The Department's engineer, Mr. Morris, described this as a repeat of the earlier violations. G.C. Morris email to David Berger 9/8/17. Mr. Morris' email makes clear that the failure to use sand or other select fill beneath the pipe was not restricted to the Red Maple/Green Ash swamp in New Haven – he said this had occurred "several" times, and in an August 7, 2017 email he wrote this had occurred in both Monkton and New Haven. G.C. Morris email to James Porter, August 7, 2017.

While the company, VELCO and the Department reached agreement that 3 feet of burial in the New Haven Red Maple Green Ash swamp provided sufficient protection against *loading*, the **September 2016** agreement did not address the fact that the pipeline was laid down directly on clay wetland soils without the sand padding required by the CPG plans and that are necessary to protect against corrosion. Nor did these parties address the agreement reached in July that henceforth the pipeline would always be constructed with select fill beneath it.

Again, the Department sought no sanctions, penalty or investigation.

On **June 23, 2017**, in the Docket No 7970 proceedings that led to the opening of Case No. 17-3550-INV, the Department submitted a letter stating that the company's departure from the four feet of burial set forth in the plans it had submitted to the Commission, contrary to paragraph #2 of the CPG, was grounds for opening an investigation of the company by the Commission because the CPG required consistency with the plans that had been submitted.

On **February 8, 2018,** Intervenors' counsel informed the company and the Department at discovery conference that Intervenors would be filing a motion to expand the scope of the pending

investigation in Case No. 17-3550-INV to encompass additional violations of the C.P. G. revealed in the discovery.

On **February 14, 2018**, at a status conference in Case No. 17-3550-INV, intervenors counsel again stated he would be filing a motion to broaden the scope of the investigation. He stated the motion would be filed by February 28, 2018. (See the transcript of that hearing, at which counsel stated to hearing officer he had already informed the other parties that the motion was imminent.)

On **February 16, 2018**, the Department filed a letter initiating an enforcement proceeding against the company for laying pipe directly on trench bottom. The petition seeks a $25,000 fine and heightened testing of the pipeline. This enforcement proceeding was commenced nearly four years after the Department first learned of the violations, and six business days after Intervenors disclosed that, based on the discovery they had received, they would be filing a motion to broaden the scope of the investigation in Case No. 17-3550-INV.

The February 16, 2018, enforcement petition alleges that laying pipe directly on trench bottom violated the CPG only because the company departed from its **2015** and **2016** written plans. The Department's position is that departure from the 2015 and 2016 plans violates PHMSA regulations (which require adherence to written plans), and the 2013 CPG was conditioned on VGS's meeting PHMSA regulations.

The petition, unlike the Department's June 23, 2017 filing in Docket No. 7970, does not allege that the company violated paragraph #2 of the CPG by departing from the plans submitted to the Commission. The petition does not seek any penalty or sanction for departing from the plans submitted to the PUC, and referenced in paragraph #2 of the CPG.

On the contrary, the Department's petition effectively deletes paragraph #2 from the CPG, in five respects:

1) The Department ignores the company's **2014** *revision* of the plans the company had submitted in order to obtain the CPG, which had stated that the pipeline would be laid on 6 to 9 inches of sand. The 2014 specifications authorized the company's contractors to decide on an *ad hoc* basis to lay the pipe directly on trench bottom, without any sand, without any select backfill and without any sandbags. Because the Department's petition seeks final resolution of these issues, the Department's position effectively excuses the company from this violation.

2) The Department ignores the **2014** *violations of the CPG plans* and *does not seek any identification or correction of the unknown distances of pipeline installed on trench bottom* without sand, without select backfill and without sandbags. And again, because the Department's petition seeks final resolution of these issues, the Department's position effectively excuses the company from these violations as well.

3) The Department asks for penalties for deviating from the **2015** and **2016** versions of the company's contractor specifications, both of which substantially modified the plans submitted to the Commission. By asking for penalties based on these unilaterally watered-down specifications, the Department is rejecting paragraph #2 and the doctrine that a company that submits plans to the Commission in order to obtain a CPG will be held to those plans.

4) The Department ignores the **2015** *violations of the CPG plans* and *does not seek any correction of the 3,949 feet (actually, 4,200 feet) of installation on trench bottom.* The Department seeks a penalty and remedies for actions in 2015 which violated the watered-down version the company issued in May of 2015 -- not for violating the plans submitted in order to obtain the CPG.

