

**U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY**

In the Matter of)
)
)
UGI Energy Services, LLC,) **CPF No. 1-2020-009-NOPSO**
)
Respondent.)

**POST-HEARING BRIEF OF UGI ENERGY SERVICES, LLC
JUNE 11, 2021**

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I. Introduction

Pursuant to 49 C.F.R. § 190.211(g), UGI Energy Services LLC (UGIES or the Company) respectfully submits this post-hearing brief in the above-captioned proceeding. On September 4, 2020, the Pipeline and Hazardous Materials Safety Administration (PHMSA) initiated this proceeding by issuing a Notice of Proposed Safety Order (Notice) to UGIES concerning a liquefied natural gas (LNG) storage tank (Tank 1) at UGIES's Temple LNG Plant in Berks County, Pennsylvania.¹ In the Notice, PHMSA alleged that Tank 1 has two conditions, outer tank shell deformation and gas migration, that may pose an integrity risk to public safety, property, or the environment.² PHMSA proposed that UGIES be required to take certain corrective actions to address the integrity risk allegedly posed by these two conditions.

After receiving the Notice, UGIES asked the Office of Pipeline Safety (OPS) to initiate an informal consultation pursuant to 49 C.F.R. § 190.239(b)(2). The parties commenced that process, but on January 12, 2021, OPS advised UGIES of its decision to terminate any further informal consultation. UGIES responded by requesting an informal hearing before a Presiding Official in the Office of Chief Counsel. The Presiding Official convened the informal hearing on April 6, 2021. On May 10, 2021, the parties provided the Presiding Official with a copy of the transcript and the errata for the record.

Following the informal hearing, UGIES and OPS advised the Presiding Official that the parties had reengaged in settlement discussions. Those discussions remain ongoing, and UGIES is hopeful that the parties will enter into a consent agreement that resolves this proceeding in the near future.

¹ *In the Matter of UGI Energy Services*, Notice CPF No. 1-2020-009-NOPSO (Sept. 4, 2020).

² *Id.*

II. Statement of the Case

OPS bears the burden of proof in this proceeding. To meet that burden, OPS must show that the two conditions alleged in the Notice pose an integrity risk to Tank 1, and that the proposed corrective actions are necessary to remedy those conditions. UGIES respectfully asserts that OPS has not met that burden in the following respects.

OPS has not shown that the outer tank shell deformation poses an integrity risk to Tank 1. The limited evidence that OPS has produced does not substantiate that allegation, particularly when weighed against UGIES's extensive rebuttal evidence. UGIES's evidence includes expert written reports and expert witness testimony demonstrating that the limited areas of deformation have existed for many years without worsening and are within allowable limits. Accordingly, UGIES respectfully requests that PHMSA withdraw the allegation that outer tank shell deformation poses an integrity risk to Tank 1.

UGIES agrees that the gas migration occurring at Tank 1 poses an integrity risk, but not to the extent alleged by OPS. The evidence shows that the inner tank is not compromised, and that small concentrations of gas are migrating from the bottom of the outer tank into certain conduits in the heater system. In the unlikely event that gas is released from a conduit, the existing safeguards provided by the design and construction of the Temple LNG Plant effectively mitigate the risk of ignition, and the results of vapor dispersion modeling show no areas outside the immediate vicinity of Tank 1 would be affected.

OPS has not shown that the proposed corrective actions are necessary to remedy the risk posed by the gas migration occurring at Tank 1. OPS has not produced sufficient evidence to support the proposed tank capacity limitation, the mandatory fitness-for-service assessment, or the open-ended provisions in the proposed remedial work plan requirement. UGIES, on the other hand, has presented extensive rebuttal evidence demonstrating that its alternative corrective

actions—replacement of the heater system and installation of additional gas detection equipment—are appropriate remedies for the identified risk condition. For these reasons, UGIES respectfully requests that PHMSA issue an order adopting the Company’s alternative corrective actions.

III. Discussion and Argument

A. OPS bears the burden of proof in this proceeding.

OPS bears the burden of proof in this proceeding as the proponent of the safety order.³ To meet that burden, OPS must establish that the Tank 1 “has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment,” and that an order should be issued requiring UGIES “to take necessary corrective action[,] . . . includ[ing] physical inspection, testing, repair or other appropriate action to remedy the identified risk condition.”⁴

OPS’s burden of proof consists of two related, but distinct, concepts. The first is the “burden of production,” *i.e.*, which party bears the obligation to come forward with the evidence at different points in the proceeding. To satisfy its burden of production, OPS must present sufficient evidence to sustain the relevant allegations.⁵ The second is the “burden of persuasion,”

