Exhibit VGS-AG-139

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 17-3550-INV

Investigation pursuant to 30 V.S.A. §§ 30 and 209 regarding the alleged failure of Vermont Gas Systems, Inc. to comply with the certificate of public good in Docket 7970 by burying the pipeline at less than required depth in New Haven, Vermont	

Case No. 18-0395-PET

Notice of Probable Violations of Vermont Gas Systems, Inc. for certain aspects of the construction of the Addison natural gas pipeline	

VERMONT GAS SYSTEMS, INC.'S COMPLIANCE FILING REGARDING PROPOSED AMENDMENTS TO THE DOCKET 7970 CERTIFICATE OF PUBLIC GOOD

Vermont Gas Systems, Inc. ("VGS," "Vermont Gas," or the "Company") submits this compliance filing in accordance with the Vermont Public Utility Commission's ("Commission") Final Order Approving Proposal For Decision, issued April 6, 2023 (the "Final Order").

Introduction

This compliance filing is organized as follows:

First, in the Background section, we summarize the procedural posture and compliance requirements of the Commission's Final Order.

Second, in the Discussion section, we detail five proposed amendments to the Docket 7970 Certificate of Public Good ("CPG"), including conditions and remedial actions recommended by Transco LLC/Vermont Electric Power Company, Inc. ("VELCO"), the Independent Investigation of William R. Byrd (the "Byrd Report"), and the Stipulated Remedial Action Compliance Plan submitted in Case No. 18-0395-PET (see Byrd Report, Attachment 67).

For each proposed CPG amendment and related condition or conditions, we also provide a discussion of why the amendment and proposed conditions will ensure that there are no undue adverse impacts going forward.

Finally, the proposed CPG amendments and conditions are set forth herein in italics. This proposed language is also provided as **Attachment A**.

Background

On October 3, 2022, the Hearing Officer in the above-captioned matters issued a Proposal for Decision recommending that the Commission find that VGS violated the 2013 Final Order and Certificate of Public Good ("CPG") in Docket 7970.

On April 6, 2023, the Commission issued a Final Order in this matter adopting the Hearing Officer's recommendation regarding the CPG violations, concluding that VGS violated the 2013 Final Order and CPG by:

(1) burying the pipeline using the sink-in-the-swamp burial method, which had not been discussed or approved in the 2013 Final Order and CPG;
(2) failing to achieve the required four-foot depth-of-cover standard at 18 locations in the Clay Plains Swamp;
(3) failing to conform to its own specifications regarding pipeline burial on the trench bottom and installation of trench breakers;
(4) failing to comply with the compaction requirements for the pipeline in its construction specifications;
(5) failing to ensure that staffing for the project included a Vermont-licensed professional engineer to serve as the responsible charge engineer for the Project; and
(6) failing to bury the pipeline seven feet below non-jurisdictional streams.

Final Order at 2. The Commission also concluded that the first five violations listed above were unapproved substantial changes to the Project made in violation of Commission Rule 5.408 and ordered that VGS submit a compliance filing proposing "amendments to its CPG that address the pipeline as actually constructed, addressing each of the five changes that [the Commission]

found to be violations of the 2013 Final Order and CPG and Commission Rule 5.408." Final Order at 22.

This filing complies with the Commission's Final Order by including "specific proposed conditions that address each of the five violations identified in [the Final Order] and account[ing] for the remedial actions recommended by the expert witnesses in this proceeding." Final Order at 22. In addition, with respect to the remedial actions recommended by the expert witnesses in this case, this filing "explain[s] why those actions will prevent any future instances of undue impacts under the criteria identified as relevant to potential significant impacts in the proposal for decision based on evidence already in the record of this case." *Id.* Finally, VGS identifies other recommendations made by Mr. Byrd that were not related to the above-listed CPG violations that VGS intends to continue to adhere to going forward.

Discussion

This section of VGS's compliance filing (1) proposes amendments to VGS's CPG that address the pipeline as actually constructed; (2) proposes conditions, where applicable, adopting the remedial actions recommended by expert witnesses; and (3) explains why these remedial actions will prevent any future instances of undue impacts based on the evidence in this case.

