COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET, HARRISBURG, PA 17120

BUREAU OF
INVESTIGATION
&
ENFORCEMENT

December 19, 2023

Via Electronic Filing
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission,
Bureau of Investigation and Enforcement v.
UGI Utilities, Inc. (Gas Division)
Docket No. C-2023-
Formal Complaint (Non-Proprietary and Proprietary Version)

Dear Secretary Chiavetta:

Enclosed for electronic filing is the **Non-Proprietary** version of the **Formal Complaint** of the Bureau of Investigation and Enforcement ("I&E") of the Pennsylvania Public Utility Commission in the above-referenced matter. The **Proprietary** version has been submitted to the Secretary's Bureau via their ShareFile.

Copies have been served on the parties of record in accordance with the Certificate of Service. If you have any questions, please do not hesitate to contact me.

Sincerely,

Colby B. Widdowson
Prosecutor
Bureau of Investigation & Enforcement
PA Attorney ID No. 326185
(717) 787-2139
cwiddowson@pa.gov

CBW/ac
Enclosures

cc: Per Certificate of Service
Michael L. Swindler, Deputy Chief Prosecutor (*via email - mswindler@pa.gov*)
Robert Horensky, Manager, Safety Division (*via email - rhorensky@pa.gov*)
Michael Chilek, Supervisor, Fixed Utility Valuation Engineer (*via email - mchilek@pa.gov*)
Jim Harchar, Fixed Utility Valuation Engineer (*via email - jharchar@pa.gov*)

NOTICE

A. **You must file an Answer within 20 days of the date of service of this Complaint.** The date of service is the mailing date as indicated at the top of the Secretarial Letter. *See* 52 Pa. Code § 1.56(a). The Answer must raise all factual and legal arguments that you wish to claim in your defense, include the docket number of this Complaint, and be verified. The Answer must be submitted by efiling with the Secretary of the Commission by opening an efiling account through the Commission's website and accepting eservice at http://www.puc.state.pa.us/efiling/default.aspx. If your filing contains confidential material, you are required to file by overnight delivery to ensure the timely filing of your submission to:

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

If your Answer is 250 pages or less, you are not required to file a paper copy. If your Answer exceeds 250 pages, you must file a paper copy with the Secretary's Bureau.

Additionally, please electronically serve a copy on:

Colby B. Widdowson, Prosecutor
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement
cwiddowson@pa.gov

B. If you fail to Answer this Complaint within 20 days, the Bureau of Investigation and Enforcement will request that the Commission issue an Order imposing the requested relief.

C. You may elect not to contest this Complaint by paying the civil penalty and performing the requested relief within 20 days. Send only a certified check or money order made payable to the "Commonwealth of Pennsylvania," with the docket number indicated, and mailed to:

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

D. If you file an Answer which either admits or fails to deny the allegations of the Complaint, the Bureau of Investigation and Enforcement will request that the Commission issue an Order imposing the requested relief set forth in this Complaint.

E. If you file an Answer which contests the Complaint, the matter will be assigned to an Administrative Law Judge for hearing and decision. The Judge is not bound by the penalty set forth in the Complaint and may impose additional and/or alternative penalties as appropriate.

F. If you are a corporation, you must be represented by legal counsel. *See* 52 Pa. Code § 1.21.

G. Alternative formats of this material are available for persons with disabilities by contacting the Commission's ADA Coordinator at 717-787-8714.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, Bureau of Investigation and Enforcement, Complainant	: : : :	
v.	:	Docket No. C-2023-
UGI Utilities, Inc. (Gas Division), Respondent	: : :	

FORMAL COMPLAINT

(NON-PROPRIETARY VERSION)

NOW COMES the Bureau of Investigation and Enforcement ("I&E") of the Pennsylvania Public Utility Commission, by its prosecuting attorneys, pursuant to Section 701 of the Public Utility Code, 66 Pa.C.S. § 701, and files this Formal Complaint ("Complaint") against UGI Utilities, Inc., Gas Division ("UGI Gas" or "Respondent") alleging violations of the Public Utility Code, Pennsylvania Code, and Code of Federal Regulations in connection with a natural gas incident that occurred on December 25, 2020, on Lower Swiftwater Road, Swiftwater, Monroe County, Pennsylvania. In support of its Complaint, I&E respectfully avers as follows:

I. COMMISSION JURISDICTION AND AUTHORITY

1. The Pennsylvania Public Utility Commission ("Commission" or "PUC"), with a mailing address of the Commonwealth Keystone Building, 400 North Street, Harrisburg, PA 17120, is a duly constituted agency of the Commonwealth of Pennsylvania empowered to

regulate public utilities within the Commonwealth pursuant to the Public Utility Code, 66 Pa.C.S. §§ 101, *et seq.* ("Code").

2. Complainant is the Commission's Bureau of Investigation and Enforcement, which is the bureau established to take enforcement actions against public utilities and other entities subject to the Commission's jurisdiction pursuant to 66 Pa.C.S. § 308.2(a)(11); *See also Implementation of Act 129 of 2008; Organization of Bureaus and Offices*, Docket No. M-2008-2071852 (August 11, 2011) (delegating authority to initiate proceedings that are prosecutory in nature to I&E).

3. Complainant's prosecuting attorneys are as follows:

Colby Widdowson
Prosecutor
cwiddowson@pa.gov
(717) 787-2139

Michael L. Swindler
Deputy Chief Prosecutor
mswindler@pa.gov

Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

4. Respondent is UGI Utilities, Inc., a wholly owned subsidiary of UGI Corporation, with a principal place of business of 1 UGI Drive, Denver, PA.

5. Section 501(a) of the Code, 66 Pa. C.S. § 501(a), authorizes and obligates the Commission to execute and enforce the provisions of the Code.

