

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

**In the Matter of the Application of)
Kansas Gas Service Company, a Division)
of ONE Gas, Inc., Regarding the filing of) Docket No. 18-KGSG-317-CPL
its Plan for the Replacement of Obsolete)
Materials in Populated Areas.)**

**COMPLIANCE FILING OF KANSAS GAS SERVICE
FINAL PLAN FOR REPLACEMENT OF OBSOLETE MATERIALS
IN POPULATED AREAS**

Kansas Gas Service, a Division of ONE Gas, Inc., (also referred to as the “Company”) in compliance with the Commission’s Order issued in Docket No. 15-GIMG-343-GIG respectfully submits its Final Plan for the replacement of obsolete materials within Class 3 locations (populated areas) and its plan for increased leak detection of obsolete plastic pipe as ordered by the Commission. The Company states as follows:

1. On November 21, 2018, pursuant to the directives contained in the Commission’s Final Order as issued on September 12, 2017, in Docket number 15-GIMG-343-GIG and in the subsequent *Order Denying Petitions for Reconsideration and Granting Clarification* issued on October 26, 2017, Kansas Gas Service met with Staff to discuss the content of this compliance filing and established that Kansas Gas Service would submit its initial Plan on or before January 24, 2018.
2. On March 15, 2018, Kansas Gas Service met with Staff to discuss the specifics of the Company’s initial Plan and received recommendations for content of the Final Plan.
3. In compliance with the relevant Commission Orders and pursuant to the Company’s informal agreement with Staff, Kansas Gas Service hereby submits its *Final Plan for the Replacement of Obsolete Materials* as attached hereto as KGS Attachment A.

4. Further, in compliance with the relevant Commission Orders, Kansas Gas Service also hereby submits its plan for increased leak detection of problematic obsolete plastic pipe as included in the attached “KGS Attachment A.”
5. Additionally, in compliance with relevant Commission Orders, Kansas Gas Service hereby submits the report of miles of main by material type and location as well as number of services by material type and location attached hereto as “KGS Attachment B.”

WHEREFORE, Kansas Gas Service, a Division of ONE Gas, Inc., respectfully submits this plan to the Commission in compliance with Commission Order for its consideration and approval.

Respectfully Submitted,



Judy Y. Jenkins, KS Supr. Ct. # 23300

Managing Attorney

Kansas Gas Service, a Division of ONE Gas, Inc.

7421 W. 129th Street, Overland Park, KS 66213

Phone: 913-319-8615 / judy.jenkins@onegas.com

KANSAS GAS SERVICE'S FINAL PLAN FOR REPLACEMENT OF OBSOLETE MATERIALS IN POPULATED AREAS

Executive Summary

Kansas Gas Service submits this plan in compliance with the Commission's Orders issued in Docket No. 15-GIMG-343-GIG. This plan is based on Company information known and available to the Company on November 1, 2017.

The Company's systematic accelerated replacement plan¹, as detailed herein, will begin in 2019 and is expected to replace all cast iron mains, bare steel service lines and bare steel mains located in populated areas within 35 years which compares to the 67 years identified by the Commission in its Final Order.² Specifically, for populated areas, all cast iron mains will be replaced by the end of 2019; all bare steel service lines will be replaced by the end of 2024; all unprotected bare steel mains will be replaced by the end of 2028; and all protected bare steel mains will be replaced by the end of 2053. Under this plan, the Company anticipates the continued use of GSRS filings and traditional rate cases to recover its investments in pipeline replacements. This plan also balances the requirement to accelerate the replacement of obsolete pipe with the risk associated with construction quality, coordination with municipalities and bill impacts for our customers.

The Company also submits its plan for increased leak detection of problematic obsolete plastic pipe as ordered by the Commission. After consultation with Staff, Kansas Gas Service has

¹ The systematic accelerated replacement plan should not be confused with a plan to participate in the Commission's Accelerated Preplacement Program ("ARP").

² Final Order, Docket No. 15-GIMG-343-GIG, paragraph 70.

agreed to increase leak detection surveys of obsolete plastic pipe from five (5) years to three (3) years beginning with one-third of total problematic obsolete plastic pipe in 2018.