1. CPG Amendment #1: Trenching Techniques In The Clay Plains Swamp

VGS proposes that the Commission amend VGS's Docket 7970 CPG to address the trenching technique used in the Clay Plains Swamp as follows:

> *VGS is authorized to install the pipeline as constructed in the Clay Plains Swamp using what is known as the "sink-in-swamp" burial method, provided that it complies with all of the conditions herein.*

The above CPG amendment is sufficient to ensure there are no future undue adverse impacts relating to the trenching methods used in the Clay Plains Swamp for several reasons. First, the installation of the pipeline is complete. Accordingly, amending the CPG to reflect the pipeline "as constructed" addresses the Commission's determination that VGS should have sought advanced approval for this trenching technique.

Second, the amendment acknowledges that the method used was a deviation from the CPG, but did not have any undue adverse impacts on the environment, public health, or safety. This is evident in the Commission's supplemental findings in the Final Order, which conclude that (1) the burial method did not raise any significant concerns with regard to impacts on the natural environment and (2) the expert analysis of the construction process used in the Clay Plains Swamp has shown that use of the sink-in-the swamp burial method will not have an undue adverse impact on public health and safety. Final Order at 17 (citing Byrd Report at 70; ANR Letter from June 19, 2017).[1]

Finally, this CPG amendment is consistent with the expert testimony in this case. Mr. Byrd reviewed the trenching techniques in detail and concluded that the construction management team "acted appropriately when addressing the conditions in the Clay Plains Swamp." Byrd Report at 70. Mr. Byrd believed those actions to be consistent with the project plans and specifications and concluded that there were no related "pipeline integrity concerns in this area." *Id.* Mr. Byrd did not recommend any further remedial actions relating to the trenching techniques used in the Clay Plains Swamp.

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[1] The Final Order states that this letter was not admitted into evidence. Final Order at 17, n. 51. Intervenors have objected to admission of the letter into evidence. While VGS intends to respond to Intervenors' objections in a separate filing, VGS notes that it is not necessary to admit the letter into evidence to support the underlying finding. The fact that ANR came to this conclusion in 2017 is already in the record elsewhere. For example, the Byrd Report, which was admitted in its entirety, states that, "The ANR submitted a letter noting that the change did not change the disturbance footprint, did not raise any significant concerns about impacts to the environment, and did not require any Agency permit amendments." Byrd Report at 77.

Accordingly, the proposed CPG amendment above should be adopted by the Commission, without any further conditions, because the amendment addresses the conclusion that VGS's trenching technique in the Clay Plains Swamp was a substantial change under Commission Rule 5.408, and the evidence demonstrates there will be no future undue adverse impacts.

2. <u>CPG Amendment #2: Depth of Cover In The Clay Plains Swamp</u>

VGS proposes that the Commission amend VGS's Docket 7970 CPG to address the depth of cover in the Clay Plains Swamp as follows:

> *VGS is authorized to install the pipeline as constructed in the Clay Plains Swamp with less than four feet of cover in certain locations, provided that it complies with the following conditions:*
>
> - *VGS (or VELCO) shall install large warning signs at each end of the ROW in the Clay Plains Swamp with the following (or similar) text "WARNING. SHALLOW HIGH PRESSURE GAS PIPELINE IN THIS AREA. NOTIFY VGS AT (phone number) BEFORE MOVING HEAVY EQUIPMENT INTO THIS AREA."*
> - *VGS shall install additional yellow location markers in the Clay Plains Swamp as recommend by VELCO. See Byrd Report, Attachment 56.*
> - *VGS shall inspect the pipeline in the Clay Plains Swamp on an annual basis for two years (from when the Byrd Report was issued in January 2020) to ensure that settlement of the back-filled material has not occurred, which may reduce the buried depth of the pipeline. See Byrd Report, Attachment 56.*

The above CPG amendment and related conditions are sufficient to ensure the prevention of any future undue impacts under the relevant Section 248 criteria because, as the Commission noted in its supplemental findings, the depth of cover at less than four feet "will not result in undue adverse impacts under any relevant Section 248 criteria or the public good of the State provided that VGS addresses the concerns raised in the Byrd Report." Final Order at 18. The above conditions address Mr. Byrd's recommendations and the Commission's instruction. Mr. Byrd acknowledged that while VGS's failure to achieve four feet of cover in the Clay Plains