6. Section 701 of the Code, 66 Pa. C.S. § 701, authorizes the Commission, *inter alia*, to hear and determine complaints against public utilities for violations of any law or

regulation that the Commission has jurisdiction to administer or enforce.

7. Section 3301(c) of the Code, 66 Pa.C.S. § 3301(c), which is specific to gas pipeline safety violations, authorizes the Commission to impose civil penalties on any person or corporation, defined as a public utility, who violates any provisions of the Code or any regulation or order issued thereunder governing the safety of pipeline or conduit facilities in the transportation of natural gas, flammable gas, or gas which is toxic or corrosive. Section 3301(c) further provides that a civil penalty of up to Two Hundred Thousand Dollars ($200,000) per violation for each day that the violation persists may be imposed, except that for any related series of violations, the maximum civil penalty shall not exceed Two Million Dollars ($2,000,000) or the penalty amount provided under Federal pipeline safety laws, whichever is greater.

8. Civil penalties for violations of Federal pipeline safety laws and regulations are adjusted annually to account for changes in inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Pub. L. 114-74, § 701, 129 Stat. 599, 28 U.S.C. § 2461 note (Nov. 2, 2015) (amending the Federal Civil Penalties Inflation Adjustment Act of 1990). The applicable adjustment made by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration ("PHMSA") occurred on July 31, 2019 and revised the maximum civil penalty to Two Hundred Eighteen Thousand, Six Hundred Forty-Seven Dollars ($218,647.00) for each violation for each day the violation continues, with a maximum penalty not to exceed Two Million, One Hundred Eighty-Six Thousand, Four Hundred Sixty-Five Dollars ($2,186,465.00) for a related series of violations. 84 Fed. Reg. 37059 (July 31, 2019).

9. Pursuant to Section 59.33(b) of the Commission's regulations, 52 Pa. Code § 59.33(b), I&E's Pipeline Safety Division has the authority to enforce Federal pipeline safety laws and regulations set forth in 49 U.S.C.A. §§ 60101-60503 and as implemented at 49 CFR Parts 191-193, 195 and 199. The Federal pipeline safety laws and regulations prescribe the minimum safety standards for all natural gas and hazardous liquid public utilities in the Commonwealth.

10. Respondent is a "public utility" as that term is defined at 66 Pa.C.S. § 102,[1] as it is engaged in providing public utility service as a natural gas distribution company ("NGDC") to the public for compensation.

11. Respondent maintains a distribution system of approximately 12,000 miles of gas mains and 600,000 service lines in Pennsylvania.

12. Respondent, in providing natural gas distribution service to the public for compensation, is subject to the power and authority of this Commission pursuant to Section 501(c) of the Code, 66 Pa.C.S. § 501(c), which requires a public utility to comply with Commission regulations and orders, including Federal pipeline safety laws and regulations.

13. Pursuant to the provisions of the applicable Commonwealth and Federal statutes and regulations, the Commission has jurisdiction over the subject matter and the actions of Respondent related thereto.

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[1] "Public utility" is defined as:

(1) Any person or corporations now or hereafter owning or operating in this Commonwealth equipment or facilities for:

(i) Producing, generating, transmitting, distributing or furnishing natural or artificial gas, electricity, or steam for the production of light, heat, or power to or for the public for compensation.

66 Pa.C.S. § 102.

II. BACKGROUND

14. On December 25, 2020, at approximately 1:44 a.m., a pipeline failure occurred in the westward travelling lane of Lower Swiftwater Road, Swiftwater, Pennsylvania, 18370.

15. The pipeline failure occurred at a butt fusion[2] of 12-inch high-pressure high-density plastic pipe in the natural gas service territory of Respondent.

16. The failure and resulting gas release resulted in a six-foot wide by eight-foot long and four-foot deep void in the roadway.

17. The butt fusion failure and gas release resulted in one (1) adult fatality and injuries to two (2) other adults.

18. Approximately 975,000 Standard Cubic Feet of gas was released during the incident.

19. The butt fusion failure and gas release resulted in the evacuation of two (2) nearby residences and the loss of gas service to downstream customers.

20. The resulting cost of damage and the initial response from the fatal failure and gas release was approximately $60,000.

21. Pipeline Safety Inspectors from I&E's Safety Division (I&E-Safety) responded to the scene and conducted an investigation.

A. The MCTA Project

22. In 2017, Respondent initiated a project to extend its distribution system in the Swiftwater area of UGI Hazelton's operating area, titled the Monroe County Transit Authority ("MCTA Project") extension.

[2] Butt fusion is completed by shaving both face ends of two plastic pipe sections to be fused, heating the ends of each pipe simultaneously until both meet a melting temperature, and pressing the melted ends of pipe together to form the fusion.

23. Leeward Construction, Inc. ("Leeward") was contracted by Respondent to complete the MCTA Project.

24. The MCTA Project was installed in 2018 and 2019 during separate phases of construction.

25. The failed butt fusion that resulted in the fatal gas release was installed on the night of August 22, 2019.

26. The function of the MCTA Project is to supply gas service to the Monroe County Transportation Authority, a public transportation hub which converted buses to compressed natural gas, and to Great Wolf Lodge, a luxury indoor water park and resort.

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END CONFIDENTIAL

B. Chronology of Events on the Day of the Incident

44. Between December 14, 2020 and December 21, 2020, the Swiftwater area had temperatures below freezing, during which an inch of snow fell on top of a few inches of snow that was already present on the ground.

45. The high temperature in the Swiftwater area averaged around 35 degrees until December 24, 2020, when a warm front arrived raising the temperature to 60 degrees by midnight.

46. The rise in temperature also brought approximately two inches of rain which started falling in the afternoon on December 24, 2020 and continued overnight.

