

UGI Utilities, Inc. – Gas Division
UGI Penn Natural Gas, Inc.
UGI Central Penn Gas, Inc.
2017 Winter Reliability Data Requests

October 23, 2017

UGI Utilities, Inc. – Gas Division, UGI Penn Natural Gas, Inc. and UGI Central Penn Gas, Inc. (collectively, “UGI” or “we” or the “Company”) are each a natural gas distribution company committed to delivering reliable, safe and affordable energy to over 600,000 customers in 45 counties in Pennsylvania and one county in Maryland. Safety and reliability are core values at UGI and our system is designed to meet the peak winter needs of our customers.

1. Winter Readiness

UGI continues to make significant investments in infrastructure to improve the reliability, integrity, and safety of our gas transmission and distribution systems. Among peer distribution companies in Pennsylvania, UGI ranks highest for the proportion of its system constructed from contemporary materials. UGI continues to deliver upon its commitment to replace all remaining cast iron mains by 2027 and bare steel mains by 2041. More than 64 miles of cast iron and bare steel mains are planned be replaced before the end of the calendar year 2017.

In advance of the winter season, UGI works to reduce pending leak inventory in order to minimize the number of repairs and the extent of monitoring which would otherwise be required during winter conditions. In addition, over the past year UGI worked aggressively to reduce its total leak inventories. Year over year, total leak levels have been reduced by 14% system-wide.

Before and during the winter frost season, UGI plans to undertake additional and accelerated leak survey measures through the winter of 2017-2018. Commencing after November 1, 2017, a walking leak survey will be conducted over higher risk main facilities as determined by the proximity to buildings, locations under wall to wall paving, amount and classification of open and repaired leaks, and main materials. From January 1 through March 31, 2018 (or earlier due to accumulation of Frost Degree Days), all cast iron will be surveyed with mobile leak detection instruments at least bi-weekly to mitigate the risk of cast iron main breaks due to frost.

In addition to the bi-weekly patrols of all cast iron main, a separate independent third-party contractor will complete monthly leak surveys of high-risk steel and cast iron mains identified through UGI’s segment-based Distribution Integrity Management Plan to mitigate the risk of hazardous leaks occurring under frost cover. Finally, to reduce the risk of wintertime failure of certain mechanically-coupled medium pressure curb valves, targeted leak surveys of service lines known to contain these valves will be conducted prior to the winter frost season.

In late fall UGI issues customer communications to increase awareness of winter hazards. Notices include carbon monoxide awareness, venting of appliances, and avoidance of gas meters while clearing snow, identification of gas odors, and emergency contact information. Subsequently,

throughout the winter, and particularly around major weather events, supplemental winter messaging is issued to customers to reinforce the importance of these messages.

Each fall, coordination meetings and calls are held with large interruptible service customers to discuss interruption plans as weather conditions and system performance may dictate. The general expectations around the timing of interruptions, communication protocols, and the requirements for backup fuel are addressed. At this time the company also holds a collaborative meeting for the Natural Gas Suppliers of the company's transportation customers. Upcoming supply issues related to UGI's transportation programs are discussed.

Notable reliability projects since the prior winter include the following projects:

- In Carlisle and Jim Thorpe temporary LNG facilities are in service to support medium pressure system endpoints.
- In Lancaster, a system reinforcement will increase diversity among supply sources and increase downstream pressures into Millersville.
- Also in Lancaster, the second phase of reinforcement project along Pitney Road will improve downstream system pressures to Willow Valley.
- In Easton, a high pressure reinforcement project will be completed before the Winter Heating season.
- In the Muncy area, a high pressure reinforcement has been commissioned to improve system pressures to communities including Milton, Lewisburg, Northumberland, Sunbury, and Shamokin Dam.
- Increased maximum operating pressure and capacity of Uniondale line supporting communities in Lackawanna and Luzerne Counties.
- Section of high pressure steel replaced along Route 54 in Danville restoring full winter capacity for this area.
- In Clearfield improvements to a high pressure truck line improved system pressures.
- City gate station improvements in Shippensburg and Leesport were commissioned to increase capacity.

2. Employee Safety/Readiness

UGI Gas Control, Operations, Engineering, and other supporting departments play key roles in maintaining the safety and reliability performance of our distribution systems, system. From our central control room in Temple, PA, Gas Controllers continually monitor system pressures and

flows at key points within UGI's systems using a Supervisory Control and Data Acquisition ("SCADA") system. Abnormal operating conditions are identified through pre-determined alarm set points and actions are taken to address any alarms as may be appropriate. Engineering utilizes network models to predict system performance under peak operating conditions. Model results are validated against actual system operating conditions using data from SCADA, system regulator station charts, and winter survey gauges. These models form the basis for determining locations where reliability projects required to improve system pressures or increase system capacity as may be needed to maintain design criteria.