5) The Department ignores the **2016** *violations of the CPG plans* and *does not seek any correction of the unknown distance of installation on trench bottom which occurred in June, July and September.* The Department seeks a penalty and remedies for actions in 2016 which violated the version the company issued in May of 2016 -- not for violating the plans submitted in order to obtain the CPG.

On **February 28, 2018**, Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer filed a motion in Case No. 17-3550-INV asking that the Commission broaden the scope of its investigation to address all of the issues above, including those which the Department has not

addressed, and many other issues. Each of the documents cited above are included as attachments to Intervenors' motion in Case No. 17-3550-INV.

Also on **February 28, 2018**, the company filed a response to the Department's letter. The company agrees to the $25,000 fine. It bases its defense of this small fine in substantial part upon the argument that "the Department and VGS had an ongoing dialogue about many of these issues at the time of construction," that VGS "worked closely" with the Department at the time, and that VGS was "transparent" with the Department at all times.

The company's response does *not*: *i)* address why it unilaterally rewrote the plans it had submitted to the Commission; *ii)* disclose the locations or distances that it constructed the pipeline on trench bottom in 2014, *iii)* acknowledge that it constructed at least 4,200 feet of pipeline in 2015 on trench bottom; *iv)* disclose the locations or the distances of pipeline which were laid directly on trench bottom in 2016; *v)* disclose the soil types in each location where pipeline was laid directly on trench bottom, or whether, if the soil consisted of clay, soils were imported from off-site so that the pipeline padding would not consist of clay soils; or *vi)* explain why, after learning in June of 2016 that pipelines should not be laid directly on trench bottoms because, of the increased risk of corrosion, and committing in writing to cease placing pipeline on trench bottom, it did so again in September in Monkton and New Haven -- other than saying this was "appropriate" because it was a wetland. It was, in fact, a clay-soil wetland, *i.e.*, what the Department's engineer, Mr. Morris, calls a "corrosion cell."[3]

[3] While some of the pipeline that was installed using the "sink in swamp" method was coated with concrete for extra protection, in other locations where the "sink in swamp" method was used the pipeline did not have concrete coating, according to witnesses. The company has not documented where it used this method in Monkton and New Haven and compared those locations with data showing which sections were coated with concrete.

The company attaches an unsworn report from a pipeline consultant in Texas, Mark Hereth, stating that he disagrees that placing the pipeline directly on trench bottom increases the risk of corrosion. His report does not state he is trained as an engineer, and the records of the Texas Board of Professional Engineers (found at Engineers.Texas.gov/) do not include him on their list of licensed engineers. His report does not indicate whether he is aware that the pipeline was placed directly on clay soils, or that he has any experience with placement of pipelines on heavily clay soils such as those found in Addison County, or that he has read the Commission's order or the plans submitted to the Commission, referenced in CPG paragraph #2.

Mr. Hereth cites to work he had performed for the INGAA Foundation. The INGAA Foundation, in October 2015 released a report entitled "Criteria for Pipelines Co-Existing with Electric Power Lines," which is attached. It can be found at http://www.ingaa.org/File.aspx?id=24732. The report (p.17) finds that coated steel gas pipelines, with Cathodic Protection, can suffer "enhanced corrosion" when co-located with high voltage lines.

The report (page 4) lists as a "High" severity concern any pipe that is located within 100 feet of a high voltage line and a "Medium" severity concern any pipeline within 500 feet. It lists as a separate "Very High" severity concern colocation of a pipeline in soils with low resistivity (less than 2500 ohms). It lists as a separate "Med-High" severity concern any pipeline that is near an electric line between 250 and 500 volts, as "Medium" if near an electric line between 100 and 250 volts, and as a "High" severity concern any pipeline that is co-located more than 5,000 feet along a high voltage line of any size.

The ANGP is co-located with the VELCO line within 500 feet in many locations, within 100 feet at some locations, lies in some very low resistivity soils such as the clay soils in Addison County[4], and is co-located for more than 5,000 feet in some locations.

At the Red Maple Green Ash wetlands where the "sink in swamp" method was used without any sand padding, one "Very High" severity concern (low resistivity soils), two "High" severity concerns (5,000 feet of co-location and less than or equal to 100-foot separation distance), and one "Medium" severity concern (a 175-volt line) are triggered.

Mr. Hereth does not mention the report issued by the INGAA Foundation or the concerns it raises.

c. <u>Trench Breakers to Protect Streams and Wetlands</u>

The Department's February 16, 2018 petition asks for penalties to be imposed for violating the company's written plans and specifications, which required trench breakers at designated locations.