47. Due to heavy rain and snowmelt first responders reported water pooling and running down the slope of the roadway the night of the incident.

48. On December 25, 2020, at approximately 1:44 a.m., the butt fusion failure and gas release occurred at the westward travelling lane of Lower Swiftwater Road, Swiftwater, PA in UGI Hazelton's operating area. See attached I&E Exhibit 1.

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END CONFIDENTIAL

50. The pipeline failure occurred on the 12-inch HDPE plastic pipe at the butt fusion, resulting in an approximate two-inch separation of the pipe at the butt fusion. See attached I&E Exhibit 2.

51. The force of the escaping gas scoured and created a six-foot wide by eight-foot long by four-foot deep void in the roadway. See attached I&E Exhibit 2.

52. At the time of the gas release, an SUV, carrying three (3) adults and a child, was travelling westward on Lower Swiftwater Road.

53. The pipe failure and resulting road damage caused an automobile accident, where the SUV flipped, resulting in one (1) adult fatality and two (2) adult injuries.

54. The pipe failure resulted in the evacuation of two (2) residences, loss of gas service to downstream customers, and approximately $60,000 in damages and initial response costs.

55. Respondent was notified of the pipe failure at approximately 1:44 a.m. on December 25, 2020. Their first responder arrived at the location at approximately 2:07 a.m. and stopped the flow of gas at 3:45 am on December 25, 2020.

56. Respondent was unable to immediately begin work at the scene of the incident in light of the fatality and injuries resulting from the incident.

57. At approximately 10:00 a.m., Respondent began examining the failed joint.

58. Between approximately 11:00 a.m. to 3:00 p.m., Respondent cut out the failed fusion and replaced it with pre-tested pipe.

59. While at the scene, I&E-Safety measured the roll back bead of the butt fusion on the failed joint to be 1/8-inches. See attached I&E Exhibit 3.

C. UGI's Post Incident Investigation

60. On December 25, 2020, Respondent cut out and preserved both sides of the failed section of pipe.

61. The failed butt fusion was visually observed by both Respondent personnel and I&E-Safety.

62. On January 7, 2021, upon request of I&E-Safety, Respondent conducted further investigation of the butt fusion joints to the east and west of the incident site.

63. The butt fusion joint on the east side of the incident site was visually mitered and was visually unacceptable. See attached I&E Exhibit 4.

64. In measuring the angle of the miter, it was determined that the pipes were 2.5 degrees off alignment from each other. See attached I&E Exhibit 4.

65. On January 8, 2021, Respondent exposed 15-feet of pipe at the joints located on the east and west side of the failed butt fusion and cut out 3-feet on each side of the butt fusion joints.

66. During the January 8, 2021 excavation activity, I&E-Safety observed the pipe springing apart about 1.25 inches when cut into, which indicated that the pipe was under tension during the cutting process.

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68. Once pressure was reinstated into the pipeline, after the failure, Respondent conducted a leak survey of the line twice daily for two (2) days and then once daily.

69. On January 12, 2021, after the discovery of additional mitered butt fusions Respondent returned to conducting leak surveys twice daily.

70. On January 13, 2021, I&E-Safety was advised that Respondent intended to replace approximately 550 feet of the 12-inch HDPE pipe with 12-inch steel at the curve in Lower Swiftwater Road where the failure occurred.

71. Of the 550 feet of HDPE pipe that was replaced, which included 11 fusions, Respondent discovered that three (3) butt fusions joints were visually unacceptable, including the failed butt fusion joint.

72. The additional visually unacceptable butt fusions were located to the east and west of the failed butt fusion joint.

73. The butt fusion to the west of the incident location was visually mitered in both the vertical and horizontal directions. See attached I&E Exhibit 5.

74. On November 18, 2021, I&E-Safety was advised that Respondent was completing additional replacements within the MCTA Project in January and February 2022. This replacement project continued northeast on Lower Swiftwater Road to the beginning of the MCTA Project near Burton Road.

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END CONFIDENTIAL

76. During this replacement project in January and February 2022, UGI removed 500 feet of the 12-inch plastic main, abandoning 1,400 feet in place, and discovered another three (3) plastic butt fusion joints which were visually unacceptable. See attached I&E Exhibit 6.

77. A total of six (6) visually unacceptable butt fusion joints, including the failed butt fusion joint, were found on the 12-inch HDPE pipe installed during the MCTA Project.

D. Construction of the MCTA Project Pipeline

78. Leeward's construction method consisted of saw cutting the roadway and then excavating the area in which the pipe was to be placed, placing pipe screenings and tracer wire before butt fusing the pipe.

79. Leeward would either butt fuse sections of pipe outside the ditch or butt fuse the pipe in the ditch.

80. On the night of August 22, 2019, the failed butt fusion was fused in the ditch.

81. Between approximately July 2, 2019 and August 2, 2019, Leeward used a McElroy 412 Dynamic Butt Fusion Machine #C61046 to complete butt fusions on the MCTA Project.

82. Respondent and Leeward did not retain and are unable to provide calibration information for the McElroy 412 Dynamic Butt Fusion Machine #C61046 and its components.

83. Respondent and Leeward are unable to identify or obtain the make, model, serial number, or calibration records of the machine used to complete each of the butt fusions

performed after August 2, 2019, including the failed butt fusion.

84. Based upon Respondent's daily inspector logs, it was determined that a McElroy 412 DynaMC HP (Hand Pump), yellow cylinder, was used to complete some of the butt fusions after August 2, 2019.

85. Hydraulically assisted butt fusion machines, such as the McElroy 412 Dynamic Butt Fusion Machine, maintain the same pressure throughout the fusion while a hand pump version, such as the McElroy 412 DynaMC HP (Hand Pump), must be monitored due to pressure fluctuation over time, requiring further pumping to keep the pressure at appropriate levels.