Swamp was a departure from the requirements in the plans and specifications, there would be no actual impacts on safety or pipeline integrity. Byrd Report at 70. In particular, Mr. Byrd concluded that the pipeline meets the conservative surface loading standard that VGS agreed upon with VELCO. *Id.* Additionally, as noted by the Commission's supplemental findings, the conclusion that the applicable surface loading standard was achieved in the Clay Plains Swamp was confirmed by two separate experts: Mott MacDonald's 2021 Memorandum and Mr. Kevin Bodenhamer's prefiled testimony on behalf of VELCO. Final Order at 18.

VGS has confirmed that the pipeline meets the conservative HS-20+15% loading standard with as little as two feet of cover based on conservative assumptions about soil strength and compaction. Final Order at 18. Subsequent depth of cover inspections have confirmed that the depth of cover continues to be adequate to meet the loading standard. See Byrd Report, Attachment 9; *id.* at 67 ("Surface loading under any anticipated scenarios isn't a concern for the ANGP").

Additionally, the above conditions are sufficient to ensure there are no future undue adverse impacts relating to the depth of cover in the Clay Plains Swamp because they incorporate the recommendations of the experts in this case. VGS has already complied with Mr. Byrd's recommendation to place signage near the Clay Plains Swamp, which provides added safety by ensuring that people are aware of the pipeline and are directed to communicate with VGS before entering that area with heavy equipment. VGS also conducts quarterly, physical on-the-ground patrols of the pipeline, including inspection of potential settlement or erosion. St. Hilaire pf. at 3 (Sept. 10, 2021). The above conditions also incorporate VELCO's May 2017 request that VGS: (1) confirm that the loading standard has been met, (2) place additional location markers in the Clay Plains Swamp, and (3) perform additional inspections of the depth

of cover. VGS has installed additional line markers as requested by VELCO in the Clay Plains Swamp. St. Hilaire pf. at 6.

Finally, in addition to the foregoing measures, and consistent with federal regulations regarding pipeline integrity management, VGS conducts constant monitoring of the pipeline, including monthly aerial inspections and quarterly physical on-the-ground patrols and leak surveys to assess potential encroachments, erosion along the pipeline, irregularities along road and stream crossings, and the adequacy of line-of-sight markers. St. Hilaire pf. at 3. For all of these reasons, the above CPG amendment and related conditions are sufficient to ensure that there will be no future undue adverse impacts relating to the depth of cover in the Clay Plains Swamp.

3. CPG Amendment #3: Trench Bottom & Trench Breakers

VGS proposes that the Commission amend VGS's Docket 7970 CPG to address pipeline burial on the trench bottom and installation of trench breakers as follows:

> *VGS is authorized to install the pipeline as constructed with respect to burial on the trench bottom and installation of trench breakers, provided that it complies with the following conditions:*
>
> - *Vermont Gas shall reduce the maximum time between ILI runs for both metal loss and geometry to once every five years, with a maximum interval of 63 months.*
> - *Within six months of the ILI, Vermont Gas also shall conduct a CIS of the effectiveness of the cathodic protection. Vermont Gas shall integrate the results with the ILI results. All areas of poor cathodic protection should be remedied and mitigated promptly. For purposes of this plan, "Poor cathodic protection" shall mean any area with a reading that does not meet the minus 0.85 VDC standard for both 'on' and 'off'. Furthermore, if metal loss of greater than 20% is noted, the mitigation of the affected pipe shall take place within 12 months of discovery. The Department and Vermont Gas agree that a 12-month time period for remediating these areas is appropriate and necessary for planning and construction in light of seasonal weather issues that may bear on when mitigation work can occur provided that the pipeline's safety factor remains above 10% of the class location (Class 3 or*

50% SMYS) factor during the entire period when taking corrosion rates into account. Corrosion rates will be used as defined in NACE SP0502 (16 mils per year as the default rate) unless the actual rate is known for the exact location or can be calculated per the standard.

