

NTSB Request No. 123:

UGI Post Accident Safety Improvements

UGI Response:

At the time of the accident, UGI Utilities, Inc. - Gas Division's (UGI) procedures and programs were in adherence with or exceeded the relevant regulatory requirements and industry standards. While there were no identified shortcomings in UGI's existing procedures and programs, the tragic events of March 24, 2023, prompted UGI to further evaluate its pipeline and public safety procedures. As part of its proactive approach for continual improvement, UGI has undertaken the following enhancements.

Summary of Safety Improvements:

Immediate Operations & Maintenance (O&M) Safety Enhancements Summary:

- Decommission pipelines in impacted area.
- Design and implement new pipelines during the construction season starting Spring 2024.
- Proactively perform leak inspections in the surrounding area utilizing both walking and mobile surveys.

Distribution Integrity Management Program (DIMP) Enhancements Summary:

- Create an electronic data repository and training program for SMEs that utilizes, and documents external knowledge sources related to distribution system risks and threats.
- Implement a probabilistic risk modeling tool that normalizes risk outputs across a granular set of asset types (transmission pipe, distribution pipe, services, regulator stations, etc.).
- Review Aldyl-A assets and define a vintage plastic asset population comprised of plastic pipe and fittings historically installed at UGI and its predecessor companies.
- Create visual tip cards for field personnel identifying the various plastic piping and fittings installed at UGI to increase awareness of different materials and manufacturers of plastic pipe.
- Apply additional preventative measures on this asset population including the following:
 - Opportunistic remediation of Aldyl-A Tapping Tees w/Delrin inserts whenever one is fully excavated.
 - Opportunistic data collection of vintage plastic pipe and fittings to increase UGI's knowledgebase.
 - Enhanced Material Failure metrics to trend failures against install date.
 - Continuous analysis of incoming data on UGI's plastic pipe composition

- Additional P&M as identified by UGI.

Operations and Maintenance (O&M) Procedural Enhancements Summary:

- Implement changes detailed below to streamline UGI's approach to field interaction with Aldyl-A Tapping Tees w/Delrin inserts, vintage plastic pipelines, and steam lines.
 - New procedure (GOM 70.40.30) to standardize the remediation of Aldyl-A "Black Cap" tapping tees with electrofusion repair fittings.
 - Increase orders of Aldyl-A repair fittings (4,150 on order).
 - Improve surveillance for steam facilities, with updated procedures and technical advisory bulletins.
 - Contact customers to identify below-ground steam lines and update public awareness programs to include below-ground steam line awareness (by June 1, 2024).
 - Update procedures for examining exposed plastic pipe with additional guidance (by December 31, 2023).
 - Request guidance material review by AGA GPTC regarding the remediation of Aldyl-A Tapping Tees w/Delrin Inserts.
 - Enhance material failure reporting to include data collection and digitization (by December 31, 2023).
 - Create new retirement guidance for service tees (by December 31, 2023) and add GPS data for retired services.
 - Modify squeeze off procedures for Aldyl-A pipe and tracking of squeeze offs (by December 31, 2023, and September 1, 2024).
 - UGI will increase awareness and understanding of their records revision process by strengthening *GOM 60.30.30 – Examination of Exposed Underground Piping* procedure with additional references and guidance. UGI will Communicate the guidance and embed it in their procedures. (by December 31, 2023).
 - Improved GIS revision and asset data correction process by including a Records Correction Form (by January 31, 2024).
 - Update meter protection criteria in GOM 35.10.10 (effective January 2022), with a forthcoming technical advisory bulletin to reinforce best practices (by December 31, 2023).

Public Awareness Enhancements Summary:

- Review and update communications about gas odor reporting, partnering with a digital agency for a safety campaign, targeting Commercial Industrial Customers, and assessing communications about availability of methane/co detectors.
- Evaluate communications about clearance from heat sources, Design One Call processes, non-English speaking audiences, and how to respond to unmarked facilities.
- Implement a new training program for state police fire investigators, to be reviewed with a group of fire marshals on 10/19/2023 at UGI's Learning Center.