³ Under the Administrative Procedure Act (APA), “the proponent of a rule or order has the burden of proof.” 5 U.S.C. §556(d). *See also, In re Air Products and Chemicals, Inc.*, Final Order, CPF No. 4-2013-1001, 2015 WL 6758819, at *3 (D.O.T. Aug. 10, 2015) (PHMSA did not meet its burden of proving a violation when it did not produce “any evidence to support its position”); *In re ExxonMobil Pipeline Co.*, Final Order, CPF No. 5-2013-5007, 2015 WL 780721, at *12 (D.O.T. Jan. 23, 2015) (PHMSA failed to meet burden of proving that certain measures were required under regulations); *In re So. Star Central Gas Pipeline, Inc.*, Final Order, CPF No. 3-2008-1005, 2011 WL 7006614, at *4 and n.16 (D.O.T. Oct. 21, 2011) (finding the evidence insufficient to sustain the allegation); *In re Golden Pass Pipeline, LLC*, Final Oder, CPF No. 4-2008-1017, 2011 WL 1919517, at *5 (D.O.T. Mar. 22, 2011) (PHMSA did not meet its burden of proving that its interpretation of regulatory language was correct); *In re Butte Pipeline Co.*, Final Order, CPF No. 5-2007-5008, 2009 WL 3190794, at *1 (D.O.T. Aug. 17, 2009) (“PHMSA carries the burden of proving the allegations set forth in the Notice, meaning that a violation may be found only if the evidence supporting the allegation outweighs the evidence and reasoning presented by Respondent in its defense.”); *In the Matter of Inland Corp.*, CPF No. 1-2017-5003, Final Order at 3 (Mar. 7, 2018).

⁴ 49 C.F.R. § 190.239(a).

⁵ *See e.g., In re EQT Corp.*, Final Order, CPF No. 1-2006-1006, 2010 WL 2228558, at *6-7 (D.O.T. May 13, 2010); *In re Plains Pipeline, L.P.*, Final Order, CPF No. 4-2009-5009, 2011 WL 1919520, at *4-5 (D.O.T. Mar. 15, 2011); *In re Bridger Pipeline Co.*, Decision on Petition for Reconsideration, CPF No. 5-2007-5003 2009 WL 2336991, at *5-6 (D.O.T. June 16, 2009).

i.e., which party loses if the evidence is closely balanced.”⁶ To satisfy its burden of persuasion, OPS must demonstrate that “the evidence supporting the allegation outweighs the evidence and reasoning presented by Respondent.”⁷

B. OPS has not shown that outer tank shell deformation poses an integrity risk to Tank 1.

OPS has alleged that outer tank shell deformation poses an integrity risk to Tank 1. In determining whether a condition poses an integrity risk, PHMSA is required to consider the following factors: (1) the characteristics of the pipe and other equipment used in the pipeline facility; (2) the nature of the material the pipeline facility transports, the corrosive and deteriorative qualities of the material, the sequence in which the material are transported, and the pressure required for transporting the material; (3) the aspects of the area in which the pipeline facility is located, including climatic and geologic conditions and soil characteristics; (4) the population density and population and growth patterns of the area in which the pipeline facility is located; (5) the likelihood that the condition will impair the serviceability of a pipeline; (6) the likelihood that the condition will worsen over time; and (7) the likelihood that the condition is present or could develop on other areas of the pipeline.⁸

⁶ *Schaffer v. Weast*, 546 U.S. 49, 56 (2005) (citing *Dir., Office of Workers' Comp. Programs, Dep't of Labor v. Greenwich Collieries*, 512 U.S. 267, 272 (1994)); See also, *In re Bridger Pipeline Co.*, Final Order, CPF No. 5-2007-5003, 2009 WL 7796887, at *1 (D.O.T. Apr. 2, 2009).

⁷ *In re Butte Pipeline Co.*, 2009 WL 3190794, at * 1. PHMSA has acknowledged that a respondent will prevail under this standard where its rebuttal evidence is more persuasive than the evidence provided by OPS. *In re ANR Pipeline Co.*, 2012 WL 7177134, at *3 (D.O.T. Dec. 31, 2012) (finding that ANR’s “plausible” explanation regarding the discovery of a reportable condition on its pipeline was sufficient to warrant withdrawal of the allegation of violation because the “Violation Report contain[ed] no evidence which would rebut ANR’s argument”).

⁸ 49 U.S.C. § 60117(m)(2); See also, 49 U.S.C. § 60112(b).

To substantiate its allegation that the outer tank shell deformation poses an integrity risk to Tank 1, OPS offered testimony from two witnesses, Mr. Barry Small and Mr. Chad Hall. OPS also included in its pre-hearing submittal a 2018 inspection report for Tank 1 prepared by Matrix PDM, which offered expert witness testimony on behalf of UGIES. OPS has not presented any other evidence that is relevant to the integrity risk posed by outer tank shell deformation.

As for the witness testimony offered by OPS, Mr. Small indicated that he became concerned about outer tank shell deformation based on information he obtained during a July 2020 specialized inspection, including visual observations, pictures, and measurements.⁹ While not a participant in that specialized inspection, Mr. Hall testified that his concerns about outer tank shell deformation were based on that same information. Mr. Small also testified that not knowing how long the condition had been there, and whether there was a risk of the condition occurring elsewhere, were part of his concern.¹⁰ Mr. Small and Mr. Hall did not submit any written reports or analyses to support their concerns, nor did they provide any evidence about their qualifications, background, or experience with deformation of LNG tanks.

UGIES introduced expert evidence rebutting OPS's allegation that the outer tank shell deformation poses an integrity risk to Tank 1. UGIES submitted three separate expert reports prepared by Matrix PDM describing the results of an external tank inspection, a tank settlement evaluation, and a fitness for service evaluation of Tank 1.¹¹ UGIES also offered expert witness testimony from two Matrix PDM employees, Mr. Rich Insull and Mr. Joseph Hoptay.