86. McElroy equips their fusion machines with different colored hydraulic cylinders, which indicate the amount of force the cylinder and machine are capable of exerting during the fusion process. A green cylinder is used to indicate high force hydraulic carriage cylinders and are used when high interfacial pressures are required, when handling heavy wall pipe, or when large drag factors need to be overcome. A yellow cylinder is used to indicate low force hydraulic cylinders, which are used when fusing pipe with low interfacial pressure.

E. Laboratory Analysis

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100. Mitered joints are not permitted per American Society for Testing and Materials (ASTM) F2620-12 and 49 CFR § 192.281(a).

F. Geotechnical Site Evaluation

101. I&E-Safety requested ARM Group LLC ("ARM") to complete a Geotechnical Site Evaluation to assess any potential geotechnical issues which may have led to ground movement in the vicinity of the 12-inch HDPE plastic pipe failure.

102. ARM issued its report (hereinafter "ARM Report") on March 26, 2021 outlining its review and analysis of I&E-Safety's request. See I&E Exhibit 7.

103. ARM conducted incident site visits on December 30, 2020, January 21, 2021, and reviewed photos of the incident site. See attached I&E Exhibit 7.

104. ARM concluded that the pipeline joint was substandard, based on the understanding that a properly constructed joint should not have failed as cleanly as what was observed at the incident site. See attached I&E Exhibit 7.

105. ARM concluded that the pipeline separation was not related to potential slope instability, basing this conclusion on observations that the roadway surface did not show cracking that would be consistent with the type of movement that would induce failure of the pipeline and a lack of evidence of lateral movement of the pipeline which would be consistent with slope related movement. See attached I&E Exhibit 7.

106. ARM explained that the observed cracking in the pavement was consistent with substandard compaction of soils above a utility trench, as well as normal wear and tear of an asphalt pavement in Northeastern Pennsylvania. See attached I&E Exhibit 7.

107. ARM further concluded that the pipeline was under significant tension stress at the time of the joint failure, which was likely due to the difference in temperatures of the HDPE materials at the time of installation and at the time of the incident and which may have been compounded by installation practices. See attached I&E Exhibit 7.

108. ARM concluded that heavy precipitation and the drainage conditions at the site likely lead to zones of perched groundwater in the area near the incident leading to a decrease in soil friction or soil resistance on the pipeline, particularly downslope from the incident location. See attached I&E Exhibit 7.

109. ARM ultimately determined that the pipeline was in a near-failure condition for some time prior to the incident, and that a combination of substandard joint construction, increased tensile stress in the pile, and a decrease in soil resistance led to the butt fusion joint failure on December 25, 2020. See attached I&E Exhibit 7.

G. Root Cause Analysis

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116. Regarding the "type of fusion equipment" used, Respondent is unable to provide information regarding the make, model, serial number, the identity of the entity from which the machine was obtained, or calibration records of the butt fusion machine used to fuse the failed joint. Additionally, pictures in the daily job inspectors log, show a butt fusion machine unit, a DynaMC 412 HP, yellow cylinder, which was not approved in Respondent's Gas procedures, was used to make joints around the time the failed fusion was completed.

117. After January 22, 2019 and throughout the remainder of the MCTA Project, including, when the failed fusion was completed, Respondent's procedures, used by employees and contractors, incorporated ASTM F2620-11, but were not updated to incorporate ASTM F2620-12, which was the standard after January 22, 2019.

III. UGI GAS PROCEDURES

118. During the entirety of the MCTA Project, including at the time the failed butt fusion was created, Respondent used Gas Operations Manual ("GOM") 25.10.10 procedures for the creation and installation of butt fusion joints on plastic pipe.

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120. At and around the time the failed butt fusion was completed, Respondent did not have procedures to record the maintenance of equipment used in joining plastic pipe.

121. At and around the time the failed butt fusion was completed, Respondent did not have procedures or specific training for using a manufacturer's fusion pressure application.

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123. A McElroy 412 DynaMC HP (Hand Pump), has a different set up and requires a different fusing process than a McElroy Rolling type 412, and as such was not approved by Respondent's procedures for making joints.

124. During the MCTA Project, including at the time the failed butt fusion was fused, Respondent did not have procedures or training on how to complete a fusion with a

McElroy 412 DynaMC HP (Hand Pump), resulting in Leeward calculating the pressures and using the machine without any procedures or training.

125. All fusion pressures calculations are specific to machine type and pipe size and require drag pressure to be added to the fusion pressure calculated value.

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END CONFIDENTIAL

129. These aforementioned procedures for calculating fusion pressure did not apply to the McElroy DynaMC 412 HP (Hand Pump) used by Leeward.

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132. Respondent is unable to determine the actual drag pressure for each fusion in the MCTA Project.

133. The Pipeline and Hazardous Materials Safety Administration ("PHMSA") promulgated amendment 192-124, which required operators to amend their procedures to incorporate ASTM F2620-12 by January 22, 2019, under 192.281(c)(1):

> *Heat-fusion joints. Each heat fusion joint on a PE pipe or component, except for electrofusion joints, must comply with ASTM F2620 (incorporated by reference in § 192.7), or an alternative written procedure that has been demonstrated to provide an equivalent or superior level of safety and has been proven by test or experience to produce strong gastight joints, and the following: A butt heat-fusion joint must be joined by a device that holds the heater element square to the ends of the pipe or component, compresses the heated ends together, and holds the pipe in proper alignment in accordance with the appropriate procedure qualified under § 192.283.* See Pipeline Safety: Plastic Pipe Rule, 83 FR 58694-01.