- *Within six months of the ILI described above, Vermont Gas also shall conduct a coating survey using either DCVG or ACVG.[2] Vermont Gas will integrate the results of the coating survey with other surveys set forth above. All moderate and severe coating anomalies identified by the integrated data, as those terms are defined in VGS's Transmission IMP Plan (Section 7A), shall be excavated and remediated within 12 months. Furthermore, during the inspection of coating damage, measurements shall be taken to determine if metal loss is present. If over 40% of wall loss is found, the pipe shall be repaired to its original strength.*
- *Within 90 days of the completion of the ILI, Vermont Gas shall have a final report on the ILI findings. The Department and VGS agree that this period provides adequate time for Vermont Gas to require its ILI contractor to provide its findings for review, and for Vermont Gas to complete the final report of the ILI survey.*
- *Within 120 days of the completion of the ILI runs, Vermont Gas shall complete a report integrating and analyzing the ILI results (both geometry and metal loss); the cathodic protection CIS survey results; and the coating survey results. The integrated report shall note all metal loss of 10% or greater; all areas where the cathodic protection does not meet the minus 0.85 VDC standard for either on or off potentials; and all moderate or severe coating anomalies, as those terms are defined in Vermont Gas's Transmission IMP Plan (Section 7A). The Department and Vermont Gas agree that this period provides adequate and appropriate time for the company to integrate the results of all of these inspections, particularly given the amount of data that will be generated over time after the initial round of testing.*
- *Vermont Gas shall provide all of the above final reports to the Department promptly upon completion but no later than 10 business days, and shall make available all raw data, surveys and analyses received or produced regarding these required inspections. Vermont Gas will also document its steps taken to remedy any findings from these inspections that require action as noted.*

The above CPG amendment and related conditions are sufficient to ensure the prevention of any future undue impacts under the relevant Section 248 criteria relating to installation of the pipeline on the trench bottom and installation of trench breakers for the following reasons.

[2] Direct or Alternating Current Voltage Gradient.

First, the conditions adopt measures agreed upon in VGS's Stipulated Remedial Action Compliance Plan initially filed in Case No. 18-0395-PET. Byrd Report, Attachment 67. Those remedial measures shorten the federally required timeframe for in-line inspections of the pipeline[3] and require VGS to conduct Close Interval Surveys ("CIS") and coating surveys using either DCVG or ACVG, which provide targeted assessments of cathodic protection and corrosion control. These measures will ensure there are no undue adverse impacts relating to this CPG amendment going forward.

Second, the evidence ultimately demonstrated that there was no concern about corrosion on the pipeline or impacts to wetlands in connection with installation of trench breakers and installation of the pipeline on the trench bottom. As the Commission concluded in its supplemental findings on these issues, Mr. Byrd's investigation demonstrated that there were no concerns about installation on the trench bottom because there were no locations where the potential for differential oxygen level between native and non-native soils was present. See Final Order at 18 (finding that there "are no locations where the pipeline was both installed directly on the trench bottom and backfilled with non-native backfill"). Installation on the trench bottom therefore "had no deleterious effect on corrosion control and did not create a corrosive environment for the pipeline." *Id.* Additionally, investigation of potential impacts has demonstrated that trench breaker installation was adequate to ensure no adverse impacts to wetlands. *Id.*

[3] In this manner, the above CPG conditions adopt pipeline integrity monitoring that is both in excess of federal regulations and that provides robust ongoing remedial actions. While Mr. Byrd did not agree that the ILI period should be reduced to five years from the standard pipeline integrity interval of seven years, VGS has already committed to that inspection interval and completed the first ILI and related testing in 2018. St. Hilaire pf. at 4; Byrd Report at 72 ("The in-line-inspection (ILI) of July 9-18, 2018, found no actionable anomalies. The cathodic protection close-interval survey (CIS) and direct current voltage gradient (DCVG) surveys found no problems with the pipe or coating (Attachment A#33).").

Accordingly, the above CPG amendment and related conditions are sufficient to ensure that there will be no undue adverse impacts under the Section 248 criteria going forward as it relates to the trench bottom and trench breaker-related issues.