In response to the request of the Commission's Staff, this filing also provides information identifying the expected residential bill impact that would result from replacement of all bare steel services and bare steel mains within ten years as required by the Commission's voluntary Accelerated Replacement Program ("ARP"). The Company has determined that in most years, the cost per customer would be significantly greater than that allowed by the ARP cap, rendering the use of the ARP infeasible for the Company.

Background

Kansas Gas Service has a history of participating in pipeline replacement programs designed cooperatively with the Commission. To date, Kansas Gas Service has implemented two major programs to address the elimination of bare steel service lines and cast iron mains. Since inception of the service line replacement program in 2011, the Company has replaced on average more than 10,800 service lines annually and over 64,000 service lines in total. Under the cast iron main replacement program, Kansas Gas Service agreed to remove all cast iron pipe by December 31, 2024. The Company is well ahead of this goal with just 18 miles of cast iron remaining in inventory which will be replaced by the end of 2019. In the last five years, the Company has submitted four Gas System Reliability Surcharge ("GSRS") filings and one rate case to the Commission providing evidence of investment of over \$116 million in system replacements.³

³ See, the filings made by Kansas Gas Service in Docket Nos. 18-KGSG-093-TAR, 16-KGSG-104-TAR, 15-KGSG-088-TAR and 14-KGSG-111-TAR. In 2016, Kansas Gas Service filed a traditional rate case rather than a GSRS filing. It is estimated that approximately \$25 million in system replacements occurred during the test year. All amounts exclude investment in government relocations.

The Replacement Plan

The Company's plan for the continued replacement of bare steel services, cast iron mains, and the new requirement for replacement of bare steel mains in populated areas⁴ addresses approximately 12 miles of cast iron mains, over 1,300 miles of bare steel mains, and nearly 43,000 bare steel service lines. The proposed plan will begin in 2019 and balances the desire to accelerate the replacement of obsolete pipe with the risk associated with construction quality, coordination with municipalities and bill impacts for our customers. In Docket No. 12-KGSG-721-TAR, the Commission's Staff recognized that additional factors should be considered when determining the appropriate time-period for completing the replacements.⁵ Additionally, the Company will continue to make use of GSRS filings and traditional rate cases to recover its investments in pipeline replacements.⁶ Given the considerations listed above, Kansas Gas Service anticipates that all cast iron mains, all bare steel mains, and all bare steel services in populated areas will be replaced within 35 years. This replacement plan incorporates a considerable acceleration of the 67-year timeframe estimated by the Commission in its Orders issued in Docket No. 15-GIMG-343-GIG. Additional detail on the schedule of replacement is provided below.

Class 3 Locations:

The Commission requires that Class 3 locations be addressed in this plan. This nomenclature has generally been used with linear assets such as transmission lines. Kansas Gas Service has developed "location types" in alignment with the distribution patrolling and leak

⁴ The Commission's Final Order requires that Class 3 locations be addressed. As will be discussed in this document, this nomenclature is generally used for transmission lines. Kansas Gas Service will use "populated areas" as the descriptor for areas addressed by its plan.

⁵ See, Docket Number 12-KGSG-721-TAR. Staff would have liked for the company to complete replacement of 108 miles of cast iron mains and 40 miles of bare steel mains in less than eight years but agreed that the project management concerns should be acknowledged and factored into the timeframe.

⁶ Additionally, Kansas Gas Service may file an abbreviated rate case(s) if appropriate.

survey requirements in 49 CFR 192 Subpart M which identifies distribution assets as either in or out of business districts. The Company utilizes the following location types:

Metro Core: An active commercial, shopping, or living area; where the Company's natural gas facilities are located under continuous or predominately continuous paving and 4 or more story buildings are prevalent. These areas are only typical of our service territories largest cities where large numbers of the public gather to work, shop, or live. These locations are usually confined within business district polygons. The polygons extend just beyond the last 4 story building, with a buffer extending past the last building to a business district, residential area, grassy area, or to where a street centerline is met to make the polygons contiguous;

Business Districts: An active commercial area where the Company's natural gas facilities are located under continuous or predominately continuous paving. This includes areas where the majority of buildings are used for commercial, religious, educational, health, shopping, or recreational purposes;

Public Buildings: Any buildings that are intended for a high density of human occupancy (500 people or more) that are available to the public outside of our business districts. These consist of schools, hospitals, churches, movie theaters, malls, etc.;