134. In PHMSA's NPRM amendment 192-124, PHMSA comments on the requirement of adding ASTM F2620-12 stating:

> *Regarding concerns on whether operator joining procedures that may differ from ASTM F2620-12 may not be acceptable and would have to be requalified, it would depend on how exactly they differ. PHMSA would expect that if an operator can demonstrate the differences are sound and provide an equivalent or better level of safety compared to ASTM F2620-12 it could be found acceptable. However, if operator procedures are found to be lacking in any way, such as a heating temperatures used, fusion pressures or cooling times, they may not be acceptable.* See Pipeline Safety: Plastic Pipe Rule, 83 FR 58694-01.

135. Respondent represented to I&E-Safety that GOM 25.10.10 was effective during the time of the construction of the MCTA Project and "ASTM F2620-12 was not incorporated into code until 1/22/2019 and did not apply at the time of the installation of the MCTA project."

136. The MCTA Project was active and ongoing after January 22, 2019, including the creation of the failed butt fusion joint, and Respondent had not amended their procedures to conform to ASTM F2620-12.

137. Leeward contractors were not qualified under the updated standards of ASTM F2620-12.

138. Respondent's procedures fell below the requirements of ASTM F2620-12 in areas relating to cleaning, facing, heating, holding time, and cooling time; specifically:

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[redacted] [redacted]

> [redacted]

[redacted]

[redacted] [redacted]

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END CONFIDENTIAL

140. The bead size on the failed butt fusion joint had a roll back bead that was 1/8-inches, which was smaller than the minimum size required. See attached I&E Exhibit 3.

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[redacted] [redacted]

[3] 12-inch IPS SDR 11 plastic pipe has a pipe wall width of 1.160 inches.

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END CONFIDENTIAL

143. During investigation of the joint failure, the pipe would spring apart when cut, indicating that the pipe was under significant tensile stress.

IV. ALLEGED VIOLATIONS

144. All allegations in paragraphs 1 through 143 are incorporated as if fully set forth herein.

145. A natural gas release on Respondent's MCTA Project resulted in a fatality, injuries, property damage, evacuations, and loss of service.

146. The primary cause of the natural gas release was a failed butt fusion. Contributing to the butt fusion failure was a substandard butt fusion, tensile stresses, use of an unapproved butt fusion machine without procedures for use of that machine in place, a failure to update procedures, and a failure to train personnel and contractors on the most up to date procedures.

147. Respondent and its contractor permitted the installation of six (6) butt fusion joints that were visually unacceptable due to either miter or improper bead size, including the failed butt fusion joint.

148. Respondent failed to bring its procedures up to standard as established by ASTM F2620-12 and completed part of the MCTA project, including the failed butt fusion joint, under the outdated procedures.

149. Respondent and its contractor used a butt fusion machine that was not approved by Respondent's procedures and did not have established procedures for the use of this type of butt fusion machine.

150. Respondent operated a 2-inch mainline and 10 service lines in the Tobyhanna System at a pressure exceeding the maximum allowable operating pressure.

COUNT ONE

151. All allegations in paragraphs 1 through 150 are incorporated as if fully set forth herein. Respondent operated pipeline in the MCTA Project and Tobyhanna system that were not designed, installed, constructed, initially inspected, or initially tested in accordance with 49 CFR §§ 192.1, *et. seq.*, in that Respondent permitted the installation of six (6) butt fusion joints that were not visually acceptable, installed without procedures, and installed under outdated procedures, and/or operated pipeline above maximum allowable operating procedures. If proven, this is a violation of 49 CFR § 192.13(a) (General Requirements).

COUNTS TWO THROUGH SEVEN

152. All allegations in paragraphs 1 through 151 are incorporated as if fully set forth herein. Respondent and its contractor failed to inspect and/or improperly inspected no less than six (6) visually unacceptable butt fusion joints that were installed in the MCTA Project, in that the failed butt fusion joint had a bead size smaller than that permitted by its own procedures and five (5) other butt fusions were mitered. If proven, this is a violation of

49 CFR § 192.273(c) (Joining of Materials Other than by Welding - General) and 49 CFR § 192.305 (Inspection: General).

COUNTS EIGHT THROUGH TWELVE

153. All allegations in paragraphs 1 through 152 are incorporated as if fully set forth herein. Respondent and its contractor permitted the installation of plastic pipe that was joined by miter joint, in that no less than five (5) joints installed in the MCTA Project were mitered. If proven, this is a violation of 49 CFR § 192.281(a) (Plastic Pipe – General).

COUNTS THIRTEEN AND FOURTEEN

154. All allegations in paragraphs 1 through 153 are incorporated as if fully set forth herein. The Pipeline and Hazardous Materials Safety Administration ("PHMSA") promulgated amendment 192-124, which required operators to amend their procedures to incorporate ASTM F2620-12 by January 22, 2019, under 49 CFR 192.281(c)(1). Respondent did not incorporate ASTM F2620-12 into their procedures by January 22, 2019, completing parts of the MCTA Project, including the failed butt fusion joint, under outdated procedures. Respondent's procedures fell short of ASTM F2620-12 in the areas of cleaning, facing, heating, holding time, and cooling time. If proven, this is a violation of 49 CFR § 192. 281(a) (Plastic Pipe – Heat Fusion Joints) and 49 CFR § 192.303 (Compliance with Specifications and Standards).

COUNT FIFTEEN

155. All allegations in paragraphs 1 through 154 are incorporated as if fully set forth herein. The 12-inch HDPE pipe installed along Lower Swiftwater Road as part of the MCTA Project was under significant tensile stresses, as observed when the pipes were cut apart. If proven, this is a violation of 49 CFR § 192.321(c) (Installation of Plastic Pipe).