Annual winter planning meetings are conducted throughout the company to ensure appropriate preparations have been made prior to the winter season. Emergency scenarios / mock drills are conducted to test winter operational protocols and incident command structure. Additionally, winter planning meetings cover a wide range of preparedness topics including:

- Employee safety considerations – winter operational protocols
- Changes to system operations – new & replaced assets
- System reinforcement projects – completed / pending
- Facilities management – snow removal, maintaining access to critical facilities
- Locations of emergency materials
- Communications protocols
- Pennsylvania Public Utility Commission reporting requirements & courtesy notifications
- Mutual aid protocols – requesting & providing resources
- Gas control alarm management & system change protocols
- Dispatch of peaking assets – propane/air, LNG, and communication protocols
- Interruptible customer notifications
- Fleet availability and preparedness
- Enhanced Emergency Response Plan

UGI closely monitors weather forecasts from the National Weather Service and State Weather Bulletins throughout the winter and adjusts staffing plans in response to adverse weather forecasts. UGI currently subscribes to two weather services, MDA EarthSat and Telvent DTN. On cold weather mornings, crews are staged at critical system facilities to ensure proper equipment operation during peak periods of demand. System low points are monitored via SCADA systems or survey gauges. Shifts are implemented to ensure crew availability for weather related emergencies. In advance of forecasted snow and ice precipitation, vehicles, equipment, and personnel are staged geographically to minimize the distances travelled over treacherous roadways.

UGI participates in both the American Gas Association ("AGA") and Northeast Gas Association ("NGA") Mutual Assistance Programs to ensure that supplemental resources are available in the event of a large scale emergency. The AGA Mutual Assistance Program is intended to supplement local, state and regional mutual assistance programs in the event of man-made or natural disasters that result in widespread service interruptions or damage to gas pipeline infrastructure. A mock drill of the Mutual Assistance Program was held in October.

UGI has finalized a new Emergency Response Plan which will be released before winter 2017-18. Training will occur for the operations and engineering workforce prior to December 31, 2017. The new emergency plan is a stand-alone document that reinforces the company's support of the Incident Command System for managing unplanned events or outages.

UGI continues to leverage new technologies to support system reliability and ongoing readiness. During the past year two inline cameras were purchased for internally inspecting facilities to identify potential blockages (water, debris, etc.) compromising distribution system capacity. As well, UGI has installed ClearScada, a centralized system that Operations, Measurement & Regulation, and Engineering personnel can use to remotely monitor system pressures and more rapidly respond during peak periods. Lastly, UGI recently deployed a GPS enabled Fleet solution for tracking vehicle locations. This information is being utilized to identify and deploy the closest qualified resources to respond during an emergency.

UGI has over 600 trained and qualified field employees dedicated to emergency response addressing system reliability, performing system maintenance, and completing emergency capital improvements. In addition, UGI utilizes a large complement of contractor resources to supplement our internal workforce. Annually, staffing levels and varied shifts are reviewed and prospectively adjusted, as required, to meet the needs of the business. During peak periods both supervisory and field resource levels are further flexed to maximize Operation's coverage.

3. Communications and Outreach

UGI's Communications, Community Relations and Outreach Programs are designed to keep customers, employees, community residents, elected and appointed officials, media and other key members of the public informed on the safe use of energy, energy conservation, and Company-sponsored programs available to assist customers in managing their bills. These programs also provide key audiences with links and information on how to access additional resources from the Company, the industry as well as from government sources.

Communications to key audiences are delivered through a variety of traditional, web and social media channels.

On September 5, 2017 UGI successfully launched its new customer relationship and billing system. The customer relationship and billing system provides UGI customers with easier access to their accounts, increased convenience, and more mobility.

Communication Channels and Tools

The UGI Communications, Community Relations and Outreach Programs increase information flow to customers and communities during the cold weather season. In particular, advisories regarding the safe use of energy, and recommendations and tips on staying warm inside the home are provided on an accelerated basis. When service area communities experience extreme weather or when emergency situations arise, special Communications, Community Relations and Outreach Program initiatives and programs are delivered to assist customers in responding to the condition or situation. The communication channels and tools UGI utilizes include:

- UGI’s Call Center, including use of our outbound dialer
- Bill messages and inserts
- UGI website content, outbound email, and social media platforms including:
 - Facebook
 - Instagram
 - Linked-In
- Proactive media, including public service announcements
- Paid web, broadcast and print advertising, and
- Personal contacts, including face-to-face sessions, UGI-sponsored community meetings, and participation in widely-attended customer awareness events.