⁹ Transcript of Hearing at 17:3-9 (Apr. 6, 2021).

¹⁰ *Id.* at 22:20-23:3 (“So at that time, we had no idea how long the buckling had been there or—and we still don’t. And, you know, when—what kind of degree issue that was. Also, the likelihood of something happening at that tank and the risk of effecting other areas of the facility. So looking at that with the continued operation factors mentioned, it may pose a risk—an integrity risk. And that’s the reason why we issued the NOPS0.”).

¹¹ *See* UGIES Pre-Hearing Exhibits 1-3; *See also*, Transcript at 53:2-8.

Mr. Rich Insull's expert testimony focused on the findings and recommendations in the Tank Inspection Report.¹² Mr. Insull stated that Tank 1 was in good condition¹³ and that Matrix PDM recommended that UGIES conduct a yearly measurement to monitor the deformation.¹⁴ In subsequent testimony, UGIES confirmed that the Company was implementing those recommendations.¹⁵

Mr. Hoptay's expert testimony covered the findings and recommendations in the Fitness for Service Evaluation Report.¹⁶ Mr. Hoptay explained that the purpose of that report was to "establish whether or not the deformations that were noted in the inspections were [a] continuing safety hazard" and whether continued operations were acceptable.¹⁷ Mr. Hoptay described the steps Matrix PDM took in conducting the API 579 Level III analysis and affirmed that a Level III analysis is the most detailed analysis an operator can conduct under API 579. Mr. Hoptay shared his conclusion that the results of that analysis showed that "the shell was acceptable and did not have a safety risk at all."¹⁸ Mr. Hoptay also discussed the recommendations Matrix PDM made to

¹² Transcript, at 58:4-59:9. *See also*, UGIES Pre-Hearing Exhibit 1.

¹³ *Id.* at 58: 16-17.

¹⁴ *Id.* at 58:16- 59:5-7.

¹⁵ *Id.* at 59:19-22.

¹⁶ *Id.* at 60-64. *See also*, UGIES Pre-Hearing Exhibit 3.

¹⁷ Transcript, at 60:18-22.

¹⁸ *Id.* at 64:2-3.

UGIES to monitor the buckling,¹⁹ and UGIES affirmed in subsequent testimony that it is implementing those recommendations.²⁰

Mr. Hoptay's expert testimony also covered the findings and recommendations in the Tank 1 Foundation Settlement Evaluation.²¹ The purpose of the report was to evaluate whether the settlement of the foundation was within the recommended limits of API 625.²² Mr. Hoptay testified that he reviewed 20 years of survey data provided by UGIES, and that in his expert opinion the settlement was within the range allowable by code for uniform settlement, planar tilt, and circumferential differential settlement.²³ Mr. Hoptay also testified that if the settlement is "within those allowables . . . it does not affect the tank adversely."²⁴

In responding to questions raised by OPS about the need to conduct physical testing to confirm the grade of the steel used to construct Tank 1 as part of the Fitness for Service Report,²⁵ Mr. Hoptay explained that the material was identified on the construction drawings and therefore there was no need to do physical testing.²⁶ Mr. Hoptay also stated that it is not standard engineering practice to conduct physical testing to confirm the grade when the Company has the construction drawings.²⁷ Mr. Hoptay stated that "with the drawing that we have, and with the knowledge that's

¹⁹ *Id.* at 64:6-18.

²⁰ *Id.* at 65:10-66:12.

²¹ UGIES Pre-Hearing Exhibit 2.

²² Transcript, at 67:1- 68:7.

²³ *Id.* at 67:22-68:4.

²⁴ *Id.* at 68:20-69:1.

²⁵ *Id.* at 75:4.

²⁶ *Id.* at 75:10-14.

²⁷ *Id.* at 75:10-11.

typically what was done at that period of time, I was confident that the 131 B was, indeed, the material that was used.”²⁸ OPS has not introduced any evidence that undermines Mr. Hoptay’s expert testimony on these points.

Regardless of whether OPS acted reasonably in issuing the Notice based on the information obtained during the 2018 specialized inspection, the record clearly demonstrates that there is no integrity risk to Tank 1 from outer tank shell deformation. OPS has not produced any additional evidence to substantiate its allegation that an integrity risk exists, and UGIES has presented extensive rebuttal evidence, including expert reports and expert witness testimony demonstrating that the limited areas of deformation have existed for many years without worsening and are within allowable limits. UGIES’s expert witnesses provided thorough responses to OPS’s questions, and OPS cannot meet its burden of proof purely through speculation or conjecture.²⁹ OPS must present evidence that is “reliable, probative, and substantial” to support its allegation.³⁰ As the record does not contain that evidence, UGIES respectfully requests that PHMSA withdraw the allegation that outer tank shell deformation poses an integrity risk to Tank 1.³¹

²⁸ *Id.* at 78:3-6.