COUNT SIXTEEN

156. All allegations in paragraphs 1 through 155 are incorporated as if fully set forth herein. Respondent and its contractor used and permitted the use of a McElroy DynaMC 412 HP (Hand Pump) for the completion of butt fusion joints on the MCTA Project. The McElroy DynaMC 412 HP (Hand Pump) is not approved for use in the creation of butt fusions under Respondent's procedures, as it has a different setup and fusion processes than the McElroy Rolling Type 412 butt fusion machine approved by Respondent's procedures, nor has Respondent established procedures for how to successfully complete a butt fusion on a McElroy DynaMC 412 HP (Hand Pump) or similar machine. If proven, this is a violation of 49 CFR § 192.605(a) (Procedures manual for operations, maintenance, and emergencies).

COUNT SEVENTEEN

157. All allegations in paragraphs 1 through 156 are incorporated as if fully set forth herein. Respondent's procedures for determining drag pressure are not applicable to the McElroy DynaMC 412 HP (Hand Pump) due to configuration differences and Respondent is unable to demonstrate how drag pressures and fusion pressures were calculated and used with the McElroy DynaMC 412 HP (Hand Pump). If proven, this is a violation of 49 CFR § 192.605(a) (Procedures manual for operations, maintenance, and emergencies).

COUNT EIGHTEEN

158. All allegations in paragraphs 1 through 157 are incorporated as if fully set forth herein. Respondent and its contractor failed to follow Respondent's procedure at GOM 25.10.10, Section 6.12, in that Respondent and its contractor failed to verify the bead size of the failed butt fusion joint and permitted that joint to be installed when the bead size was 1/8-

inches, which was smaller than the size required. If proven, this is a violation of 49 CFR § 192.605(a) (Procedures manual for operations, maintenance, and emergencies).

COUNT NINETEEN

159. All allegations in paragraphs 1 through 158 are incorporated as if fully set forth herein. Respondent operated a segment of steel or plastic pipeline in excess of the maximum allowable pressure, in that Respondent permitted main ID 4-599-9923 1805, a 2 inch pipe without pipe specifications or pressure test documentation, and ten (10) other services, with MAOP's less than 80 psig, in the Tobyhanna System to be operated at 80 psig. If proven, this is a violation of 49 CFR § 192.619 (Maximum Allowable Operating Pressure – Steel or Plastic Pipeline).

COUNT TWENTY

160. All allegations in paragraphs 1 through 159 are incorporated as if fully set forth herein. Respondent did not have procedures in place to record the maintenance of equipment used in joining plastic pipe in accordance with the manufacturer's recommended practices, in that Respondent is unable to identify the make, model, calibration settings, or maintenance history of the machines used to complete butt fusions on the MCTA Project. If proven, this is a violation of 49 CFR § 192.756 (Joining Plastic Pipe by Heat Fusion: Equipment maintenance and calibration).

COUNT TWENTY-ONE

161. As set forth in paragraphs 151 through 160, *supra*, Respondent failed to furnish and maintain adequate, efficient, safe and reasonable service and facilities and make such repairs, changes, alterations, substitutions, extensions and improvements in or to it service and facilities necessary or proper for the accommodation and safety of its patrons,

employees and the public, thereby placing the safety of its customers, employees and the public in danger. If proven, this is a violation of 66 Pa.C.S. § 1501 (character of service and facilities).

V. REQUEST FOR RELIEF

162. Due to the failure of Respondent to properly complete the plastic butt fusion on the 12-inch plastic pipe, the failure to identify and remove defective fusion joints, the failure to follow its procedures, and the failure to keep those procedures current with ASTM F2620, which resulted in the loss of life and damage to property and the operation of pipeline over the maximum allowable operating pressure as set forth herein, I&E proposes that Respondent pay a total civil penalty of One Million, Six Hundred Thousand Dollars ($1,600,000.00). The civil penalty shall not be tax deductible pursuant to Section 162(f) of the Internal Revenue Code, 26 U.S.C.S. § 162(f) or passed through as an additional charge to UGI Gas customers in Pennsylvania.

163. In addition to the civil penalty, I&E proposes the following corrective actions:

a. UGI may not recover the costs associated with the below identified corrective actions from ratepayers.

b. UGI must incorporate into their procedures and bring said procedures up to date with the most current version of ASTM F2620 that has been adopted by PHMSA. This shall include, but not be limited to, those sections as identified as being deficient above. UGI shall keep their procedures up to date with all future versions of ASTM F2620 as adopted by PHMSA.

c. UGI shall create a process to increase the likelihood of successful fusions in conjunction with UGI's testing facility. UGI should require each butt fusion qualified contractor or UGI Personnel to make a specimen joint for destructive testing to ensure the integrity of the joint using the actual material and fusion equipment to be utilized with the same environmental conditions to be found on site. This specimen joint should be completed with each size pipe to be used on the job with each applicable fusion equipment to be used on the job. UGI should determine the interval and frequency of this process.

d. UGI management must determine and implement measures designed to reduce the risks from failure of its gas distribution pipeline by creating a process to provide Quality Assurance and Quality Control of construction practices and construction oversight by a group separate and different from the construction inspectors. UGI shall develop effective span of control and inspection frequency interval metrics for in-field inspectors and for quality assurance/quality control personnel.

e. UGI shall require verification that the hydraulic butt fusion equipment to be used on the project is listed in UGI's standards. The machine information, including but not limited to make, model, and calibration settings, used for each fusion project should be recorded and preserved for future review and use.

f. UGI shall incorporate into training and qualifications, for their contractors and personnel, the use of approved McElroy Butt Fusion

Units. Training should include the identification of unapproved fusion machines. This process will be incorporated into UGI's quality assurance/quality control process.

g. UGI shall incorporate into its procedures how and when to use the fusion pressure application referenced in GOM 25.10.10. UGI must train all contractors and UGI personnel how to use the fusion pressure application. UGI shall ensure that said fusion pressure application is available to all contractors and personnel who would be required to use said application.