UGI's Next Information Technology Enterprise (UNITE) Summary:

- UNITE is a multi-phase, multi-year business and technology transformation initiative focused on the strategic vision of driving standardization and improvement of business processes through the implementation of new technology solutions.
- Leverage this new technology solution to better collect and report on Aldyl-A Tapping Tees with Delrin Inserts, Material Failure Reporting and Examination of Underground Piping, and Asset Repairs, including the capturing the following data:
 - Each instance of the installation of an Aldyl-A Tapping Tee repair fitting.
 - GPS data capture of retired service tees.
 - Additional asset attributes when Aldyl-A assets are exposed underground.
 - Material Failure Forms directly associated to leaking assets as described in the document above.
 - Squeeze offs of plastic piping to be directly associated to a GIS main segment.

Detailed Safety Improvements:

Immediate Operations & Maintenance (O&M) Safety Enhancements:

Immediately following the accident, UGI instituted the following O&M safety enhancements to manage the integrity of the West Reading natural gas distribution system.

1. Upon making the area of the event safe through valve isolation, the following mains were retired: S 2nd Ave (1968 X-Tru Coat protective pipeline coating (XTC) 4" Steel, 1968 XTC 2" Steel) from Franklin St to Penn Ave, Cherry St (1982 1.25" Polyethylene (PE)) east of S 2nd Ave until its dead end, and Penn Ave (1911 Bare 4" Steel) from 3rd Ave to S 2nd Ave. In August 2023, additional main on Penn Ave (1911 Bare 4" Steel) was retired from 3rd Ave to 4th Ave. (See **Figure 1**)



Figure 1

- a. New mains for S 2nd Ave and the replacement of mains along Penn Ave from Park Rd to S 2nd Ave are currently in design. These projects would be tied together at the intersection of S 2nd Ave and Penn Ave. The Penn Ave Replacement was included in the UGI 2024 Fiscal Year Budget Request and is split into two phases (5th Ave to Park and 5th Ave to S 2nd Ave). UGI expects these projects to commence in the Spring 2024 construction season.
2. UGI conducted a daily walking leak survey in the immediate area around the incident site through September 1, 2023. This walking survey has been conducted between Penn Ave to Chestnut Street and S. 3rd Ave to S. 1st Ave. This survey will continue on a bi-weekly basis until the end of 2023.
 3. Beginning on April 2, 2023, and through September 1, 2023, UGI performed a daily mobile leak survey of all bare steel and plastic mains installed prior to 1989 within West Reading. This enhanced survey encompasses an additional 3 miles of main assets and will continue on a bi-weekly basis until the end of 2023.

Distribution Integrity Management Program (DIMP) Enhancements:

In keeping with UGI's efforts to continuously improve DIMP and relatedly reduce pipeline risk across its distribution system effectively and efficiently, UGI DIMP team reviewed its process and identified various enhancements to be applied to its DIMP.

UGI will enhance the use and documentation of external distribution system knowledge related to risks, threats, mitigation efforts, etc. affecting its distribution system. To accomplish this, UGI is in the process of performing the following:

1. Developing an internal guidance document detailing the external knowledge sources. This document will describe the various sources of external knowledge, obtaining new knowledge, and ensuring UGI employees become aware of such knowledge.
 - a. External knowledge sources include, but are not limited to, PHMSA ADB, PHMSA NPRM, PHMSA FAQ, PHMSA Interpretations, PHMSA Enforcement Actions, NTSB Reports and Recommendations, AGA, API, GPTC. This document will be incorporated into applicable internal manuals by December 31, 2023. An associated form to collect this information will also be included.
 - b. An electronic data repository will be developed and accessible by employees when new external knowledge relevant to the operation and maintenance of UGI assets is obtained. This electronic data repository is expected to be developed by December 31, 2023. This repository will provide an understanding of the new information obtained, the relevant UGI assets, and whether any additional action is required to manage the change.
 - c. Along with the roll out of this new external knowledge review process, a training session will be held with UGI subject matter experts (SME) to explain the new process and expectations. Training will be completed by March 31, 2024.
2. UGI will perform a retroactive review on pertinent past external knowledge sources to ensure that critical information pertaining to UGI's assets has been thoroughly reviewed and vetted by a UGI SME. This review will be on-going throughout the remainder of 2023 and into 2024.

Additionally, UGI has already begun undertaking or identified the following program enhancements. These enhancements will also continue to strengthen UGI's DIMP while aiming to reduce pipeline risk to its distribution system.