²⁹ *U.S. Steel Mining Co. v. Director, Office of Workers’ Comp. Programs*, 187 F.3d 384, 389 (4th Cir. 1999); *Ward v. N.L.R.B.*, 462 F.2d 8, 13 (5th Cir. 1972) (citing *N.L.R.B. v. Mac Smith Garment Co.*, 203 F.2d 868, 871 (5th Cir. 1953)). In the former case, *U.S. Steel Mining Co. v. Director, Office of Workers’ Comp. Programs*, the Fourth Circuit explained that “to prove by a preponderance of the evidence each element of a claim before an administrative agency, the claimant must present reliable, probative, and substantial evidence of such sufficient quality and quantity that a reasonable [administrative law judge] could conclude that the existence of the facts supporting the claim are more probable than their nonexistence.” *U.S. Steel Mining Co.*, 187 F.3d at 389. By way of example, the Fourth Circuit further stated that “[i]f a claimant in an agency proceeding had the burden of establishing that a traffic light was green his way, he would not satisfy his burden of proving that fact with testimony that ‘it is possible that it could’ have been green his way. While it is possible it could have been green, it is also possible that it could have been red or yellow or even non-functioning. Because the testimony is entirely speculative, it does not advance the claimant’s case. More importantly, the statement that it is possible that the light could have been green does not exclude, to any degree, the opposite proposition. Therefore, it cannot establish more likely than not that the light was green.” *Id.* at 390-91.

³⁰ *U.S. Steel Mining Co.*, 187 F.3d at 389.

³¹ PHMSA has withdrawn enforcement cases in the past where the region had not provided any “documents,

C. UGIES agrees that the gas migration occurring at Tank 1 poses an integrity risk, but not to the extent alleged by OPS.

OPS has alleged that the gas migration occurring at the bottom of Tank 1 poses an integrity risk. UGIES is not contesting that allegation but has introduced evidence that clarifies the nature and potential severity of that condition. That evidence includes a written engineering analysis and supporting witness testimony from Mr. Derek Schoiack, a 15-year UGI employee who is the Supervisor of Operations Engineering Support for the Temple LNG Plant.³² Mr. Schoiack's engineering analysis and testimony shows that the integrity of the inner tank is not compromised, and that the gas in the heater conduit system presents a minimal safety risk that is within acceptable limits.

Mr. Schoiack explained that he became aware of the gas migration occurring at Tank 1 in 2017 during a corrosion mitigation project on the tank foundation and chime seal.³³ In completing that project, UGIES detected gas at the exterior flange of the chime seal and in the heater conduit system.³⁴ UGIES repaired the chime seal and installed a polymer membrane, referred to as a Sika membrane, to provide an effective barrier to weathering, which is the primary cause for atmospheric corrosion of the chime seal.³⁵ UGIES has not detected any gas concentrations in the chime seal area since performing that repair.³⁶

procedures, interview notes or any other evidence to support the allegation." *In the Matter of Buckeye Partners, LP*, CPF No. 1-2009-5002, Final Order at 8 (May 30, 2012), or where OPS relied solely on the operator's evidence and that evidence did not support the violation. *In the Matter of Inland Corp.*, CPF No. 1-2017-5003, Final Order at 3 (Mar. 7, 2018).

³² Transcript, at 88-157; UGIES Pre-Hearing Exhibits 5, 7.

³³ Transcript, at 90:13-16.

³⁴ *Id.* at 90:17-21

³⁵ *Id.* at 99:11-20.

³⁶ *Id.* at 101:13-18

Mr. Schoiack further explained that there are no indications that Tank 1 is experiencing an inner tank failure.³⁷ With a single containment tank design, an inner tank leak would be detected from an external inspection in either of two ways: (1) by visual inspection of the tank's outer shell for temperature variations (either via thermal imaging or frosting) or (2) through an increased level of boil-off gas during an inventory management only operation.³⁸ UGIES performed both external inspection methods on Tank 1, and the results confirm that inner tank is not compromised.³⁹

Mr. Schoiack explained that no frost formation has been observed on any of the tank penetrations or the outer tank shell,⁴⁰ and that his analysis of the relevant data shows that the boil-off rate for Tank 1 has remained within normal operating limits over time.⁴¹ Mr. Schoiack further stated UGIES has been performing concentration measurements within each heater conduit and correlating the resulting data with the liquid level and operating pressure for Tank 1.⁴² That analysis shows no correlation between the concentration of gas and liquid level of Tank 1, a result that would be expected if the inner tank had been compromised.⁴³ A correlation does exist between the gas concentration and operating pressure of Tank 1, which supports the conclusion that the sole source of the gas migration is from the outer tank.⁴⁴

³⁷ *Id.* at 93:22–98:9.

³⁸ *Id.* at 93:22–94:14.

³⁹ *Id.* at 95:1-11.

⁴⁰ *Id.* at 95:1-5.

⁴¹ *Id.* at 95:6-98:9.

⁴² *Id.* at 97:1-18.

⁴³ *Id.* at 98:1-3.

⁴⁴ *Id.* at 97:15-18.