Weather Event and Emergency Communications

In the event of an emergency event, it is UGI’s practice to take a broad-front, integrated external communication approach to provide customers and communities with critical information. For example, the UGI Call Center has an outbound dialer which can be used to proactively communicate with customers in targeted areas. Outbound dialer calls provide messages that include important safety, energy use, or service-related information.

In addition, the UGI phone system pre-recorded messages and prompts can be adjusted and updated to speed response to emergency calls by limiting non-emergency calls. Other messages can be added to the system providing important information to customers concerning the emergency situation, as well as informing callers of resources or options available to access additional information. To manage increased call volumes that may arise during an emergency, the Call Center is positioned to implement enhanced staffing to expand live operator coverage to a 24 hour a day, seven-day-a-week schedule, if necessary.

Customers can also interact with Customer Service, Communications and Community Relations staff via social media. Customer posts on social media platforms are monitored and specific customer concerns are individually addressed to ensure the concerns receive a timely response

Key information also is made available to customer and community audiences through public service announcements released to media outlets; on the UGI website; via outbound email; and on UGI’s social media channels on Facebook, Twitter, Linked-In and Instagram.

LIHEAP Communications

At the beginning of each heating season, UGI extensively promotes the availability of customer assistance programs to eligible customers. Immediately prior to the State-determined program opening date, UGI announces and participates in events promoting the Low Income Home Energy Assistance Program (LIHEAP). In its communications, UGI uses the following channels to urge qualifying customers to apply for LIHEAP, including:

- Media announcements

- Bill inserts
- Outbound telephone campaigns
- Special mailings
- Website updates that include a link for customers to print a LIHEAP application

All UGI Call Center representatives attend special training sessions on LIHEAP, and are provided scripts to ensure customers receive consistent information regarding LIHEAP.

UGI operates its own “hardship” fund for qualifying customers experiencing difficulty in paying their utility bills. This fund is called Operation Share. UGI donates corporate funds to Operation Share, and solicits donations from our customers, employees and others in the community. UGI promotes Operation Share via customer inserts, direct communications with qualifying customers and the UGI website. UGI provides information on its customer assistance programs in English and Spanish language versions.

Customer Assistance Program and Bill Payment Communications

As the winter heating season begins, UGI conducts and participates in a number of information sessions aimed at providing customers with resources to assist them in safely using natural gas to heat their homes. These sessions include ‘Be Winter-wise’ events jointly sponsored by the Company, elected and appointed officials, and by community-based organizations.

UGI offers customer assistance programs to qualifying customers experiencing difficulty in paying their bills. Eligible customers can participate in the Company’s Customer Assistance Program (“CAP”). UGI’s CAP program offers qualified, income-eligible customers a more manageable monthly energy bill. UGI provides CAP participants with a personalized, monthly payment amount based on gross income, household size and average bill. In most cases this program makes UGI bills more affordable. Over time, following consistent program payments, participants’ past debt to UGI can be forgiven. Customers interested in more information about the CAP program can learn details via the UGI Call Center, on the Company website, through UGI service territory social agency partners, or by CAP enrollment campaigns conducted by UGI to inform known low-income customers.

The UGI Low Income Usage Reduction Program (“LIURP”), or Weatherization, offers free energy conservation measures to high usage, low income households to help make energy bills more affordable. Possible energy saving measures can include ceiling insulation, floor, duct and hot water pipe insulation, caulking and weather-stripping, gas heater repairs and water flow restrictors. UGI also offers the Rehabilitation Program. This program allows UGI to contribute funding for the installation of approved energy efficient measures at the time of new construction or rehabilitation of an existing property. Through the program, UGI partners with community based organizations throughout the service territory to distribute funds to housing projects. Customers interested in more information about LIURP can learn details via the UGI Call Center, on the Company website, or through UGI service territory social agency partners. Community based organization interested in more information about the Rehabilitation program can learn details via the UGI Call Center or via information posted on the Company website.

UGI conducts a Customer Assistance and Referral Evaluation Services (C.A.R.E.S.) program. CARES can provide referrals to other helpful assistance programs in a customer's community. Referrals can be made to LIHEAP, budget counseling, and Pennsylvania Weatherization or Office of Aging programs. Customers interested in more information about UGI's CARES program can contact the UGI Call Center.

In addition, each year UGI completes a survey of customers whose service has been terminated within the past year. Outreach to these terminated customers includes letters, phone calls, and field visits to provide information regarding available assistance programs in an attempt to get service reconnected. UGI also makes efforts aimed at restoring service to terminated customers collaboratively with community-based organizations throughout the heating season.