4. <u>CPG Amendment #4: Compaction</u>

VGS proposes that the Commission amend VGS's Docket 7970 CPG to address compaction requirements for the pipeline as follows:

> *VGS is authorized to install the pipeline as constructed with regard to compaction requirements, provided that it complies with the following conditions:*
>
> - *VGS shall hire a Vermont-licensed professional civil engineer with expertise in dirt road construction and maintenance to inspect each of the 15 open cut road crossings for evidence of frost heave, settlement, and potholing, at times of the engineer's choosing but at least twice (once during cold weather to look for frost heave and once during warm weather to look for settlement and potholing), and have them develop and certify a remediation plan for any deficiencies that are discovered. VGS should inform the engineer in writing prior to the inspections of any complaints received concerning these crossing locations. VGS should report to the Department and any relevant local agency, municipality, or authority for each crossing within 18 months of Mr. Byrd's report (which issued January 2020) concerning the results of these inspections and any remedial actions taken or planned. VGS should provide periodic updates to these parties until all deficiencies (if any) have been corrected.*
> - *VGS shall conduct a similar independent review after each winter season to determine if there is any frost heave at locations where the pipeline is buried beneath roadways and repair any damage.*

The above CPG amendment and related conditions are sufficient to ensure that there will be no future undue adverse impacts to road crossing or public safety due to compaction. As the Commission noted in the Final Order, VGS has already conducted the road crossing inspection recommended by Mr. Byrd in accordance with the above condition. Final Order at 19. That inspection demonstrated that fourteen of the fifteen locations showed no signs of compromised roadbed performance, erosion, or settlement. *Id.* Moreover, VGS will continue to monitor these locations during quarterly physical inspections and conduct "a similar independent review after

each winter season" as contemplated by the Commission's Final Order at 19. This will ensure that there will be no future undue adverse impacts relating to compaction.

5. CPG Amendment #5: Design & Engineering

VGS proposes that the Commission amend VGS's Docket 7970 CPG to address staffing the Project with a Vermont-licensed professional engineer to serve as the responsible charge engineer as follows:

> *VGS is authorized to install the pipeline as constructed with respect to compliance with professional engineering requirements, provided that it complies with the following condition:*
>
> - *Vermont Gas shall continue to ensure that any and all future pipeline or related construction projects are overseen by a Vermont-licensed engineer, the duties of which will include the approval and signing of construction drawings and specifications, and any and all changes made to those drawings and specifications.*

The above CPG amendment and related condition are sufficient to ensure that there will be no future undue adverse impacts regarding professional engineering and pipeline design for the following reasons.

First, VGS has committed to ensuring that all professional engineering on future projects comply with Vermont licensing requirements. The above condition ensures that for any future VGS project, a Vermont-licensed engineer will approve and sign construction drawings and specifications and any and all changes made to those drawings and specifications.

Second, as the Commission discussed in the Final Order, the ANGP was designed and engineered by CHA, a full-service engineering and consulting firm that provided continuous consultation and engineering services for the Project. Final Order at 19. While the original issued for construction drawings were not signed by CHA, CHA subsequently affirmed that all of the

plans used to construct the pipeline were "prepared under the supervision of a Vermont-licensed engineer and in accordance with professional standards." Final Order at 19.

Finally, Mr. Byrd's investigation concluded that there was no evidence in this case that the engineering or design was deficient, not performed by competent engineers, or posed a risk to public health, safety, or welfare. Byrd Report at 64. On the contrary, Mr. Byrd concluded that the specifications for the project "provided a comprehensive and technically sound basis for quality assurance during the project," Byrd Report at 64, and that, "Extensive specifications of all types were prepared in advance of construction, and extensive inspections were performed by multiple parties to ensure conformance with those specifications." *Id.*

Accordingly, the above CPG amendment and condition are adequate to ensure that there are no future undue adverse impacts on safety relating to the supervision of projects by a Vermont-licensed engineer.