As for the presence of gas in certain conduits in the heater system, Mr. Schoiack explained that because an LNG tank is used to store a cryogenic product, the portion of the foundation that is in direct contact with soil must be constructed to prevent the cold from entering the soil bearing the tank weight.⁴⁵ A foundation heating system, comprised of a series of conduits or pipes bisecting the tank bottom that contain heat trace cables, is typically installed for that purpose.⁴⁶ In most cases, the heating system is embedded in the upper top surface of the foundation to create a thermal barrier between the cold operating temperatures and foundation supporting the tank.⁴⁷ However, the heating system for Tank 1 is unique in that it is not entirely embedded in the foundation of the tank.⁴⁸ Instead, there is only a sand barrier between the heating system and the bottom plate of the outer tank.⁴⁹ Given the presence of internal corrosion in the conduit system and permeable nature of the intervening sand barrier, Mr. Schoiack testified that it is likely that gas is migrating through the bottom plate of Tank 1 due to a weld failure or corrosion.⁵⁰

Mr. Schoiack discussed the nature and severity of the risk posed by the gas migration in his written engineering analysis and supporting testimony.⁵¹ Relying on gas concentrations measurements taken within each of the conduits over a 12-month period, Mr. Schoiack explained that the condition is largely isolated to the center portion of Tank 1, and that only two of the gas-

⁴⁵ *Id.* at 103:8-12.

⁴⁶ *Id.* at 103: 12-15.

⁴⁷ *Id.* at 103: 15-19.

⁴⁸ *Id.* at 104:2-6.

⁴⁹ *Id.* at 5-6.

⁵⁰ *Id.* at 104:11-21 (as amended by the Errata Sheet).

⁵¹ *Id.* at 105-112; UGIES Pre-Hearing Exhibit 7.

containing conduits would be within combustible limits if vented to the atmosphere.⁵² Mr. Schoiack noted that the risk of ignition would be minimal in a sealed and static environment.⁵³

Mr. Schoiack also stated that Tank 1 has sufficient safety measures in place to effectively mitigate the risks associated with gas migration.⁵⁴ Citing the provisions in the National Fire Protection Association Standard 59-A, “Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG),” an industry standard incorporated into PHMSA’s regulations at 49 C.F.R. Part 193 by reference, and the comparable requirements in the Occupational Safety and Health Administration’s (OSHA) regulations at 29 C.F.R. Part 1926, Mr. Schoiack noted that Tank 1 has a Class 1, Division 2 area classification and is subject to a fifteen (15) foot offset.⁵⁵ Mr. Schoiack further explained that he used a commercial modeling tool approved by PHMSA for vapor dispersion modeling, Phast, to analyze several credible release scenarios, and that the results of the modeling showed that combustible levels of gas would not be present outside of the approved 15-foot threshold.⁵⁶

During his testimony, Mr. Schoiack effectively addressed OPS’s questions about his engineering analysis of the nature and severity of the risk posed by the gas migration occurring at Tank 1. Mr. Schoiack explained to OPS that UGIES’s repair of the chime seal in 2017 had eliminated the previously detected concentrations of gas and successfully restored vapor tightness, and that the purpose of the Sika membrane installation was to mitigate the risk of weather-related

⁵² Transcript, at 106:4-15.

⁵³ *Id.* at 106:13-15.

⁵⁴ *Id.* at 106-112.

⁵⁵ *Id.* at 106:22-107:11.

⁵⁶ *Id.* at 108:11-112:7 (as amended by the Errata Sheet).

external corrosion of the chime seal.⁵⁷ Mr. Schoiack also explained that he used the Phast modeling results to analyze the general risks associated with various credible release scenarios and demonstrate that combustible levels of gas would not be present at or beyond the 15-foot offset for Tank 1, not for purposes of complying with the siting requirements in 49 C.F.R. Part 193.⁵⁸ Mr. Schoiack further stated that UGIES had designed and constructed the area within the 15-foot offset for Tank 1 to avoid potential ignition sources in accordance with the provisions in NFPA 59A.⁵⁹

In responding to other questions from OPS about the potential for gas to migrate from the outer tank into the soil or areas beneath the tank, Mr. Schoiack explained that Tank 1 is located above grade.⁶⁰ Unlike gas leaking from a buried pipeline that follows the path of least resistance to the surface, gas migrating through the bottom plate of an aboveground LNG storage tank is not going to flow down into the soil, particularly when that tank has a vapor space design pressure of 2.0 psig and rests on a concrete slab foundation.⁶¹ There is no credible scientific or technical evidence in the record to substantiate that scenario as being plausible or creating a legitimate risk.

As for the other points raised in OPS's questioning, there is no evidence that contradicts Mr. Schoiack's engineering analysis and testimony on the nature and severity of the risk posed by the gas migration occurring at Tank 1. The only risk identified in the record is the presence of gas in the heater conduit system. There is no evidence indicating that the inner tank is compromised. Nor is there any evidence that gas is migrating through the concrete slab foundation or into the

⁵⁷ *Id.* at 114-115, 118-120.

⁵⁸ *Id.* at 129-132, 134-135 (as amended by the Errata Sheet).

⁵⁹ *Id.* at 133:5-9.

⁶⁰ *Id.* at 123:1-11.