As pointed out in Intervenor's motion to broaden the scope of Case No 17-3550-INV, plans were filed with the Commission in February and June of 2013 showing that bentonite trench breakers would be located at all wetland boundaries. Findings 31-33 determined that trench breakers filled with bentonite would be placed at the limits of each wetland. These "act as a plug in the trench to inhibit the migration of water from wetland areas." Finding 362 found there would be no permanent alterations to any waterways or "the ability of the land to hold water." If a plug

[4] Clay soils have extremely low resistivity, reported generally at 50 ohms. Even "compacted clay" has a very low resistivity, 100 to 200 ohms. "The Engineering Toolbox," found at https://www.engineeringtoolbox.com/soil-resistivity-d_1865.html.

is missing, then the pipeline trench may drain the water from a wetland. This is a potentially irreversible harm.

The discovery provided to Intervenors and to the Department demonstrates that the company neglected to install bentonite plugs at the edge of 13 wetlands and/or streams. The Department's NOPV treats this as possible cause of stream erosion. That is an important concern, but the unplugging of water from an existing wetland also poses a serious, potentially permanent harm.

Neither the Department's letter nor the company's response identifies the affected streams and wetlands. Neither submission includes any assessment of the damage that may have been, or may result from, the failure to install trench breakers.

d. Pipe Coating

The Department's February 16, 2018 seeks remedial action for pipe coating – but does not does not mention the extraordinary importance of quality assurance during construction to protect pipe coatings, does not acknowledge the extensively documented history of uninspected pipe coating repairs by unidentified employees of contractors – and does not allege there has been any CPG violation, PHMSA violation or public safety risk. The company's response does not object to the Department's position.

Intervenor's February 28 filing in Case No 17-3550-INV addressed pipe coatings at length. The filing explained that damaged or defective coatings are the single most common pipeline construction problem, according to the federal agency in charge of pipeline safety, the Pipeline and Hazardous Material Safety Administration, "PHMSA." PHMSA Pipeline Construction; FAQs, Question 2[5].

[5] https://primis.phmsa.dot.gov/construction/faqs.html.

Good coatings are "necessary" as one of two "layers of protection" against corrosion, according to PHMSA. The "cathodic protection" or "CP" system by itself does not suffice, because "the CP system is not always enough. There may be issues that reduce the effectiveness of CP, such as shielding. There may be problems with the CP system that go undetected for some period." And, critically, just a few months of corrosion can doom a pipeline: "Experience has shown that corrosion can do significant damage to a pipeline if CP is not adequate, even for a period of a few months." Therefore, it is "necessary to assure that pipeline coating is good to provide continued assurance of protection against corrosion even if CP problems occur." PHMSA Pipeline Construction; FAQs, Question 4.

Later inspections, after the pipeline is buried, cannot substitute for quality assurance during construction. PHMSA Pipeline Construction; FAQs, Questions 2 and 7

A problem commonly found by PHMSA is "field-applied coatings have been identified as inadequate." PHMSA Pipeline Construction; FAQs, Question 12. "Unrepaired coating defects at lowering" is one of the typical problems found by PHMSA inspectors. PHMSA Pipeline Construction: Miscellaneous[6]. Poorly qualified construction personnel, poorly qualified inspectors, improper procedures, failure to follow procedures and lack of procedures are the most common problems that State pipeline inspectors have found. PHMSA Pipeline Construction; FAQs, Question 20.

Finding 120 of the Commission's order in Docket 7970 addressed the potentially horrendous impacts of pipeline failure: "The impact radius, or the area subject to catastrophic harm to both property and person, caused by a catastrophic breach of the transmission pipeline as designed by VGS is approximately 320 feet." After finding that property and persons could suffer

[6] https://primis.phmsa.dot.gov/construction/issuemiscellaneous.html

catastrophic harm within 320 feet of the pipeline, the Commission decided to approve of the project without a setback requirement of 320 feet. It did so for two reasons.

One reason was that a setback of that distance is not feasible. (Finding 277).

The second reason was the company's "demonstrated commitment" to safety. "Vermont Gas has provided ample evidence that its design for the Project meets or exceeds all applicable federal and state standards and that the Company will implement robust operational and monitoring controls." ("Discussion" following Finding 284).