3. UGI is implementing a probabilistic risk model to support its DIMP. As of September 15, 2023, UGI has identified and selected a risk management solution vendor to install 3 unique risk models (Transmission, Distribution, Regulator Station). The proposed timeline for this implementation is described below:
 - a. TIMP (Transmission Integrity Management Program) Model Implementation -- October 2023 to August 2024.
 - b. DIMP Model Implementation – September 2024 to August 2025.
 - c. Regulator Station Model Implementation – August 2025 to July 2026.

4. UGI is currently reviewing its inventory of Aldyl-A main and service assets within its distribution system. UGI is performing a DIMP review with internal SME to assess this asset population and the threats and risks it may pose. Through this review, a detailed “Vintage Plastic” asset family will be established. Once defined, UGI will quantify preventative and mitigative measures to undertake on this asset family in an effort to reduce and mitigate identified risks. The review and classification of assets to be included into the Vintage Plastic asset family will be completed by December 1, 2023.
5. UGI is developing an internal guidance document that will provide additional education and background knowledge to UGI employees regarding plastic materials in general and the particular types of plastic materials used in UGI’s distribution system. This will serve as a reference for field employees to aid in the identification of UGI plastic assets. It will also help ensure that appropriate preventative and mitigative actions are taken on UGI assets as specified in applicable Operations and Maintenance procedures. This document will be incorporated into the appropriate UGI manuals by December 31, 2023.

Operations and Maintenance (O&M) Procedural Enhancements:

The following provides a description of the changes being implemented by UGI.

1. Aldyl-A Tapping Tees with Delrin Inserts Repair Standardization
 - a. UGI is creating a new Gas Operations Manual (GOM) procedure 70.40.30, which will establish the requirements for remediating Aldyl-A “Black Cap” tapping tees with an approved electrofusion tapping tee repair fitting. This procedure will identify when installation of the tapping tee repair fitting is required; including when an Aldyl-A tee Black Cap tee is exposed or retired, even if it is not actively leaking, along with detailed instructions for the installation of the repair fitting. UGI intends to mandate the opportunistic remediation of Aldyl-A “Black Cap” tapping tees when they are exposed and remediation is feasible. Moving forward, this procedure will provide the necessary guidance and expectations for remediations to employees.
 - b. UGI is updating various GOM procedures that will refer to the new *GOM 70.40.30* procedure, including *GOM 70.40.10 Pipeline Repair Procedures*, *GOM 70.60.20 Retirement of Facilities*, and *GOM 60.30.30 Examination of Exposed Underground Piping*. UGI SME reviewed our GOM and identified associated procedures referenced as opportunities to increase the awareness and requirements of the new proposed Aldyl-A remediation procedure mentioned in Item 1 above. These procedure enhancements will be issued by December 31, 2023.
 - c. UGI’s Procurement department increased orders of the GF Central Plastics Aldyl-A Tapping Tee repair fitting. To date, an additional 4,150 fittings are on order to be purchased by UGI, and a total of 927 repair fittings are currently available to UGI Field personnel. UGI is also working with the manufacturer of this fitting to increase production levels further ensuring availability of this repair fitting for UGI and the natural gas industry.
2. Continuing Surveillance Enhancements

