

**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
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 Plan for the replacement of obsolete materials within Class 3 locations (populated areas). The Company states as follows:

1. 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 filing on or before January 24, 2018.
2. Thus, in compliance with the relevant Commission Orders and pursuant to the Company’s informal agreement with Staff, Kansas Gas Service hereby submits its *Plan for the Replacement of Obsolete Materials* as attached hereto as KGS Attachment A.

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 by JB

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KANSAS GAS SERVICE'S 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. 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.

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

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

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.

The 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 areas² 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

² 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.

appropriate time-period for completing the replacements.³ Additionally, the Company will continue to make use of GSRS filings and traditional rate cases to recover its investments in pipeline replacements.⁴ 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. 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 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 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

³ 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.

⁴ Additionally, Kansas Gas Service may file an abbreviated rate case(s) if appropriate.

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 12.

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.

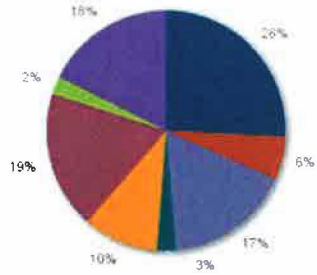
Additionally, proceeding at a measured pace as provided in the Company's plan, will allow Kansas Gas Service to mitigate the risks associated with increased construction and excavation activity. To the extent less experienced personnel and contractors must be utilized to complete replacements in a shorter 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.⁵ 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 lead to more 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.

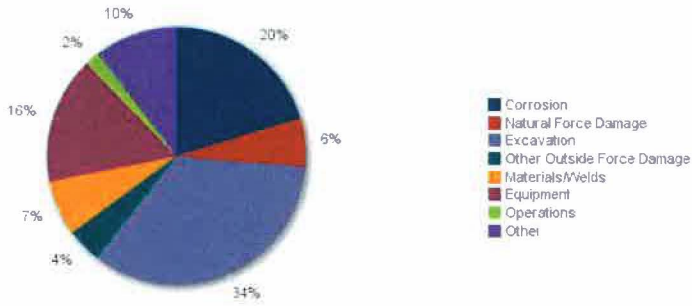
⁵ See the Pipeline Data Mart on PHMSA's website:
https://opsweb.phmsa.dot.gov/primis_pdm/gd_perf_measures.asp

PHMSA DATA

Leaks Eliminated

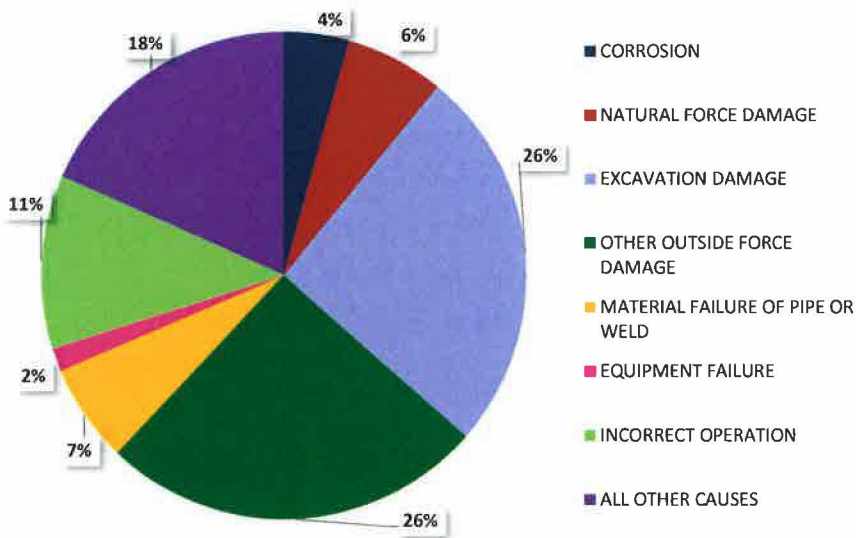


Hazardous Leaks Eliminated



- Corrosion
- Natural Force Damage
- Excavation
- Other Outside Force Damage
- Materials/Welds
- Equipment
- Operations
- Other

Serious Incidents



- CORROSION
- NATURAL FORCE DAMAGE
- EXCAVATION DAMAGE
- OTHER OUTSIDE FORCE DAMAGE
- MATERIAL FAILURE OF PIPE OR WELD
- EQUIPMENT FAILURE
- INCORRECT OPERATION
- ALL OTHER CAUSES

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 the following page. 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 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 residential bill impact, per month, is \$0.87. In year three of the program the total impact is \$1.32 per month and so on.

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		

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	\$84.1	\$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	\$83.1	\$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.