Urban: Consists of dense, heavily populated residential areas in a city. Location is determined by census data polygons and the density of population within each polygon. The population density for urban has a minimum of 5,000 people per square mile;

Suburban: Consists of residential areas that are less dense than urban. These areas are located near urban locations and extend towards the city limits. Location is determined

using census data polygons and the population density has a minimum density of 1,200 people and a maximum of 4,999 people per square mile;

Transitional: Consists of the transition from residential subdivisions to rural areas. These locations have small acreage where houses are a distance apart and have mostly grass and minimal concrete. Location is determined using census data polygons where population density has a minimum density of 360 people and a maximum of 1,199 people per square mile; and

Rural: Consists of the least densely populated areas within a geographical location. Rural areas usually consist of farm land or large acre lots with lots of grass and virtually no pavement. Location is determined using census data polygons where population density has a maximum of 359 people per square mile.

Kansas Gas Service believes that the Metro Core, Business Districts, Public Buildings, Urban, Suburban and Transitional location types are populated areas and consistent with the Class 3 locations contemplated by the Commission.

Addressing Risk:

As mentioned above, Kansas Gas Service will continue to prioritize replacement of the highest risk pipe in the highest consequence areas. The plan continues the Company's efforts to complete the replacement of bare steel service lines and cast iron mains within ten years working from the highest to lower consequence areas. Similarly, Kansas Gas Service will address unprotected bare steel mains within ten years working from highest consequence areas to lower consequence areas. Then the Company will address protected bare steel mains. Details concerning the timeline can be seen in the chart on page 13.

In its plan, the Company places a higher priority on replacement of unprotected bare steel facilities than protected steel. For decades, Kansas Gas Service has been cathodically protecting bare steel mains to inhibit deterioration which has proven to be a prudent investment. Protected bare steel has a lower likelihood of leaking than unprotected bare steel. Thus, it is reasonable to delay the imposition of an additional burden on customers unless otherwise determined necessary and efficient to replace protected bare steel in conjunction with another higher priority project. As a result, the Company's plan replaces protected bare steel mains in populated areas within 35 years.

Timeline:

Kansas Gas Service will begin working this plan in 2019 and anticipates that all cast iron mains, all bare steel service lines, and all bare steel mains in populated areas will be replaced within 35 years. This timeline will allow Kansas Gas Service to moderate bill impacts and address resource constraints (such as the availability of skilled labor, availability of equipment, supplies and the cooperation of the various towns and cities where most of this accelerated work will be performed). In addition, this timeline will allow the Company to focus on risk mitigation, proper design, quality installation practices and allow the Company to leverage technological advancements as they become available.

In contrast, as it relates to the mandated timeline of 10 years, the ARP program has foreseeable logistical issues. For example, under the ARP program, the Wichita area is ripe for problems as the plan requires replacement of approximately 145 miles of the unprotected bare steel mains within a 10-year period. Such an undertaking would involve the acceleration of typical construction activities including, among others: coordination with contractors; ensuring appropriate staffing of engineering and field resources to design and inspect the additional work; coordination with the city regarding project permitting; coordination with the city's resources for

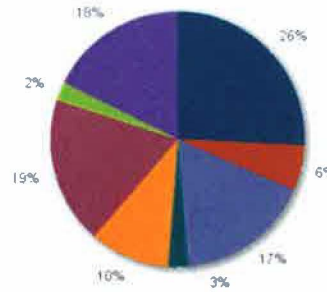
project inspection; and, coordination with the city on street and road closures and restoration. This list does not take into consideration the impact of acceleration on the city and its resources.

Additionally, proceeding at a measured pace as provided in the Company's plan, will allow Kansas Gas Service to mitigate the risks associated with increased construction and excavation activity. To the extent less experienced personnel and contractors must be utilized to complete replacements in a shorter than recommended time frame, it is the Company's position that the program would be trading potential risks associated with aging pipe for risks associated with potential problems arising from accelerated construction activity. In support of this position, Kansas Gas Service points to data the Pipeline and Hazardous Materials Safety Administration ("PHMSA") has collected related to the types of leaks addressed by the industry, as well as the number of serious incidents associated with each type of leak.⁷ From this data, it is evident that while incorrect operations or construction quality contribute to only 2 percent (2%) of the leaks addressed, leaks associated with construction quality are associated with 11 percent (11%) of the serious incidents reported. Conversely, corrosion contributes to 26 percent (26%) of the leaks eliminated but those leaks are associated with four percent (4%) of the serious incidents as illustrated within the charts below. That is, while there are fewer leaks currently associated with construction quality, such leaks have an increased probability of resulting in serious incidents than those incidents associated with corrosion. Thus, it is imperative that construction activity proceed at a pace that can be managed with experienced personnel.