6. <u>Additional Remedial Actions</u>

VGS has committed to undertaking other remedial recommendations that are not related to the above-referenced construction issues and CPG amendments and conditions. See Byrd Report at 73. These recommendations are set forth below:

- *The zinc ribbon/SSD system should be routinely inspected and quickly repaired as necessary to ensure that AC interference currents do not cause corrosion of the pipeline. VGS should conduct and document detailed inspections of all SSDs twice a year (not to exceed 7.5 months between inspections) and correct any problems within 2 months of discovery.*
- *VGS should conduct over-the-line (OTL) surveys every 3 ½ years (not to exceed 48 months between inspections), with the specific types of OTL survey to be determined by a competent corrosion consultant independent of VGS. All indications should be investigated and corrected as necessary within six months of discovery. The surveys should be able to detect AC interference/stray current issues.*

- *VGS should perform a DOC survey in all actively cultivated agricultural areas every 3 years, and address any DOC less than 4' (or landowner agreements – whichever is greater) to ensure agricultural activities will not impact the pipeline. This does not mean that DOC must be maintained at the original installation depth, but that any loss of cover must be managed in cooperation with the landowner/farmer to ensure agricultural activities do not interfere with pipeline safety.*
- *VGS should ensure its line locating procedures, training, and qualification programs address the potential for zinc ribbon interference with line locating equipment. The procedures should require disconnection of the zinc ribbon prior to using an indirect line locator, probing the pipeline location, or hand digging/potholing to ensure the line is located accurately prior to any excavation near a pipe protected by zinc ribbon. These procedures, training programs, and qualification programs should be submitted for Department review within six months of [the Byrd] report.*
- *VGS should modify its pipeline integrity management plan to specifically mention the locations of the 67 Canusa sleeve repairs from the problematic batches. These locations should be called out as a potential integrity concern during all subsequent integrity assessments and evaluations (such as close-interval surveys and in-line inspections). This does not mean that every assessment must be designed specifically to look for external corrosion threats at coating repairs. Rather, that the Canusa sleeve locations be considered when evaluating the results of every assessment (even assessments not designed to look for that threat), because of the potential for interacting threats.*

Conclusion

For the reasons discussed above, VGS proposes that the Commission amend VGS's Docket 7970 CPG in the manner described with the conditions specified, which will not only confirm that the CPG violations found by the Commission did not, in fact, have any "actual impacts," Final Order at 4, but will prevent any undue adverse impacts going forward.

DATED at Burlington, Vermont, on this 27th day of April, 2023.

VERMONT GAS SYSTEMS, INC.

By: */s/ Owen J. McClain*

Debra L. Bouffard, Esq.
Owen J. McClain, Esq.
SHEEHEY FURLONG & BEHM P.C.
30 Main Street, 6th Floor
P.O. Box 66
Burlington, Vermont 05402-0066
(802) 864-9891
dbouffard@sheeheyvt.com
omcclain@sheeheyvt.com

Attachment A

1. CPG Amendment #1: Trenching Techniques In The Clay Plains Swamp

VGS is authorized to install the pipeline as constructed in the Clay Plains Swamp using what is known as the "sink-in-swamp" burial method, provided that it complies with all of the conditions herein.

2. CPG Amendment #2: Depth of Cover In The Clay Plains Swamp

VGS is authorized to install the pipeline as constructed in the Clay Plains Swamp with less than four feet of cover in certain locations, provided that it complies with the following conditions:

- *VGS (or VELCO) shall install large warning signs at each end of the ROW in the Clay Plains Swamp with the following (or similar) text "WARNING. SHALLOW HIGH PRESSURE GAS PIPELINE IN THIS AREA. NOTIFY VGS AT (phone number) BEFORE MOVING HEAVY EQUIPMENT INTO THIS AREA."*
- *VGS shall install additional yellow location markers in the Clay Plains Swamp as recommend by VELCO. See Byrd Report, Attachment 56.*
- *VGS shall inspect the pipeline in the Clay Plains Swamp on an annual basis for two years (from when the Byrd Report was issued in January 2020) to ensure that settlement of the back-filled material has not occurred, which may reduce the buried depth of the pipeline. See Byrd Report, Attachment 56.*

3. CPG Amendment #3: Trench Bottom & Trench Breakers

VGS is authorized to install the pipeline as constructed with respect to burial on the trench bottom and installation of trench breakers, provided that it complies with the following conditions:

- *Vermont Gas shall reduce the maximum time between ILI runs for both metal loss and geometry to once every five years, with a maximum interval of 63 months.*
- *Within six months of the ILI, Vermont Gas also shall conduct a CIS of the effectiveness of the cathodic protection. Vermont Gas shall integrate the results with the ILI results. All areas of poor cathodic protection should be remedied and mitigated promptly. For purposes of this plan, "Poor cathodic protection" shall mean any area with a reading that does not meet the minus 0.85 VDC standard for both 'on' and 'off'. Furthermore, if metal loss of greater than 20% is noted, the mitigation of the affected pipe shall take place within 12 months of discovery. The*

Department and Vermont Gas agree that a 12-month time period for remediating these areas is appropriate and necessary for planning and construction in light of seasonal weather issues that may bear on when mitigation work can occur provided that the pipeline's safety factor remains above 10% of the class location (Class 3 or 50% SMYS) factor during the entire period when taking corrosion rates into account. Corrosion rates will be used as defined in NACE SP0502 (16 mils per year as the default rate) unless the actual rate is known for the exact location or can be calculated per the standard.

- *Within six months of the ILI described above, Vermont Gas also shall conduct a coating survey using either DCVG or ACVG.[4] Vermont Gas will integrate the results of the coating survey with other surveys set forth above. All moderate and severe coating anomalies identified by the integrated data, as those terms are defined in VGS's Transmission IMP Plan (Section 7A), shall be excavated and remediated within 12 months. Furthermore, during the inspection of coating damage, measurements shall be taken to determine if metal loss is present. If over 40% of wall loss is found, the pipe shall be repaired to its original strength.*
- *Within 90 days of the completion of the ILI, Vermont Gas shall have a final report on the ILI findings. The Department and VGS agree that this period provides adequate time for Vermont Gas to require its ILI contractor to provide its findings for review, and for Vermont Gas to complete the final report of the ILI survey.*
- *Within 120 days of the completion of the ILI runs, Vermont Gas shall complete a report integrating and analyzing the ILI results (both geometry and metal loss); the cathodic protection CIS survey results; and the coating survey results. The integrated report shall note all metal loss of 10% or greater; all areas where the cathodic protection does not meet the minus 0.85 VDC standard for either on or off potentials; and all moderate or severe coating anomalies, as those terms are defined in Vermont Gas's Transmission IMP Plan (Section 7A). The Department and Vermont Gas agree that this period provides adequate and appropriate time for the company to integrate the results of all of these inspections, particularly given the amount of data that will be generated over time after the initial round of testing.*
- *Vermont Gas shall provide all of the above final reports to the Department promptly upon completion but no later than 10 business days, and shall make available all raw data, surveys and analyses received or produced regarding these required inspections. Vermont Gas will also document its steps taken to remedy any findings from these inspections that require action as noted.*

[4] Direct or Alternating Current Voltage Gradient.

4. CPG Amendment #4: Compaction

VGS is authorized to install the pipeline as constructed with regard to compaction requirements, provided that it complies with the following conditions:

- *VGS shall hire a Vermont-licensed professional civil engineer with expertise in dirt road construction and maintenance to inspect each of the 15 open cut road crossings for evidence of frost heave, settlement, and potholing, at times of the engineer's choosing but at least twice (once during cold weather to look for frost heave and once during warm weather to look for settlement and potholing), and have them develop and certify a remediation plan for any deficiencies that are discovered. VGS should inform the engineer in writing prior to the inspections of any complaints received concerning these crossing locations. VGS should report to the Department and any relevant local agency, municipality, or authority for each crossing within 18 months of Mr. Byrd's report (which issued January 2020) concerning the results of these inspections and any remedial actions taken or planned. VGS should provide periodic updates to these parties until all deficiencies (if any) have been corrected.*
- *VGS shall conduct a similar independent review after each winter season to determine if there is any frost heave at locations where the pipeline is buried beneath roadways and repair any damage.*

5. CPG Amendment #5: Design & Engineering

VGS is authorized to install the pipeline as constructed with respect to compliance with professional engineering requirements, provided that it complies with the following condition:

- *Vermont Gas shall continue to ensure that any and all future pipeline or related construction projects are overseen by a Vermont-licensed engineer, the duties of which will include the approval and signing of construction drawings and specifications, and any and all changes made to those drawings and specifications.*