- a. UGI will supplement its continuing surveillance procedures for steam facilities encountered during normal operations. UGI will increase awareness and understanding of the risks posed by steam lines. UGI will revise *GOM 60.30.30 – Examination of Exposed Underground Piping & 30.10.20 – General Installation Requirements* enhancing its guidance on contacting Engineering when a steam facility is discovered or known to be in close proximity to UGI assets. UGI has also incorporated additional guidance regarding installation clearances near steam lines with the latest update of Design Manual section 10.10.10 - Planning Guidelines. Accompanying the procedural changes will be a technical advisory bulletin communicating the expectations and responsibilities of Field personnel and Engineering when steam lines are in proximity to UGI assets. The advisory bulletin will highlight the new requirements and increase awareness of the potential hazards of foreign steam facilities. These procedural updates and advisory bulletin will be issued by December 31, 2023. This bulletin will be issued and tracked electronically, and its review will be a requirement for all applicable UGI employees.
 - b. UGI is contacting a subset of customers to identify the potential presence of below-ground steam lines. Additionally, UGI will update its public awareness program communications to include guidance to contact UGI if the recipient operates an underground steam line. UGI expects to implement the public awareness program update by June 1, 2024. To date, UGI has identified 34 customers who potentially operate a below-ground steam system. UGI is performing local outreach to these customers to obtain maps, engineered drawings, etc. of these steam systems to evaluate potential facility conflicts between UGI assets and the steam lines. If any potential conflicts are identified, UGI will perform records review, field verification, and remediation, if necessary, to ensure the safety of its distribution system. UGI is using this effort to broaden its outreach to additional customers that could be operating an underground steam system. UGI expects to complete the initial review of the potential 34 steam systems by June 1, 2024.
 - c. UGI will revise its *GOM 60.30.30 – Examination of Exposed Underground Piping* to add additional guidance and requirements when plastic pipe is exposed. This revision will reinforce the requirement to collect information when plastic pipe is exposed underground. The changes will mandate the collection of certain attributes for plastic assets when they are exposed. The enhancements will include additional guidance when examining vintage plastic pipe assets. Accompanying the procedural changes will be a technical advisory bulletin providing further detail on expectations. UGI expects to implement these changes by December 31, 2023.
 - d. American Gas Association (AGA) Gas Piping Technology Committee (GPTC) Outreach: UGI submitted a request to GPTC on September 14, 2023, pertaining to guidance material found under 49 CFR 192.613 – Continuing Surveillance. UGI requested GPTC to review its guidance material recommending Operators to “replace” Aldyl-A Tapping Tees w/Delrin Inserts. UGI will keep the NTSB up to date as GPTC reviews its guidance material. A copy of UGI’s submitted request is attached to this response and can be found in **Appendix A**.
3. Material Failure and Reporting Enhancements
- a. UGI will enhance *GOM 60.70.10 Reporting & Investigation of Material Failures* to require all failed/leaking PE pipe and fitting materials that have been removed from the

ground to be submitted to the Materials Engineer in the Standards & Materials Department. However, damages will continue to be processed and evaluated through Damage Prevention and Claims and incidents will continue to be processed and evaluated through Claims and Legal requirements.

- b. Enhancements to *GOM 60.70.10* will also strengthen metrics and reporting of failures. UGI has SME reviewing the material data to develop a more comprehensive and granular review to identify any significant increase in failures being reported for specific fitting types and/or manufacturers. Identified trends will be reviewed and incorporated into the DIMP. Accompanying the procedural changes will be a technical advisory bulletin providing further detail on expectations. This bulletin will be issued and tracked electronically, and its review will be a requirement for all applicable UGI employees. UGI expects to implement these changes by December 31, 2023.
 - c. UGI is implementing a technology update to its Field Mapping System. The new Asset Data Collection (ADC) process is digitizing the field collection of UGI operations and maintenance asset data. With this roll out, UGI is digitizing and subsequently streamlining its material failure reporting process to ensure consistent and accurate asset data is collected when material failures occur.
 - i. The ADC digital material failure form is a required digital form to be completed in conjunction with all leak repairs when applicable. Currently, UGI captures the data for material investigation failure reports via a paper form and in a database in a SharePoint application. The business transformation by moving to digital forms from a paper form will improve the timeliness of updates and enhance UGI's efforts to efficiently record these reports. This transformation will align this report to the assets so there is a clear record in one database going forward. The consistency between leak and material failure data will provide further insight into material failures of UGI assets and increase the accuracy of reporting and key performance indicators. The roll out of ADC is described in the **UGI's Next Information Technology Enterprise (UNITE)** section below.
4. **Retirement of Service Tees**
- a. UGI will strengthen its GOM procedures *35.20.30 Service Connections and 70.60.20 Retirement of Facilities* by providing guidance for field employees on when to retire, reuse, or replace service tees during a service renewal. Accompanying the procedural changes will be a technical advisory bulletin providing further detail on such expectations. UGI will implement these changes by December 31, 2023.
 - b. UGI will also leverage its new ADC technology solution to capture GPS and attribute data for retired services. This will provide visibility to energized, but retired, service tees still connected to active mains. See the **UGI's Next Information Technology Enterprise (UNITE)** section below for more details.
5. **Squeeze off of Aldyl-A Pipe**
- a. UGI will enhance its squeeze off procedures in *GOM 70.50.10 – Squeeze Off Operations* regarding squeezing off vintage Aldyl-A pipe. These enhancements will include guidance to limit squeezing off Aldyl-A pipe installed prior to 1988 to emergency situations,

requirements to renew Aldyl-A service lines installed prior to 1988 that are squeezed off and will require that all squeeze off locations be documented. UGI plans to track all squeeze off locations electronically in the future as information that will be incorporated into DIMP as a risk factor for every PE pipe segment. Accompanying the procedural changes will be a technical advisory bulletin providing further detail on expectations. UGI anticipates issuing these procedural updates by December 31, 2023. Tracking of squeeze off electronically and incorporating in DIMP will require technology updates and is expected to be complete by September 1, 2024.