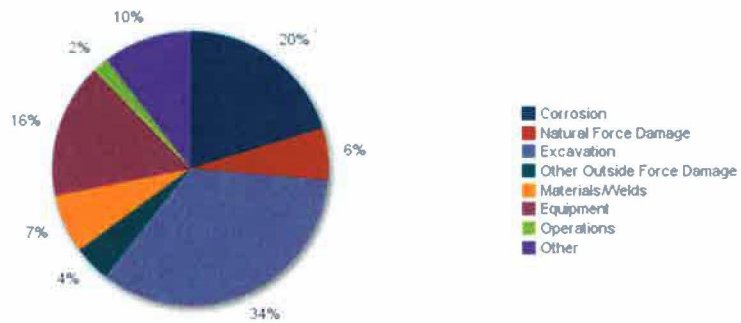
⁷ See the Pipeline Data Mart on PHMSA's website:
https://opsweb.phmsa.dot.gov/primis_pdm/gd_perf_measures.asp

PHMSA DATA

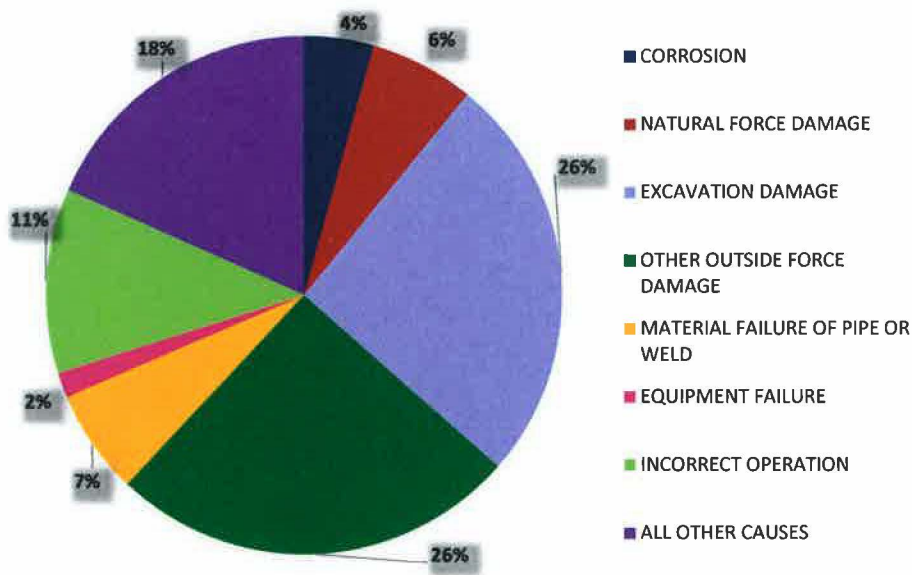
Leaks Eliminated



Hazardous Leaks Eliminated



Serious Incidents



Program Details:

The details of the replacement program, beginning in 2019, for cast iron mains, bare steel services and bare steel mains in populated areas can be found in the chart on page 13. Please note that the program costs are estimates and that these amounts do not include other safety related investment that generally qualifies for GSRS recovery. Also, it should be noted that the chart reflects 16 miles of unprotected bare steel mains and 695 miles of protected bare steel mains remaining in inventory at the end of the accelerated replacement program. These facilities are located in rural areas. The chart provides both the incremental and cumulative bill increases associated with each year of the program.