⁶¹ *Id.*

soil, or that the gas present in the heater conduit system would be at risk of ignition even if exposed to the surrounding atmosphere and environment. As previously noted, OPS cannot rely solely on speculation or conjecture to meet its burden of proof and must present evidence that is “reliable, probative, and substantial”.⁶²

D. OPS has not shown that its corrective actions are necessary to remedy the integrity risk posed by the gas migration occurring at Tank 1.

OPS has proposed that UGIES be required to take several corrective actions to remedy the alleged integrity risk to Tank 1. PHMSA’s regulations provide that a safety order may be issued requiring the operator of a facility with a condition that poses an integrity risk “to take necessary corrective action[,] . . . to remedy the identified risk condition.”⁶³ In promulgating these regulations, PHMSA acknowledged that there needs to be a “strong linkage between identified risk conditions and any mandated corrective actions.”⁶⁴ PHMSA also “committed to tailoring any mandatory actions to the nature and scope of the threat.”⁶⁵

OPS cited five factors in the Notice as supporting the need for its proposed corrective actions: (1) “the hazardous nature of the product;” (2) “the characteristics of the geographical area where the LNG facility is located;” (3) “the ongoing construction at the LNG facility which may result in an increased risk of accidental ignition of the migrating gas;” (4) “unknown factors that

⁶² *U.S. Steel Mining Co.*, 187 F.3d at 389.

⁶³ 49 C.F.R. § 190.239(a).

⁶⁴ Pipeline Safety: Administrative Procedures, Address Updates, and Technical Amendments, 74 Fed. Reg. 2,889, 2,890 (Jan. 16, 2009).

⁶⁵ *Id.*

resulted in the buckling of the LNG facility;” and (5) “the likelihood that the issues could affect the safety of other areas of the LNG facility.”⁶⁶

UGIES certainly agrees that there are hazards associated with LNG and natural gas but there are no unusual characteristics about the geographical area in the vicinity of Tank 1 or the Temple LNG Plant. The evidence presented at the informal hearing confirms that there is no ongoing construction at the Temple LNG Plant related to the truck rack expansion project,⁶⁷ and the expert reports and expert witness testimony clearly show that there is no integrity risk to Tank 1 from outer tank shell deformation. Finally, UGIES has presented evidence demonstrating that the risk associated with the gas migration is limited to the heater conduit system and unlikely to affect any other areas of the Temple LNG Plant.

OPS has argued that the corrective actions in a safety order do not need to be narrowly tailored. Specifically, OPS stated at the informal hearing that “UGI has attempted to adjust the standard that we have to meet by saying the corrective actions need to be narrowly tailored.”⁶⁸ OPS further stated that the word “[n]arrowly’ isn’t found anywhere in this regulation, nor is it in the final rule.”⁶⁹ Notwithstanding these statements, the operative language of PHMSA’s own regulation makes clear that corrective actions in a safety order must be necessary to remedy the identified condition. PHMSA has also acknowledged that there needs to be a “strong linkage

⁶⁶ Notice at 4.

⁶⁷ The truck rack expansion project was approved by the Federal Energy Regulatory Commission on June 4, 2021, based on the express finding that “facility has been constructed in accordance with Commission approval and applicable standards and can be expected to operate safely as designed.” *UGI LNG, Inc.*, FERC Docket No. CP17-14, Letter Order at 1 (June 4, 2021).

⁶⁸ Transcript, at 245:16-19.

⁶⁹ *Id.* at 245:19-20.

between identified risk conditions and any mandated corrective actions[.]"⁷⁰ and expressly "committed to tailoring any mandatory actions to the nature and scope of the threat."⁷¹

As to the specific corrective actions included in the Notice, OPS has not met its burden to demonstrate the proposed tank capacity limitation is necessary to remedy the identified risk posed by the gas migration occurring at Tank 1. UGIES presented evidence clearly demonstrating that the amount of LNG in the inner tank has no effect on the concentration of gas present in the heater conduit system. The absence of that correlation shows both that the inner tank is not compromised, and that the proposed capacity limitation is not necessary to address the risk of gas migration. There simply is no link between the level of LNG in Tank 1 and the identified risk condition, let alone the "strong linkage" that PHMSA referenced in the rulemaking process. Accordingly, UGIES respectfully requests that PHMSA not include OPS's proposed tank capacity limitation as a corrective action in the safety order.

Nor has OPS presented sufficient evidence to support the proposed requirement to perform a fitness-for-service assessment. Matrix PDM already performed a fitness-for-service assessment of Tank 1, and the results confirm that outer tank shell deformation is not a safety or integrity risk.⁷² UGIES also presented expert witness testimony from Mr. Rich Insull at Matrix PDM demonstrating that internal tank inspection is not necessary to remedy the integrity risk posed by

⁷⁰ Pipeline Safety: Administrative Procedures, Address Updates, and Technical Amendments, 74 Fed. Reg. at 2,890.

⁷¹ *Id.* During the informal hearing, OPS also argued that the regulations do not allow for monitoring of a condition but rather the condition must be remedied or repaired meaning the condition must be fixed permanently. Transcript at 246:5-12. However, in the interim final rule introducing a safety order as an enforcement mechanism, the Agency specifically stated that "in addition to physical inspection, testing, integrity assessment, and repair, PHMSA will consider ordering an operator to establish procedures for continuous monitoring of pipeline conditions." Pipeline Safety: Administrative Procedures, Address Updates, and Technical Amendments, 73 Fed. Reg. 16,562, 16,564 (Mar. 28, 2008).