h. UGI shall require the fusion pressure used on all butt fusion machines be recorded for each pipe diameter and Standard Dimension Ratio (SDR) on a project. UGI shall verify the fusion pressure used in the field is the appropriate fusion pressure required per pipe specification.

i. UGI must incorporate into their procedures, requirements to record the drag pressure used in butt fusions. This process shall be used to assure drag was properly accounted for. This process shall be incorporated into UGI's quality assurance/quality control process.

j. UGI shall require the use of a datalogging device with hydraulic joining equipment to record the critical fusion parameters of pressure, temperature, and time for each joint. This process shall be incorporated into UGI's quality assurance/quality control process. UGI's quality assurance/Quality Control process shall review the data logger information to verify each joint was completed within parameters.

k. UGI shall qualify and train inspectors to the same fusion qualifications as the fuser completing the hydraulic butt fusion joint.

l. UGI must implement measures that provide a high level quality assurance quality control oversight program specific to second party contractors and second party inspectors to ensure the integrity of its system is not compromised.

m. For all pipeline that was installed as part of the Monroe County Transit Authority (MCTA) Project, and which is still in operation, UGI shall develop a plan to review all fusion joints and the overall construction quality for the sections of pipeline not yet replaced. UGI shall identify and implement measures to address any integrity issues which may be of concern. UGI must advise the I&E-Safety office of field review dates, findings, and any related field work or remediation.

n. UGI must continue to report plastic fusion failures to I&E-Safety within 8 hours of suspected fusion failure discovery. This notification should be made to the local I&E Safety supervisor and I&E manager via email. Any failed fusion shall be kept for lab testing.

WHEREFORE, the Pennsylvania Public Utility Commission's Bureau of Investigation and Enforcement hereby requests that the Commission: (1) find UGI Gas to be in violation of the Public Utility Code, Commission regulations, and/or Code of Federal Regulations for each of the twenty-one (21) counts set forth herein; (2) impose a cumulative civil penalty upon UGI Gas in the amount of One Million, Six Hundred Thousand Dollars ($1,600,000.00); (3) direct UGI Gas to perform each of the corrective actions detailed in this

Complaint; and (4) order such other remedies as the Commission may deem to be appropriate.

Respectfully submitted,

Colby Widdowson
Prosecutor
PA Attorney ID No. 326185

Michael L. Swindler
Deputy Chief Prosecutor
PA Attorney ID No. 43319

Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Dated: December 19, 2023

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, Bureau of Investigation and Enforcement, Complainant	: : : :	
v.	:	Docket No.: C-2023
UGI Utilities, Inc. (Gas Division), Respondent	: : :	

VERIFICATION

I, Jim Harchar, Fixed Utility Valuation Engineer, hereby state that the facts above set forth are true and correct to the best of my knowledge, information, and belief and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: December 18, 2023

Jim Harchar

Jim Harchar
Fixed Utility Valuation Engineer
Pipeline Safety Division
Bureau of Investigation and Enforcement

I&E
Exhibit 1


314
Lower Swamp Water Rd
Approximate Failure Location
Exxon
Gas station
611
314
314
sanofi welcome center

I&E
Exhibit 2


UGI


T.O.P.

I&E
Exhibit 3


2
FT. & IN.
INCHES


2
FT. & IN.
INCHES

I&E
Exhibit 4

I&E
Exhibit 5

I&E
Exhibit 6


EVIDENCE TAG
59.5


NOTICE


E5+03

I&E
Exhibit 7

ARM Group LLC
Engineers and Scientists

March 26, 2021

Mr. Robert Horensky, Manager Safety Division
Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission
400 North Street
Harrisburg, PA 17120

Re: Geotechnical Site Evaluation
Lower Swiftwater Road
Gas Release Incident
Swiftwater, Monroe County, PA
ARM Project 180479

Dear Mr. Horensky:

ARM Group LLC (ARM) is pleased to present the results of our review of available information and site visits at the site of a gas release incident on Lower Swiftwater Road, in Swiftwater, Monroe County, Pennsylvania. The incident, which included an explosion, was located to the northeast of the intersection of Lower Swiftwater Road and State Road 611 and just north of the Sanofi Welcome Center.

Based on information provided by others, ARM understands that the natural gas release incident occurred on December 25, 2020 and that the release created a hole in the ground which extended to the ground surface. Further, it is understood that a car traveling westbound on Lower Swiftwater Road drove into the area and was thrown several feet from the gas release area either by its own force and/or the force of the gas release itself and the car came to rest on its roof. ARM understands there was at least one fatality and multiple injuries. The pipeline for the natural gas is understood to be HDPE pipe materials.

Review of Incident Photographs and Site Visits

To evaluate conditions at the site, ARM reviewed site photographs taken by others and performed multiple visits to the site of the gas release incident. Photographs reviewed were provided by the Pennsylvania Public Utility Commission (PUC) in late December 2020. It is our understanding that these photographs were taken by representatives of the PUC on the day of the incident and a then a few days following the incident as the area of the gas release was being repaired.

Visits to the site included an initial site visit on December 30, 2020 and a subsequent visit on January 21, 2021. During both visits, Wade Anundson, a Senior Geotechnical Engineer from ARM, met with Michael Chilek and Jim Harchar of the PUC. During the site visits, there were also representatives from UGI Corporation (UGI, the Owner of the subject pipeline) that were available to answer questions about the gas release incident as well as UGI's plans for testing and repairs of the natural gas line. During the visit on December 30, 2020, ARM observed that the area of the incident had been repaired and Lower Swiftwater Road was again open to traffic. During the visit on January 21, 2021, ARM observed that portions of the pipeline were being replaced and the new sections of pipeline were being changed from HDPE to carbon steel. Two excavations were open during the January 21 visit and ARM was able to observe the exposed conditions in both excavations.