Kansas Gas Service estimates that this replacement program will require greater levels of investment than in recent years. Over the last five years, the Company has made four GSRS filings and filed one rate case which demonstrated nearly \$130 million of investment, of which over \$116 million was related to replacement of pipeline facilities and approximately \$15 million was related to government relocations. The average annual investment in facilities, excluding government relocations, reflected in these filings was approximately \$23 million. In comparison, the Company's proposed spending in the first year of this plan is \$43.5 million. This is an increase of approximately \$20.5 million over this average level of investment. It should be noted that to date, the highest level of investment reflected in the filings, excluding government relocations, was approximately \$30 million.⁸ Additionally, as can be seen in the chart below, the Company's capital expenditures will increase throughout the term of the plan and, when Kansas Gas Service completes the replacement of cast iron, the associated investment shifts to the effort to replace

⁸ See, Docket No. 15-KGSG-088-TAR.

unprotected bare steel mains. Similarly, when the replacement of bare steel services is complete, the associated investment shifts to the replacement of unprotected bare steel mains.

KGS Attachment A

| Kansas Gas Service Accelerated Replacement Program | | | | | | | | | | | | | | | |
|--|-----------------------|-----------|----------------------------|--------------------------|-----------|----------------------------|------------------------------|-----------|----------------------------|---------------------------|-----------|----------------------------|--------------------------------|--|---|
| Year | Cast Iron Mains | | | Bare Steel Service Lines | | | Unprotected Bare Steel Mains | | | Protected Bare Steel Main | | | Total Program Cost in Millions | Incremental Cost Per Residential Customer Per Month of Program | Cumulative Cost Per Residential Customer Per Month of Program |
| | End of Year Inventory | Reduction | Estimated Cost in Millions | End of Year Inventory | Reduction | Estimated Cost in Millions | End of Year Inventory | Reduction | Estimated Cost in Millions | End of Year Inventory | Reduction | Estimated Cost in Millions | | | |
| 2019 | 0 | 8 | \$4.8 | 35,461 | 7,500 | \$22.8 | 230 | 10 | \$8.2 | 1776 | 7 | \$7.7 | \$43.5 | \$0.44 | \$0.44 |
| 2020 | 0 | | | 27,961 | 7,500 | \$23.5 | 215 | 15 | \$12.4 | 1769 | 7 | \$7.9 | \$43.8 | \$0.44 | \$0.87 |
| 2021 | 0 | | | 20,461 | 7,500 | \$24.2 | 200 | 15 | \$12.7 | 1762 | 7 | \$7.9 | \$44.9 | \$0.45 | \$1.32 |
| 2022 | 0 | | | 12,961 | 7,500 | \$24.9 | 185 | 15 | \$13.1 | 1755 | 7 | \$8.4 | \$46.5 | \$0.46 | \$1.79 |
| 2023 | 0 | | | 5,461 | 7,500 | \$25.7 | 170 | 15 | \$13.5 | 1748 | 7 | \$8.7 | \$47.8 | \$0.48 | \$2.26 |
| 2024 | 0 | | | 0 | 5,461 | \$14.4 | 144 | 26 | \$24.1 | 1741 | 7 | \$8.9 | \$47.5 | \$0.47 | \$2.74 |
| 2025 | 0 | | | 0 | | | 118 | 26 | \$24.8 | 1724 | 17 | \$22.3 | \$47.2 | \$0.47 | \$3.21 |
| 2026 | 0 | | | 0 | | | 92 | 26 | \$25.6 | 1708 | 16 | \$21.6 | \$47.2 | \$0.47 | \$3.68 |