⁷² Transcript, at 60-64. *See also*, UGIES Pre-Hearing Exhibit 3.

the gas migration occurring at Tank 1.⁷³ After describing his experience and familiarity with conducting internal tank inspections, and noting that he had recommended that other LNG operators perform internal tank inspections in the past, Mr. Insull testified that in his expert opinion UGIES did not need to conduct an internal tank inspection in this case.⁷⁴

Mr. Joseph Hoptay at Matrix PDM provided expert testimony supporting Mr. Insull's conclusions.⁷⁵ In responding to questions from OPS, Mr. Hoptay explained that internal tank inspections are appropriate to address structural concerns with the inner tank or overall tank.⁷⁶ Given that the gas migration is not due to either of these concerns, Mr. Hoptay stated that an internal tank inspection would serve no useful purpose, and that the fitness-for-service of the outer tank could be established by implementing the other remedial measures recommended by Matrix PDM.⁷⁷ Ms. Angelina Borelli, Director of Origination Pricing and Trading at UGIES, also testified that removing Tank 1 from service to perform an internal tank inspection would cause significant harm to the customers served by the Temple LNG Plant.⁷⁸

⁷³ Transcript, at 225:6-10.

⁷⁴ *Id.* at 224:10-225:10.

⁷⁵ Transcript, at 229:4-231:3

⁷⁶ *Id.* at 229:4-21.

⁷⁷ *Id.* at 230:9-15.

⁷⁸ *Id.* at 232-242; *see also* UGIES Pre-Hearing Exhibit 12. OPS stated during the informal hearing that PHMSA could not consider Ms. Borelli's testimony about the adverse customer impacts that would result from removing Tank 1 from service in issuing a safety order under 49 C.F.R. § 190.239. UGIES notes in that regard that Ms. Borelli's testimony was not offered as evidence for PHMSA to consider in determining whether the gas migration poses an integrity risk to Tank 1 under § 190.239. Rather, Ms. Borelli's testimony was offered as rebuttal evidence to consider in evaluating whether PHMSA had met its burden of proof to demonstrate that its proposed correctives are "necessary" or "appropriate" to remedy that identified risk condition. There is nothing in § 190.239 that prohibits PHMSA from considering her testimony for that purpose, and UGIES respectfully asserts that consideration of adverse customer impacts are particularly appropriate in this case, where corrective actions can be taken to remedy the identified risk condition without creating those impacts.

Finally, OPS has not demonstrated that the proposed remedial work plan requirement is necessary, particularly when compared to PHMSA’s prior statements in the rulemaking history and the evidence presented by UGIES. Many of the provisions in that requirement concern outer tank shell deformation, a condition that the expert evidence clearly shows is not an integrity risk to Tank 1. Other provisions are open-ended and effectively delegate the authority to decide what corrective actions are necessary to the Director. The Associate Administrator is responsible for determining the necessary corrective actions in a safety order proceeding, and PHMSA has “committed to tailoring any mandatory actions to the nature and scope of the threat.”⁷⁹ While the terms of a safety order can certainly afford the Director the ability to exercise a reasonable amount of discretion, OPS has not demonstrated that the proposed remedial work plan requirement is necessary to remedy the identified risk condition, particularly given the compelling rebuttal evidence presented by UGIES.

E. PHMSA should adopt UGIES’s alternative corrective actions in the safety order, which are necessary to remedy the integrity risk posed by the gas migration occurring at Tank 1.

UGIES respectfully requests that PHMSA adopt its alternative corrective actions in the safety order to remedy the integrity risk posed by the gas migration occurring at Tank 1. Those alternative corrective actions include replacement of the heater system and the installation of additional gas detection equipment. UGIES offered testimony from two expert witnesses in support of the heater replacement project: Rich Insull, a Project Manager for Matrix PDM with 36 years of relevant experience,⁸⁰ and Christopher Heinrichs, a Chief Engineer for Matrix PDM

⁷⁹ Pipeline Safety: Administrative Procedures, Address Updates, and Technical Amendments, 74 Fed. Reg. at 2,890.

⁸⁰ Transcript at 54:1; *See also*, UGIES Pre-Hearing Witness Statements.

with over 19 years of relevant experience.⁸¹ UGIES also introduced expert reports with information about the Tank 1 heater system⁸² as well as detailed procedures from Matrix PDM for implementing the replacement project.⁸³ Mr. Schoiack submitted a written engineering analysis⁸⁴ and provided witness testimony in support of the gas detection proposal.⁸⁵

The evidence presented by UGIES shows that the heater replacement project is an appropriate corrective action for remedying the risk posed by the gas migration at Tank 1.⁸⁶ As part of that project, UGIES intends to remove the existing heating cables and any other debris or corrosion present inside the conduits. UGIES would then sleeve the conduits with a continuous run of stainless steel tubing, creating a new enclosure for the heater cables. The stainless steel tubing would be Y-purged with nitrogen to provide a continuously inert environment, establishing a Class 1, Division 2 enclosure environment, and a new heating cable rated for that environment would be pulled through the stainless steel tubing. A seal would be placed at each end of the sleeved conduit to prevent the release of any gas that migrates into the conduits, and a new control system for the heating system would be installed to ensure proper operation. Mr. Insull and Mr. Heinrichs both offered expert testimony confirming that the heater replacement project could be

⁸¹ UGIES Pre-Hearing Witness Statements.