Finally, UGI offers payment programs like budget billing and automatic deduction, as well as electronic bill pay options to assist customers in managing bill payments. Information about these payment programs is provided to customers via bill inserts and bill messages, IVR messages to customers calling the UGI Call Center, and on the UGI website. UGI provides information regarding these programs, as well as information on Company customer assistance programs, in English and Spanish language versions.

4. Gas Supply & Planning

UGI's focus for gas supply portfolio planning is to meet the demands of its core market customers throughout the winter, especially on the coldest days when deliveries are the most critical. UGI contracts for primary firm supplies to meet the demands of core market customers not only on a peak day but for sustained cold weather as we experienced in the winters of 14-15 and 15-16. In addition, UGI acquires capacity reserves in the amount of 2.5% of its firm peak requirements. The need for these reserves was highlighted in recent years as a result of force majeure incidents on the Texas Eastern and Transco pipelines. UGI ensures reliability of supplies through diversification, enhanced force majeure language, and requiring primary firm delivery rights for each service.

UGI's supply portfolios are developed and maintained to access a multitude of source points for diversity, liquidity, and reliability. The source points for UGI's gas supplies include the Gulf of Mexico, Louisiana, Texas, Oklahoma/Panhandle region, Appalachian Mountains, Marcellus/Utica Shale region in Pennsylvania, and on-system peaking plants. Where possible, UGI has been shifting its portfolio to take advantage of locations closer in proximity to its service territory like the Marcellus Shale region or on-system peaking plants for economic and reliability benefits. UGI also continues to look for opportunities to build redundancy into the portfolio to enhance reliability and reduce dependencies on a single pipeline.

UGI contracts for firm supply in advance via RFP or other form of competitive bidding as appropriate. The diversity and liquidity which UGI has built into its supply portfolio means that UGI will stand a better chance of obtaining alternate supplies if any particular supply source is impacted by a force majeure event. In the case of storage, UGI buys natural gas and injects it into underground storage fields in the summer. During the winter season, UGI withdraws this gas from the storage fields to supplement base load purchases. UGI requires strict contractual force majeure

provisions to ensure firmness and reliability of supply. These provisions are mandatory in all UGI's contracts and are non-negotiable with suppliers.

UGI's obligation as the supplier of last resort for core market customers is met through the procurement of services that are backed by a physical supply interconnected with UGI's distribution system or with primary firm delivery rights to UGI's city gates. These services include primary firm transportation, primary firm storage, primary firm delivered supply, and primary firm peaking services from a mix of nine interstate pipeline companies and two suppliers. Over the last several years, there has been a notable increase in the number of interstate pipeline capacity constraints which have curtailed holders of capacity with non-primary rights. These constraints have been caused by a variety of factors including extreme cold weather, changing flow dynamics due to Marcellus and Utica Shale, and unanticipated pipeline outages. Most notably, on April 29, 2016, an explosion on the Texas Eastern pipeline near the Delmont Compressor station, triggering a force majeure event that reduced capacity on a major feed to the Northeast by approximately 56%. Primary firm capacity holders will be the first party allocated the available capacity during a force majeure event. All non-primary firm capacity holders will be curtailed to zero before primary firm capacity is reduced. Therefore, UGI's procurement of primary firm, asset-backed capacity is essential for supply reliability, not only during severe cold weather but also in the case of unanticipated pipeline capacity reductions.

In the event of a natural gas emergency where curtailment may be necessary, UGI follows the procedure as defined in its PUC-approved tariff. UGI's priority will be to preserve service for residential and for firm critical and essential human needs commercial customers. To accomplish this, UGI may interrupt all interruptible customers, issue operational flow orders or daily flow directives, or call for voluntary usage reductions by customers.

5. Natural Gas Demand from Electric Generators

UGI's electric generation natural gas customers are on UGI tariff transportation rate schedules and are not classified as core market customers. UGI's priority will be to preserve service for its residential, firm critical and essential human needs commercial customers.

UGI's tariffs include a Gas Emergency Planning section addressing how UGI would potentially curtail service to gas-fired generators in order to protect the integrity of UGI's distribution system to maintain firm service to essential human needs customers. UGI's gas emergency plan includes a customer notification procedure as well as an emergency shutdown procedure. Every effort will be made by UGI to provide the electric generator the opportunity to complete a controlled reduction in demand. However, if the electric generator's usage threatens to jeopardize the integrity of UGI's distribution system, UGI will turn off gas flow to the electric generator.