| 2027 | 0 | | | 0 | | | 66 | 26 | \$26.3 | 1693 | 15 | \$20.9 | \$47.3 | \$0.47 | \$4.16 |
| 2028 | 0 | | | 0 | | | 41 | 25 | \$26.1 | 1679 | 15 | \$20.8 | \$46.9 | \$0.47 | \$4.63 |
| 2029 | 0 | | | 0 | | | 40 | 1 | \$0.5 | 1648 | 31 | \$45.8 | \$46.3 | \$0.46 | \$5.09 |
| 2030 | 0 | | | 0 | | | 39 | 1 | \$0.5 | 1618 | 30 | \$45.7 | \$46.2 | \$0.46 | \$5.55 |
| 2031 | 0 | | | 0 | | | 38 | 1 | \$0.5 | 1589 | 29 | \$45.5 | \$46.0 | \$0.46 | \$6.01 |
| 2032 | 0 | | | 0 | | | 37 | 1 | \$0.5 | 1559 | 30 | \$48.5 | \$49.0 | \$0.49 | \$6.50 |
| 2033 | 0 | | | 0 | | | 36 | 1 | \$0.6 | 1530 | 29 | \$48.3 | \$48.8 | \$0.49 | \$6.99 |
| 2034 | 0 | | | 0 | | | 35 | 1 | \$0.6 | 1502 | 28 | \$48.0 | \$48.6 | \$0.49 | \$7.47 |
| 2035 | 0 | | | 0 | | | 34 | 1 | \$0.6 | 1452 | 50 | \$47.5 | \$48.1 | \$0.48 | \$7.96 |
| 2036 | 0 | | | 0 | | | 33 | 1 | \$0.6 | 1404 | 48 | \$47.0 | \$47.6 | \$0.48 | \$8.43 |
| 2037 | 0 | | | 0 | | | 32 | 1 | \$0.6 | 1358 | 46 | \$46.4 | \$47.0 | \$0.47 | \$8.90 |
| 2038 | 0 | | | 0 | | | 31 | 1 | \$0.7 | 1310 | 48 | \$49.8 | \$50.5 | \$0.50 | \$9.41 |
| 2039 | 0 | | | 0 | | | 30 | 1 | \$0.7 | 1264 | 46 | \$49.2 | \$49.9 | \$0.50 | \$9.90 |
| 2040 | 0 | | | 0 | | | 29 | 1 | \$0.7 | 1220 | 44 | \$48.5 | \$49.1 | \$0.49 | \$10.40 |
| 2041 | 0 | | | 0 | | | 28 | 1 | \$0.7 | 1174 | 46 | \$52.2 | \$52.9 | \$0.53 | \$10.93 |
| 2042 | 0 | | | 0 | | | 27 | 1 | \$0.7 | 1130 | 44 | \$51.4 | \$52.1 | \$0.52 | \$11.45 |
| 2043 | 0 | | | 0 | | | 26 | 1 | \$0.8 | 1088 | 42 | \$50.5 | \$51.3 | \$0.51 | \$11.96 |
| 2044 | 0 | | | 0 | | | 25 | 1 | \$0.8 | 1044 | 44 | \$54.5 | \$55.3 | \$0.55 | \$12.51 |
| 2045 | 0 | | | 0 | | | 24 | 1 | \$0.8 | 1002 | 42 | \$53.6 | \$54.4 | \$0.54 | \$13.06 |
| 2046 | 0 | | | 0 | | | 23 | 1 | \$0.8 | 962 | 40 | \$52.6 | \$53.4 | \$0.53 | \$13.59 |
| 2047 | 0 | | | 0 | | | 22 | 1 | \$0.9 | 920 | 42 | \$56.9 | \$57.7 | \$0.58 | \$14.17 |
| 2048 | 0 | | | 0 | | | 21 | 1 | \$0.9 | 880 | 40 | \$55.8 | \$56.7 | \$0.57 | \$14.74 |
| 2049 | 0 | | | 0 | | | 20 | 1 | \$0.9 | 842 | 38 | \$54.6 | \$55.5 | \$0.56 | \$15.29 |
| 2050 | 0 | | | 0 | | | 19 | 1 | \$0.9 | 802 | 40 | \$59.2 | \$60.1 | \$0.60 | \$15.89 |
| 2051 | 0 | | | 0 | | | 18 | 1 | \$1.0 | 764 | 38 | \$57.9 | \$58.9 | \$0.59 | \$16.48 |
| 2052 | 0 | | | 0 | | | 17 | 1 | \$1.0 | 728 | 36 | \$56.5 | \$57.5 | \$0.58 | \$17.06 |
| 2053 | 0 | | | 0 | | | 16 | 1 | \$1.0 | 695 | 33 | \$53.4 | \$54.4 | \$0.54 | \$17.60 |
| Total | | 8 | | | 42,961 | | | 224 | | | 1088 | | \$1,760.0 | | |

Initially, there will not be an acceleration in the miles of pipe replaced compared to current activity. In the early years of the plan, replacements will be focused in the Metro Core and Business district areas. Due to the high cost of pavement restoration per foot for replacements in and the longer timelines for completing projects in these areas, there will likely be a decrease in the miles of replacements. However, as Kansas Gas Service completes the Metro Core and Business District projects and moves to those projects outside these areas, the number of miles replaced will begin to increase.