⁸² UGIES Pre-Hearing Exhibits 4, 8.

⁸³ UGIES Pre-Hearing Exhibit 9.

⁸⁴ UGIES Pre-Hearing Exhibit 7.

⁸⁵ Transcript, at 209-214.

⁸⁶ UGIES Pre-Hearing Exhibit 9.

executed safely under the procedures developed by Matrix PDM, and that execution of the project would allow for the continued safe operation of Tank 1.⁸⁷

The evidence presented by UGIES also shows that permanent gas detection equipment can be installed in the vicinity of Tank 1 as an appropriate, complimentary corrective action. As Mr. Schoiack explained in his written engineering analysis and testimony, UGIES intends to install a combination of open-path or point gas detection equipment at appropriate locations around Tank 1. The equipment would be positioned to effectively detect any release of gas from the area of the chime or heater system at the base of Tank 1. UGIES notes that OPS proposed the installation of temporary gas detection equipment as a corrective action in the Notice. The evidence presented by UGIES clearly demonstrates that permanent gas detection equipment can be installed as a complementary measure to the heater system replacement to effectively remedy the risk posed by the gas migration at Tank 1.⁸⁸

With respect to the questions raised by OPS during the informal hearing, UGIES notes that the heater system replacement project would comply with the repair requirements in PHMSA's LNG regulations.⁸⁹ Section 193.2617 states, in relevant part, that “[r]epair work on components must be performed and tested in a manner which: (1) As far as practicable, complies with the applicable requirements of Subpart D of this part; and (2) Assures the integrity and operational safety of the component being repaired.”⁹⁰ As Mr. Insull and Mr. Heinrichs explained in their expert testimony, the repair work on the heater system can be performed and tested in a manner

⁸⁷ Transcript, at 161-196.

⁸⁸ *Id.* at 209-214; UGIES Pre-Hearing Exhibit 7.

⁸⁹ *Id.* at 139.

⁹⁰ 49 C.F.R. § 193.2617.

that, as far as practicable, satisfies the construction requirements in Subpart D of PHMSA's LNG regulations⁹¹ and the applicable provisions in NFPA-59A. When completed, the repair work will also assure the ongoing integrity and operational safety of the heater.

Regarding the applicability of the provisions in API Standard 620, "Design and Construction of Large, Welded, Low-pressure Storage Tanks," UGIES notes that the provision is only incorporated by reference in two of PHMSA's regulations for LNG facilities, 49 C.F.R. §§ 193.2101(b) and 193.2321(b), and only one of those regulations, 49 C.F.R. § 193.2321, is a Subpart D construction requirement that applies to the repairs conducted under 49 C.F.R. § 193.2617. The repair of the heater system for Tank 1 does not implicate the non-destructive testing requirements in 49 C.F.R. § 193.2321 for welds in LNG storage tanks or the provisions in API 620 that are incorporated by reference. Moreover, even if the provisions in API 620 applied, the repair requirements in 49 C.F.R. § 193.2617 make clear that compliance with a construction standard is only necessary *as far as practicable*. Mr. Hoptay's expert testimony, which made clear that API 620 is a design and construction standard not applicable in the circumstances presented, reinforces the conclusion that the proposed heater system replacement complies with PHMSA's regulations.⁹²

Finally, as to OPS's assertions that any corrective actions in the safety order must require UGIES to restore Tank 1 to its original design condition, there is no such limitation in PHMSA's regulations. Section 190.239(a) states that PHMSA may require an operator to perform corrective actions that are necessary or appropriate to remedy the identified risk condition. The evidence demonstrates that the heater system replacement project and permanent gas detection equipment

⁹¹ 49 C.F.R. §§ 193.2301, 193.2303, 193.2304, and 193.2321.

⁹² Transcript, at 147:11-148:9.

are effective mitigation measures. The heater system replacement project will establish a new vapor tight boundary for Tank 1 by using the annular space between the conduits and stainless steel tubing to supplement the containment provided by the outer tank. The amount of annular space remaining after the heater system is replaced will be minimal, and any gas that migrates into that space will be safely contained in the sealed conduits. There is no reason to require UGIES to restore the original vapor tight properties of the outer tank in these circumstances. The identified risk condition, gas migration, can be safely and effectively remedied through alternative corrective actions proposed by UGIES.

IV. Conclusion

Based on the foregoing, UGIES respectfully requests that PHMSA withdraw the allegation that the outer tank shell deformation is a condition that poses an integrity risk to Tank 1. UGIES further respectfully requests that PHMSA modify the corrective actions in the safety order to eliminate the tank capacity limitation, mandatory fitness-for-service assessment, and remedial work plan provisions. Finally, UGIES respectfully requests that PHMSA incorporate provisions for the heater system replacement project and installation of permanent gas detection equipment as proposed by UGIES.

Respectfully submitted this 11^h day of June, 2021



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