6. Geographic Information System (GIS) & Asset Data Revision Enhancements

- a. UGI has a robust records revision request process with instructions for how to revise asset attributes and the associated installation records (as-built sketches, service cards, etc.). This process is referenced in its GOM procedures for locating and damage investigation. UGI will increase awareness and understanding of this process by strengthening *GOM 60.30.30 – Examination of Exposed Underground Piping* procedure with additional references and guidance on the records revision process. UGI expects to implement these changes by December 31, 2023.
- b. UGI has been improving the GIS Revision/Asset Data Correction process throughout the ADC implementation project, which officially commenced in June 2021. An application was developed and implemented at the start of the project that allowed direct, automated communication for record corrections between field employees and GIS. A newly created Records Correction Form is being developed and implemented as part of the ADC project and will be rolled out for use by January 31, 2024. This form will feature more prescriptive asset attribution corrections and more robust automated workflows to streamline the backend revision review and approval process.

7. Meter Protection and Guidance

- a. UGI recently updated its Meter protection criteria in *GOM 35.10.10 – Meter & Regulator Location & Installation* in October 2021 (effective January 2022). This procedure was revised to add a standalone section for meter protection requirements incorporating guidance on meter set protection from the AGA White Paper on Damage Prevention to Meter Sets.
- b. UGI will issue a technical advisory bulletin to increase awareness and reinforce the industry best practice meter protection requirements in the GOM. This bulletin will be issued and tracked electronically, and its review will be a requirement for all applicable UGI employees. UGI will release the advisory bulletin by December 31, 2023.

Public Awareness Enhancements:

Applying API 1173, UGI reviewed the circumstances of this incident to enhance its PAP where applicable. The following provides a summary of UGI's efforts to reinforce and strengthen its education of natural gas safety to affected stakeholders. It should be noted UGI is in the process of evaluating the efforts below. This evaluation includes considerations for affected stakeholders, messaging, and scheduled delivery of communications. UGI will provide an update to these enhancements no later than November 1, 2023.

1. UGI is reviewing and revising its current communications regarding what to do if you smell gas and will update and refresh certain communications including the Scratch and Sniff mailer. The messaging will remain consistent: if you smell gas, evacuate, call 911 or UGI. Revising the Scratch and Sniff brochure will enable UGI to provide additional information in the brochure as needed (i.e., availability of natural gas detectors, emergency preparedness, etc.). UGI expects to complete the review by Spring of 2024 and implement changes for the subsequent mailers. Currently, there is an inventory of mailers that will continue to be distributed prior to the refresh.
2. UGI partnered with a full-service digital, communications and design agency to supplement its focus on natural gas safety with additional clear and consistent messaging. This partnership will assist in raising awareness of UGI through a new safety campaign to educate the general public about natural gas safety. This new safety campaign will emphasize reaching both residents and customers, including expanded Spanish-language communications utilizing both traditional and digital channels. The campaign will include digital billboard signage, a website safety-page refresh (expected completion by Spring of 2024), social media paid advertising, and digital advertising. The billboards and digital advertising will run October 2023 through February 2024. Success will be measured by placement, impressions, clicks, and click through rates. Samples of the messaging concepts can be found in **Appendix B**.
3. UGI is developing new communications targeted at Commercial Industrial Customers and their employees. The content, including a brief safety video, will inform them about what actions to take if they smell gas (i.e., who to call and report it to, etc.). UGI expects to implement this by Spring of 2024. Additionally, businesses will find information on creating their own emergency plans in UGI's customer newsletters and on its social media platforms after UGI reviews the material and implements the changes. UGI will complete the review by November 2024, and will begin implementing the changes immediately thereafter.
4. UGI is evaluating current communications to the affected public to see which communications may be appropriate for us to inform such customers regarding the availability of home/business methane/CO detectors. If deemed appropriate, such messaging will be included in newsletters, as well as social media, in the rotation of other safety information distributed throughout the year. UGI will complete the review by November 2023 and will begin implementing the changes immediately thereafter.
5. UGI is evaluating its communications around clearance requirements and determining where it may be appropriate to add messaging regarding heat sources that could potentially impact plastic gas carrying facilities and/or coatings. UGI expects to complete this review by December 31, 2023, and implement changes by March 31, 2024.
6. UGI is reviewing the Design One Call process and communications to ensure appropriate information is provided regarding clearance requirements and the potential hazards of heat sources on plastic gas carrying pipe or coatings. UGI expects to complete this review by December 31, 2023, and implement changes by March 31, 2024.
7. UGI is evaluating its communications to non-English speaking audiences and considering new and improved ways to reach such audiences including outreach to cultural organizations and/or community events. UGI expects to complete this review by March 31, 2024, and pilot changes by June 30, 2024.