Quality assurance was one of the principal standards and controls the Commission relied upon – and in particular, *quality assurance with regard to coatings*. Finding 264 of the Commission's order in Docket No. 7970 stated that the pipeline would be constructed under a quality assurance plan that addresses "pipe inspection… applying and testing field-applied coating, lowering of the pipeline into the ditch, padding and backfilling…" Finding 265 stated that the company "will have a quality assurance inspection and testing program for the pipe coating that will cover the surface quality of the bare pipe, surface cleanliness and chlorides, blast cleaning, application temperature control, adhesion, cathodic disbondment, moisture permeation, bending, coating thickness, holiday detection and repair."

The facts found in the company's documents reveal widespread, open violation of this commitment. Defective coatings were found on pipe and on the canusa sleeves that cover welds. Then it was discovered that the patch kits used to repair the pipeline themselves were defective, so canusa sleeves had to be placed over the patch kits as well – but some batches of the canusa sleeves themselves had defective coatings. All of this had to be repaired in the field by Over & Under and then Michels' employees.

Discovery response 1-114.1, consists of "Inspection Reports." The following entry (with slight variations) *appears on 45 different days in one year, 2014*:

> There are several coating crews now so I am unable to observe/report on all coating/sleeves. All reports turned in are a spot check status as I overlook 3 to 5 different crews depending on the day.

Coatings are essential to public safety. One inspector was covering 3 to 5 coating crews. He was performing only "spot checks." The inspector complained of inability to inspect on 45 different occasions.

The company's response to the Department when Department engineer Morris raised these concerns was to dismiss them as unnecessarily protective. Yes, there was only one inspector for three coating crews, the company wrote in its formal QA report (attached), but "There is no requirement, either contractual or statutory" to having a coating report for each coating application..." In other words, the company views its commitments as not including inspection of all coatings before the pipeline is buried.

Besides which, the company wrote, the lack of good coatings is not a safety problem. The company wrote that commissioning of the CP system "at the time of gas-up" and a "direct assessment survey" would provide any mitigation that might be needed. But PHMSA explains that both good coatings *and* CP are necessary. And a "direct assessment survey" does not include visual inspection. The only way to visually inspect exterior coatings is by inspecting them before the pipe is buried, or by excavating the pipe later.

Coatings also were damaged during HDD installation -- and were not repaired. The company wrote that the coatings did not need to be repaired because "The commissioning of the cathodic protection (CP) system and a direct assessment survey… will provide additional mitigation to address this concern."

Sixty-six canusa sleeves from batches that were found to be defective had been buried before the defect was discovered. Testing by the manufacturer showed that the coating failure was occurring but that it did not reach the inner-most coating. The 66 sleeves were left in the ground. Christopher LaForce, March 2, 2017, Report on Canusa Shrink Sleeve Peel Tests.

It turned out that the sleeves left in the ground (also known as wraps) were not adequate. An in-line investigation of another pipeline revealed "significant pipe degradation (resultant from the wrap)." The Department's engineer asked the Department's pipeline expert, Mr. Berger, for his advice. He responded that he possessed confidential information about canusa sleeve failure and could not answer the question. August 30, 2017 Morris/Berger emails.

Eight hundred feet of the ANGP also was buried with backfill that, according to "a variety" of witnesses, had "broken glass… chunks of metal and other household garbage/trash" mixed in with the backfill. These could compromise coatings. The company did not find and remove the glass, metal and other garbage during the two attempts it made to excavate the pipeline. The company stopped looking. Finding the glass, metal and garbage was unnecessary, the company stated, because the CP system would be placed into operation "at the gas-up of the pipeline" and because there would be a direct assessment survey. 10/1915 Corrective/Preventative Action Plan.

There is no record of how many times repaired but uninspected pipeline or sleeve was buried, but the inspectors' notes, the QA report, and Department documents reveal this was a common occurrence. An email from the Department's engineer to the Department's expert, Mr. Berger (attached to the 2/28/18 filing) refers to the problems that required repair on the pipes (not the sleeves over the welds) as occurring at "multiple locations" on the ANGP of an "unknown number." There is no usable record of where those locations are**.** Neither station number nor GPS data were created to record where repaired-but-uninspected pipe or sleeves have been buried.

The CP system that the company repeatedly stated would mitigate the failure to inspect coatings and the known coating defects in fact was not placed into commission "at time of gas-up." The pipeline was gassed up on April 12, 2017. In August of 2017, VGS expert Adam Gero wrote that "VGS is still working on the finalization of the CP." He wrote that he expected completion of the CP system in the "mid-fall" of 2017. There are no records which have been produced by the company which indicate the system has yet been commissioned.