ARM's observations from our review of photographs provided by the PUC and from observations and interviews made at the site by ARM personnel are as follows:

- Based on discussions at the site, it is understood that the pipeline was originally installed in the summer. Installation continued through daylight hours, but finished after sunset.
- Based on discussions at the site, it is understood that heavy precipitation preceded the gas release incident and that heavy surface water flows were observed in the incident area, including "a river" of surface water flowing from the north side of Lower Swiftwater Road to the south side of the road near the incident location.
- The failure in the pipeline was at a joint in the HDPE pipe. The failure was a clean break at the joint and a gap of about 1 ¾ to 2 inches was observed (see Photos 1 and 2, below).

Photo 1 – Gas Release Area, December 25, 2020

Photo 2 – Failed Joint

- Observations of the open hole following the gas release incident revealed glacially derived materials (till) and bedding materials for the pipeline. It is likely that some of the till material was native and that some of the materials may have been placed as fill.
- Based on discussions at the site, it is understood that while the hole was open following the incident, a geologist working for UGI probed the hole with a rod and determined that conditions on the south side of the pipeline were significantly easier to penetrate with the rod when compared with the bottom or north side of the excavation.
- A relatively steep slope was noted to the south of the gas release incident area, south of the roadway. Surface erosion was evident along the surface of the slope adjacent to the roadway (see Photo 3, below).

Photo 3 – Slope to South of Gas Release Area

- Observations of the roadway revealed that buried utility line(s) were present in the east-bound lane of Lower Swiftwater Road and there was evidence of cracking of the asphalt along the observable length of the road, towards State Road 611. This was further evident in observations of earlier images of the area as seen in Google Map street-level view. The Google Map images were from July 2019 (see Photos 4 and 5, below).

Photo 4 – Cracking in Roadway Along Utility Trench Limits

Photo 5 – Cracking in Roadway Along Utility Trench Limits, 2019

- Observations of the open excavations during the pipeline repair activities on January 21, 2021 revealed combinations of glacial till as well as bedding materials for the pipeline, consistent with observations made before the pipe was repaired and the hole was filled.
- During observation of the pipeline repairs on January 21, 2021, it was reported that when the HDPE pipe was cut for the repair work at two additional locations, the pipelines split apart and gaps ranging from 1 ½ to 1 ¾ inches were observed, suggesting extensional forces were acting on the pipeline.

Conclusions

Based on ARM's review of site photos from the day of the incident, our observations of the incident area, and our knowledge of the local area, ARM offers the following conclusions.

- The pipeline joint construction was sub-standard. Based on our knowledge of pipeline engineering and construction, a properly constructed joint should not have failed as cleanly as evidenced in Photo 2.
- The pipeline was apparently under significant tension stress at the time of joint failure. This is likely due to the difference in temperatures of the HDPE materials at the time of installation and at the time of the incident. Installation procedures may have also added to the tension stresses. The tension stresses were further verified when the HDPE pipeline was cut in mid-January 2021 during repair activities.
- The pipeline separation does not appear to be related to potential slope instability to the south of the gas release area. This conclusion is based on observations of the roadway

surface that does not show cracking that would be consistent with the type of movement that would induce failure of the pipeline. Cracking in the roadway was not consistent with impact from slope movement; however, it was consistent with cracking that is seen due to substandard compaction of soils above a utility trench as well as normal wear and tear of an asphalt pavement in Northeast Pennsylvania. Further, there was lack of evidence of lateral movement of the pipeline which would be consistent with slope-related movement.

- The cause of the soft soils as reported by the UGI geologist as a result of his probing of materials along the south wall of the open hole at the incident area is unknown. Since the area was patched and covered at the time of ARM's visit, it was not possible for ARM to duplicate the probing results noted by UGI's consultant. It is possible that the cause of the soft soils was due to different materials to the south of the pipeline that may have been a remnant of a previous utility installation. No surficial evidence of soft soil conditions was evident in the area immediately to the south of the gas release.

Based on the information noted above, ARM is of the opinion that the pipeline was in a near-failure condition for some time prior to the gas release incident. Falling temperatures for the weeks leading up to the incident likely increased tensile stresses within the pipeline. Heavy precipitation and the drainage conditions at the site likely lead to zones of perched groundwater in the area near the incident leading to a decrease in soil friction or soil resistance on the pipeline, particularly downslope from the incident location. ARM believes that these factors; the substandard joint construction, the increased tensile stress in the pipe, and a decrease in soil resistance ultimately led to the failure noted on December 25, 2020.

CLOSING

ARM appreciates the opportunity to support PUC on this project and is available for follow up conversation regarding this report. Please contact the undersigned at 484-388-6535 if you have any questions or comments regarding this report.

Respectfully submitted,

ARM Group LLC

Wade Anundson, PE
Senior Engineer

QA Review by Scott Wendling, PG

I&E
Exhibit 8

CONFIDENTIAL

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, Bureau of Investigation and Enforcement, Complainant	: : : :	
v.	:	Docket No.: C-2023
UGI Utilities, Inc. (Gas Division), Respondent	: : :	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing **Formal Complaint (Non-Proprietary and Proprietary Version)** dated December 19, 2023 upon the parties, listed below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a party).

Service by Certified Mail, Return Receipt, and Electronic Mail

Kent D. Murphy, Esq.
UGI Utilities, Inc.
460 North Gulph Road
King of Prussia, PA 19406
murphyke@ugicorp.com

Danielle Jouenne
UGI Utilities, Inc.
460 North Gulph Road
King of Prussia, PA 19406
jouenned@ugicorp.com

Colby B. Widdowson
Prosecutor
Bureau of Investigation & Enforcement
PA Attorney ID No. 326185
(717) 787-2139
cwiddowson@pa.gov