8. UGI is evaluating its procedures pertaining to additional measures to take when un-marked facilities are exposed or discovered, and when the re-notification process is followed but no one has claimed the facility. UGI expects to complete this review by March 31, 2024, and implement changes by June 30, 2024.
9. UGI is developing a new training program specifically designed for state police fire investigators. A draft presentation is expected to be complete by September 30, 2023. Once completed, a date in October 2023 will be scheduled with state police fire investigators to actively review and provide feedback on the presentation content. Once finalized, this would become an annual training offering. This stakeholder group and outreach will be added to UGI's Public Awareness Program.

UGI's Next Information Technology Enterprise (UNITE)

UNITE was established to help UGI realize this strategic vision and was planned for implementation across three phases. Each phase is designed to address risks and capture efficiency and effectiveness opportunities around core enterprise competencies.

The Asset Data Collection (ADC) phase of UNITE commenced in June 2021 and set out to achieve the following business objectives:

- Address operational risks from inconsistent and/or incomplete data.
- Realize efficiencies in field asset data capture business processes.
- Reduce dependency on paper records.
- Increase trust in digitized asset data ahead of Enterprise Asset Management (EAM) and Geographic Information System (GIS) solution implementations.

These objectives are being met through a number of various areas of functional scope described below.

1. Asset Data Quality Assessment & Cleansing

- a. Activities surrounding the investigation, assessment, planning, and cleansing of field asset data and information including spatial data, asset attributes, and the digitization of historical records and documentation of those assets. Results of these efforts included:
 - i. Consolidation of digital asset records, associated with 2,421 miles of main in UGI North (former rate district), into one centralized digital document repository.
 - ii. Digitization of paper records associated with 887 miles of main associated with UGI Central (former rate district) for access in UGI's centralized digital document repository.
 - iii. 291,734 services researched, cleansed, and visualized in the mapping applications for the North and Central (former rate districts), which was not previously available.
 - iv. Updated spatial accuracy for 963,699 feet of main throughout the entire UGI service territory.

2. Mobile Device Upgrade / Deployment

- a. Deployment of mobile devices that enable field capture of asset data at the time the work is done to improve data accuracy. This includes the deployment of mobile field computers/tablets and high accuracy GPS devices to support accurate spatial data collection for UGI's assets as part of new digital as-built workflows.
 - b. Utilization of mobile devices to scan material barcodes, reducing manual entry for key material level attribution (i.e., manufacturer, lot/heat number) as part of new tracking and traceability program.
3. Electronic Asset Data Collection Forms
- a. Digitization of GOM forms for more accurate and controlled field entry. Electronic forms on mobile devices for field workers to collect asset data coupled with field asset tracking and traceability for new and existing assets. New digital forms feature improved end-user functionality through use of:
 - i. Integration with associated asset data reducing manual and duplicative data entry leading to more robust data integrity.
 - ii. Dropdowns, radio buttons and checkboxes, which in many cases include validation logic.
 - iii. In some cases, additional data attribution was identified and included in the forms for collection.
 - iv. Ability to associate photos to the digital record.
 - v. Automated review and approval workflows.
4. Field Map Viewer
- a. Enhanced Map-based viewer for field workers across the company to access and view the same, expanded set of asset data details including links to scanned asset documents. Real time spatial and data updates available to all users for an increased number of assets. System triggered QA/QC workflows.