Kansas Gas Service will meet with Staff annually, coinciding with the Company's GSRS filing, to discuss the progress that has been made each year and any issues that may arise with the plan in future years.

Leak Detection Plan:

Kansas Gas Service will increase leak detection surveys of problematic obsolete plastic pipe from five (5) years to three (3) years beginning with one-third of total problematic obsolete plastic pipe in 2018.

ARP Program:

At the request of Staff, the Company provides the following information regarding the estimated residential bill impact that would result from the replacement of all bare steel services and bare steel mains within ten years. Based on the directives contained in the Commission's order, participation in the ARP would require Kansas Gas Service to replace 42,961 service lines and nearly 1,300 miles of bare steel mains and require \$1.2 billion in capital expenditures within a ten-year period. This would not be an insignificant investment considering the rate base in the Company's 2016 rate case was \$925 million based on a gross plant in service of approximately \$1.8 billion. The estimated investment would therefore increase gross plant by 72%.

Furthermore, the replacement of all bare steel service lines and mains in populated areas within ten years is unattainable given the residential bill impact cap placed on the ARP. Please note that the program costs as provided in the table below are estimates and that these amounts do not include other safety related investments that generally qualify for GSRS recovery and specifically does not include the cost of the Company's cast iron replacement program. Additionally, an estimated 40 miles of unprotected bare steel mains and 695 miles of protected bare steel mains in rural areas will remain in inventory at the end of the 10-year program. The bill impacts provided in the chart are the incremental bill increase associated with each year of the program. Thus, in year two of the program the total monthly bill impact is \$1.86, in year three it is \$3.21 and so on. It is important to note that in most years, the cost per customer is significantly greater than that allowed by the ARP cap.

KGS Attachment A

| Replacement of Bare Steel Service Lines and Mains in 10 Years | | | | | | | | | | | | |
|---|--------------------------|-----------|----------------------------|------------------------------|-----------|----------------------------|----------------------------|-----------|----------------------------|--------------------------------|---|--|
| Year | Bare Steel Service Lines | | | Unprotected Bare Steel Mains | | | Protected Bare Steel Mains | | | Total Program Cost In Millions | Incremental Cost Per Residential Customer Per Month | Cumulative Cost Per Residential Customer Per Month |
| | End of Year Inventory | Reduction | Estimated Cost In Millions | End of Year Inventory | Reduction | Estimated Cost In Millions | End of Year Inventory | Reduction | Estimated Cost In Millions | | | |
| 2019 | 35,461 | 7,500 | \$22.8 | 220 | 20 | \$22.0 | 1751 | 30 | \$33.0 | \$77.8 | \$0.78 | \$0.78 |
| 2020 | 27,961 | 7,500 | \$23.5 | 195 | 25 | \$28.3 | 1701 | 50 | \$56.7 | \$108.5 | \$1.08 | \$1.86 |
| 2021 | 20,461 | 7,500 | \$24.2 | 170 | 25 | \$29.2 | 1631 | 70 | \$81.7 | \$135.1 | \$1.35 | \$3.21 |
| 2022 | 12,961 | 7,500 | \$24.9 | 145 | 25 | \$19.0 | 1561 | 70 | \$34.1 | \$128.1 | \$1.28 | \$4.49 |
| 2023 | 5,461 | 7,500 | \$25.7 | 120 | 25 | \$19.6 | 1461 | 100 | \$67.2 | \$112.5 | \$1.12 | \$5.62 |
| 2024 | 0 | 5,461 | \$15.8 | 95 | 25 | \$20.2 | 1341 | 120 | \$33.1 | \$119.0 | \$1.19 | \$6.81 |
| 2025 | 0 | | | 70 | 25 | \$20.8 | 1201 | 140 | \$99.8 | \$120.6 | \$1.21 | \$8.01 |
| 2026 | 0 | | | 45 | 25 | \$21.4 | 1051 | 150 | \$110.1 | \$131.6 | \$1.32 | \$9.33 |
| 2027 | 0 | | | 41 | 4 | \$3.5 | 876 | 175 | \$132.4 | \$135.9 | \$1.36 | \$10.69 |
| 2028 | 0 | | | 40 | 1 | \$0.9 | 695 | 181 | \$141.0 | \$141.9 | \$1.42 | \$12.11 |
| Total | | 42,961 | | | 200 | | | 1,086 | | \$ 1,210.8 | | |