3. THE LEGAL STANDARDS FOR INTERVENTION

Board Rule 2.209 governs intervention.

2.209 Intervention

(A) Intervention as of right. Upon timely application, a person shall be permitted to intervene in any proceeding (1) when a statute confers an unconditional right to intervene; (2) when a statute confers a conditional right to intervene and the condition or conditions are satisfied; or (3) when the applicant demonstrates a substantial interest which may be adversely affected by the outcome of the proceeding, where the proceeding affords the exclusive means by which the applicant can protect that interest and where the applicant's interest is not adequately represented by existing parties.

(B) Permissive intervention. Upon timely application, a person may, in the discretion of the Board, be permitted to intervene in any proceeding when the applicant demonstrates a substantial interest which may be affected by the outcome of the proceeding. In exercising its discretion in this paragraph, the Board shall consider (1) whether the applicant's interest will be adequately protected by other parties; (2) whether alternative means exist by which the applicant's interest can be protected; and (3) whether intervention will unduly delay the proceeding or prejudice the interests of existing parties or of the public.

(C) Conditions. Where a party has been granted intervention, the Board may restrict such party's participation to only those issues in which the party has demonstrated an interest, may require such party to join with other parties with respect to appearance by counsel, presentation of evidence or other matters, or may otherwise limit such party's participation, all as the interests of justice and economy of adjudication require.

The rule tracks Vermont Rule of Civil Procedure 24.

The Commission has ruled that in considering requests for permissive intervention status in an investigation, permission should be granted where party may be able to assist the Commission in determining the facts or the appropriate remedy. *Investigation pursuant to 30 V.S.A. § 30 and 209 concerning the construction and operation of a meteorological tower in Swanton, VT*, Docket No. 8561, Order issued June 9, 2016.

3. APPLICATION OF THE LAW TO THE FACTS

Each movant should be granted intervenor status under Rule 2.209(A)(3), because they have "demonstrate[d] a substantial interest which may be adversely affected by the outcome of the proceeding, where the proceeding affords the exclusive means by which the applicant can protect that interest and where the applicant's interest is not adequately represented by existing parties."

The effect of the Department's filing, seeking only a $25,000 penalty, and only increased testing, if granted, will be to foreclose Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer from going forward before the Commission to bring all of the relevant facts to the Commission's attention before penalties and remedies are decided. The penalty and remedies for placing the pipeline directly on trench bottom, for using fill other than sand, for failure to install trench breakers where required to protect streams and wetlands, and for failure to protect pipe coatings, may become *res judicata. In re Tariff Filing of Central Vermont Public Service Corp.*, 172 Vt. 14, 769 A.2d 668 (2001), n.1 (reserving for future decision whether *res judicata* estops the Commission or just the parties before the Commission). Even if not *res judicata* against the Commission, as a practical matter the Commission is unlikely to revisit the same issues, given the Commission's busy schedule and finite resources.

But for the statements by Intervenors in Case No. 17-3550-INV that they were about to file a motion to broaden the scope of the investigation, the Department would not have filed the Notice of Probable Violation with regard to burial on trench bottom and burial of the pipeline with uninspected repairs of damaged coatings. The Department has known since 2015 that the company had been laying pipe directly on trench bottom and had been burying repaired but uninspected coatings and damaged but unrepaired coatings (at HDD sites). The discovery responses Intervenors had obtained laid out these facts, so the Department knew Intervenors had become aware of these issues and were about to raise them. The filing does not reveal any new evidence that came to the Department's attention in early 2018 --- other than the statements that Intervenors were about to act on the discovery.

The moving parties have a substantial interest which will be adversely affected by the outcome of this proceeding – their safety and the safety of their family members.

This proceeding will become the exclusive means by which they can protect their interests if *res judicata* will apply, and as a practical matter it is likely to become the exclusive means by which they can protect their interests even if *res judicata* does not apply.