The ADC project is on track to go-live in the UGI Gas Division in September 2023. Functionality and training rollout will continue into the early calendar year 2024. This technology solution affords UGI the opportunity to enhance asset data collection pertaining to the items above. UGI is streamlining its procedures and backend processes to ensure these enhancements are achieved. UGI expects these enhancements to be completed no later than September 1, 2024.

Appendix A

GAS PIPING TECHNOLOGY COMMITTEE
TRANSACTION PACKAGE

TR Number	
Primary Reference	49 CFR 192.613 – Continuing Surveillance
Secondary Reference	49 CFR 192.617 – Investigation of Failures & Incidents
Submitted on	September 14, 2023
Submitted by	John Toumeh – Manager DIMP/Leak Survey
Purpose	<p>UGI wishes to understand the origin and recommendation referenced in Guidance Material 192.613 Section 3 – PE Pipelines. Specifically, a more comprehensive understanding and basis for the following statement in Section 3(g).</p> <p><i>“DuPont PE tapping tees with Delrin polyacetal inserts were installed in gas systems from the late 1960s to the early 1980s and should be replaced as they are discovered. These can be distinguished by a black cap with male threads and a tan PE body.”</i></p>
Origin/Rationale	<p>UGI is reviewing its procedures and policies surrounding the remediation of Aldyl A Tapping Tees w/Delrin Inserts. In assessing the various threats to this service tee, UGI subject matter experts (“SMEs”) discussed at length, the recommendation to replace these service tees when discovered opportunistically. UGI assumes the word “replace” to mean the physical removal of these service tees when discovered as opposed to abandonment in-place with the tapping tee still connected to in-service main piping. With that in mind, UGI offered the following comments to the recommendation to replace Aldyl A tees.</p> <ol style="list-style-type: none"> 1. Aldyl A tapping tees were typically installed on Aldyl A mains. 2. The removal of Aldyl A Tapping Tees w/Delrin Inserts would require the shutdown of Aldyl A mains. Shutting down Aldyl A mains could create the following issues: <ol style="list-style-type: none"> a. Squeeze off tools could be used to isolate the segment, but squeezing Aldyl A pipe could create additional risks. b. Plastic Tapping and Stopping equipment could be used, but they require additional or larger excavations and multiple fittings would have to be installed on the Aldyl A pipe; this could create additional risks of damage to UGI’s facilities and other parties’ facilities during extended excavation, either due to direct contact, rock impingement, or unsettling of soil. c. Valves could be used to isolate the segment, but that could have a significant customer impact. 3. When the main containing the tee is cut out, the replacement PE piping would require at least two electrofusion or mechanical couplings to reconnect back into the existing main. 4. Replacement of Aldyl A Tapping Tees w/Delrin Inserts would require additional excavation to remove a section of main with the Aldyl A service tee. This requires the soil around the main piping to be disturbed, removed, and re-backfilled; introducing the same risks identified above in Section 2.b. 5. There is at least one electrofusion repair fitting specifically designed for Aldyl A Tapping Tees w/Delrin Insert utilizing the Black Shank Thread Caps. This electrofusion repair fitting has been available to the industry as early as 2007. 6. The electrofusion repair fittings cited in Item 5 above introduces a new end cap on the service tee with contemporary plastic material.

**GAS PIPING TECHNOLOGY COMMITTEE
TRANSACTION PACKAGE**

	<p>Proper installation of this repair fitting removes the opportunity for operator error when re-installing an in-service black shank threaded cap on an Aldyl A Tapping Tee w/Delrin Insert. Additionally, the tower body of Dupont Aldyl A Tapping Tees w/ Delrin Inserts are further reinforced by the installation of the electrofusion repair fitting.</p>
Notes	<p>UGI proposed the GM in 192.613 3(g) be revised to the following or some similar language:</p> <p><i>"DuPont PE tapping tees with Delrin polyacetal inserts were installed in gas systems from the late 1960s to the early 1980s and should be replaced or remediated as they are discovered. These can be distinguished by a black cap with male threads and a tan PE body."</i></p>
Executive Action	
Assigned to	
Ad Hoc Task Group	
Subsequent Action	
Date	Action

Appendix B

CONCEPT 1