Based on the Company's analysis of the program, the Company respectfully asserts that several components of the ARP, as described in the Final Order, mitigate against its usefulness as an incentive for accelerating replacement of legacy pipelines in Kansas. For example, the program's proposed timeframe, coupled with the cap on residential bill impacts makes the ARP infeasible for Kansas Gas Service. Further, the ARP does not recognize that Kansas Gas Service currently has accelerated replacement programs in place. The requirement for incremental investment in each year of the ARP fails to acknowledge that investment dollars used for these current programs will eventually become available to address replacements required by the ARP. Kansas Gas Service also finds the requirements to forego rate case expense and the tenuous calculation of offsetting savings in operations and maintenance expense to serve as impediments to its use of the ARP. As such, Kansas Gas Service provides the above table for informational purposes only.

Below is Kansas Gas Service's first submission reporting miles of facilities by material type and location provided in the format prescribed by Staff. This submission reflects data as of March 31, 2018. The Company also provides the leak information requested by Staff. This submission reflects data as of December 31, 2017.

| Miles of Main By Location | | | |
|---------------------------|-------|-------|--------|
| | Urban | Rural | Total |
| Protected Coated | 2,448 | 1,388 | 3,836 |
| Protected Bare | 1,092 | 694 | 1,786 |
| Unprotected Coated | 0.091 | - | 0.091 |
| Unprotected Bare | 203 | 41 | 244 |
| Cast Iron | 18 | - | 18 |
| PVC | 1 | 145 | 146 |
| PE | 2,714 | 1,130 | 3,844 |
| Aldyl-A & Marlex | 1,074 | 451 | 1,525 |
| Other | - | - | - |
| Total | 7,551 | 3,848 | 11,398 |

| Number of Services by Location | | | |
|--------------------------------|---------|---------|---------|
| | Urban | Rural | Total |
| Protected Coated | 7,445 | 3,385 | 10,830 |
| Protected Bare | 6,452 | 3,018 | 9,470 |
| Unprotected Coated | 3,245 | 768 | 4,013 |
| Unprotected Bare | 31,377 | 6,593 | 37,970 |
| Cast Iron | - | - | - |
| PVC | 1 | 55 | 56 |
| PE | 332,400 | 98,888 | 431,288 |
| Aldyl-A & Marlex | 122,359 | 16,491 | 138,850 |
| Other | - | - | - |
| Total | 503,279 | 129,198 | 632,477 |

| Leaks Found During Inspection Year by Leak Classification | | | | |
|---|---------|---------|---------|-------|
| | Class 1 | Class 2 | Class 3 | Total |
| # of Leaks Found | 1,297 | 267 | 763 | 2,327 |
| # of Leaks Repaired | 1,306 | 264 | 814 | 2,384 |
| # of Current Leaks | - | 5 | 570 | 575 |

Note:

The differentiation between the urban and rural areas for this report is determined using a population density of 360 people per square mile based on census data. This delineation was derived after a review of Census Blocks at metropolitan interfaces between populated and rural areas and is subject to additional review and potential adjustment by subject matter experts. Because many of the small communities served by Kansas Gas Service have low population densities, they are likely within the rural location type.

The mains and services asset register databases were not originally configured and populated with manufacturer, model and PE material designation data. As part of the Company's data improvement initiatives, Kansas Gas Service will now be configuring systems to track this information. Until these data can be collected and the asset register systems populated, Kansas Gas Service is entering default values based on information gathered from purchasing history, subject matter expert advice, and material manufacture dates. The miles of Marlex resin mains and services is primarily derived from this default value analysis. Aldyl-A was not a material type generally purchased by Kansas Gas Service; however, there are a few miles of this material type included in the inventory based on discovery of the material in the field and on a review of installation records used to update the asset register. Kansas Gas Service currently has 8.9 miles of Aldyl-A distribution mains in its inventory. Aldyl-A pipe will be included in accelerated leak surveys. Marlex resin pipe will continue at the current leak survey frequency. Although Marlex resin is an obsolete material, Kansas Gas Service has not had any signs of deterioration of this pipe material.

Distribution mains and services will not reconcile to the PHMSA distribution reports due to changes made to the Company's database systems over the last several months.

Kansas Gas Service will continue to refine this report as system improvements are made.