The Department is not adequately representing the interests of the moving parties. The Department does not know how many miles of the pipeline were placed on trench bottom or on padding that was neither sand nor free of clay. The Department's filing seeks only a $25,000 penalty and more frequent testing, but no excavation of the pipeline to install sand as required by the plans submitted to the Commission, nor disclosure of the nature of the fill that was used in lieu of sand, nor excavation to install the select fill needed to satisfy the company's own watered-down standards, nor inspection of the damaged coatings that either were anonymously patched but never inspected or not even patched (where HDD was used). If approved, this resolution would harm

each Plaintiff by exposing them to increased risk of pipeline failure. Mr and Mrs. Palmer live less than 300 feet from the pipeline, in the area the Commission found would be at risk of catastrophic harm. If approved, this resolution also would render much of Intervenors' February 28th filing moot.

The inadequacy of representation is also shown by the request for a small penalty and limited remediation based on severely inadequate information. In considering whether or not to impose a penalty under 30 V.S.A. § 30 and in considering the size of a penalty, the Commission considers "the extent that the violation harmed or might have harmed the public health, safety, or welfare, the environment, the reliability of utility service, or the other interests of utility customers." Similarly, one factor that must be considered in assessing penalties under Commission Rule 6.104(I) and 30 V.S.A. § 2816 is "the gravity of the violation."

The Department and the company have not disclosed information that is necessary to appreciate the gravity of each violation. The filings made by the Department and the company do not address:

i) the locations and lengths of pipeline which were laid directly on trench bottom;

ii) the locations and lengths of pipeline which were laid on fill other than sand;

iii) whether the fill that was used in lieu of sand included clay soils where the native soils were clay, or whether non-clay soils were imported to use as select fill;

iv) the identities and present status of each stream and wetland that was supposed to be protected by bentonite trench breakers but was not;

v) the locations and lengths of pipeline that were buried after coatings were repaired but not inspected;

vi) the locations of HDD pipeline with unrepaired coatings;

vii) the soil types in each location where pipeline was laid directly on trench bottom, or was laid on fill that lacked rocks but may have included clay soils, or that had unrepaired or uninspected repairs to damaged coatings.

Without this information, the need for and feasibility of remediation are speculative, and the gravity of the harm cannot be weighed. For example, the record does not disclose if pipe was laid on trench bottom or there are damaged coatings within 320 feet of a residence, or under a road, or within or adjacent to the VELCO right-of-way, or if one wetland, or two, or more, have been harmed, and if so, whether the harm is irreparable.

The rule and sections 30 and 2816 also require consideration of the company's good faith and whether "the respondent knew or had reason to know the violation existed, and whether the violation was intentional." There is compelling evidence of repeated, deliberate or at least reckless disregard for the commitments the company made to the Commission. If the Commission, after an evidentiary hearing, determines that there was repeated, deliberate or reckless disregard, a $25,000 penalty would eviscerate the public's faith in the effectiveness of regulatory oversight. Intervenors seek that hearing.

Section 30 also calls for consideration of the economic benefit the company or its contractors anticipated or could have anticipated by the violations. The Department and the company have submitted no evidence addressing this factor, and yet this factor appears to have been the motivation behind all of the violations. The company or its contractors cut corners to save money. Each truckload of sand that was not purchased off-site, delivered by truck, stockpiled, transferred into the trench, graded and then measured, before the pipeline was laid down, saved the contractor or the company the cost of the purchase and of the labor. From Colchester to

Middlebury, undoubtedly millions of dollars of expenditure were avoided. Each foot of pipeline that was installed without any even select fill (not sand) beneath it similarly saved the contractor or the company substantial sums. To impose a penalty without evidence of this factor would risk transforming the penalty into a small but worthwhile cost of doing business. A CPG violation that saves the company a million dollars must be met by a fine that surpasses a million dollars if the penalty is to deter future misconduct.

Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer also meet the standards of Rule 2.209(B), governing intervention by permission. They have articulated a "substantial interest" which may be affected by the outcome of these proceedings – their personal safety and that of their families. The proceedings afford "the exclusive means" by which they can protect that interest, because these proceedings either will become *res judicata* or as a practical matter will foreclose revisiting these issues. The Department does not adequately protect their interests. They will not unduly delay the proceedings, but they will seek to ensure that the statutory factors are addressed. They will assist the Commission in determining the facts or the appropriate remedy. *Investigation pursuant to 30 V.S.A. § 30 and 209 concerning the construction and operation of a meteorological tower in Swanton, VT*, Docket No. 8561, Order issued June 9, 2016.

CONCLUSION

Mr. Shelton, Dr. Smolker, Ms. Lyons, Ms. Palmer and Mr. Palmer should be granted intervenor status.

This matter then should be consolidated, or joined, with Case No. 17-3550-INV.

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