

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

**MAY 25 2012**

In the Matter of the Application of Kansas Gas )  
Service, a Division of ONEOK, Inc. for the )  
Approval of an Infrastructure Replacement )  
Program Surcharge. )

by  
State Corporation Commission  
of Kansas

Docket No. 12-KGSG-721-TAR

**NOTICE OF FILING OF STAFF REPORT AND RECOMMENDATION**

The Staff of the State Corporation Commission of the State of Kansas (Staff), files its Report and Recommendation, and states the following:

1. On March 28, 2012, Kansas Gas Service (KGS) filed an application for a new tariff schedule, Infrastructure Replacement Program (IRP) Surcharge, which is designed to allow for the adjustment of KGS's rates and charges to provide for the recovery of costs for eligible infrastructure system replacements.

2. On April 25, 2012, the Commission issued an Order Setting Procedural Schedule. In the Procedural Schedule, the Commission established May 25, 2012, as the filing deadline for Staff's Report and Recommendation in this matter.

3. Staff hereby files the attached Report and Recommendation, jointly prepared by Leo Haynos, Chief of Gas Operations & Pipeline Safety and Justin Grady, Chief of Accounting & Financial Analysis, recommending the Commission approve KGS's application as filed with the following conditions:

- a. KGS agrees to includes in the IRP surcharge calculation an offset to depreciation expense associated with assets which are directly retired in the course of the IRP;
  - b. KGS agrees to include the IRP charge as a separate line item on customer's bills;
- and

- c. If the cost of the project exceeds \$70.2 million, KGS agrees to seek Commission approval to continue to recover these costs through the IRP surcharge.

WHEREFORE, Staff submits its Report and Recommendation for Commission review and consideration and for such other and further relief as the Commission deems just and proper.

Respectfully submitted,



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Mark Sievers, Chairman  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

**REPORT AND RECOMMENDATION  
UTILITIES DIVISION**

STATE CORPORATION  
COMMISSION

**MAY 22 2012**

PATRICE PETERSEN-KLEIN  
EXECUTIVE DIRECTOR

**TO:** Chairman Mark Sievers  
Commissioner Ward Loyd  
Commissioner Thomas E. Wright

**FROM:** Leo Haynos, Chief of Gas Operations & Pipeline Safety  
Justin Grady, Chief of Accounting & Financial Analysis

**DATE:** May 22, 2012

**DATE SUBMITTED TO EXECUTIVE DIRECTOR:** 5/22/12

**DATE SUBMITTED TO LEGAL:** 5-22-12 *pu*

**DATE SUBMITTED TO COMMISSIONERS:** 5-24-12

**SUBJECT:** Docket 12-KGSG-721-TAR: In the Matter of the Application of Kansas Gas Service, A Division of ONEOK, Inc. for the Approval of An Infrastructure Replacement Program (IRP) Surcharge

**EXECUTIVE SUMMARY:**

Kansas Gas Service, A Division of ONEOK, Inc. (KGS) has applied for approval of a surcharge to recover approximately \$70.2 Million in costs associated with a pipe replacement program that will replace the remaining 108 miles of cast iron piping in its gas distribution system along with 40 miles of unprotected bare steel piping. The surcharge as proposed by KGS amounts to a per customer charge of \$.05/month for the first year. Staff projects that this charge should grow to approximately \$.19/month for the second year and approximately \$.97/month by the end of the eight-year program. After reviewing the application of KGS, the testimony of KGS witness Ronald Bridgewater, and the KGS responses to Commission Staff (Staff) data requests, Staff recommends the Commission approve this application.

**BACKGROUND:**

Cast iron was used extensively in the United States as a conduit for natural gas distribution from the 1830s until the 1960s. During that time period, cast iron was a preferred piping material because it was considered to have lower corrosion rates than other available materials. Although

cast iron offers some resistance to corrosion, it is still affected by corrosion and its gradual deterioration has resulted in an increased frequency of leaks and pipeline breaks. Cast iron is also a relatively brittle material which is susceptible to bending stresses. A bending force-such as one caused from soil movement-when placed on the pipe may cause the pipe to fail catastrophically in the same manner that a twig would snap. A failure related to bending stresses typically results in a circumferential crack forming. In fact, this type of failure is one of the most common failure modes of small diameter cast iron piping.<sup>1</sup> The presence of corrosion weakening the pipe wall will increase the probability of a crack type failure. The susceptibility to sudden abrupt failures of aging cast iron piping has created a nationwide concern for the continued use of this material for natural gas service. In a recent Advisory Bulletin (See Exhibit LMH-1), the U.S. DOT Pipeline and Hazardous Materials Safety Administration has requested state agencies to consider mandatory cast iron replacement programs<sup>2</sup>, and it urges pipeline operators to conduct a comprehensive review of their current cast iron replacement programs.

The cast iron presently in use by KGS was installed from as early as 1887 until 1964.<sup>3</sup> As early as 1989, Staff records indicate that Kansas Power and Light, a predecessor company to KGS, was experiencing gas leaks in cast iron pipe and had a formal cast iron replacement policy.<sup>4</sup> As shown in Exhibit LMH-2, KGS or its predecessor companies had made considerable progress in reducing its cast iron inventory over the last 21 years. A portion of the inventory reduction can be attributed to both federal and Kansas pipeline safety regulations, but for the most part, the replacement has been a voluntary effort by KGS. To date, the rate of cast iron replacement has been governed primarily by corrosion leaks found on the piping and secondarily as the opportunity to replace pipe presents itself in coordination with street replacement projects.

By 1976, federal pipeline safety regulations had recognized the susceptibility of cast iron to failures caused by outside forces acting on the pipe. 49 CFR Part 192.755 was added to the pipeline safety code requiring an operator of cast iron piping to protect the piping from external loading.<sup>5</sup> This federal requirement was adopted into Kansas regulation shortly after its federal promulgation. In April of 1989, the Commission issued an emergency order in Docket 89-KPLG-259-GIG, (See Exhibit LMH-3) as a result of a natural gas incident that occurred at 3030 Kentucky in Topeka, Kansas. The incident was the result of a circumferential crack failure to a cast iron main. Pictures of a section of the failed main are included as Exhibit LMH-4. The emergency order requirements were later codified into Kansas pipeline safety regulations and required all operators of cast iron piping to institute a cast iron sampling program in order to evaluate the extent of corrosion in the system. If the sampled portion indicated corrosion had affected a threshold percentage of the pipe wall, the regulations required the operator to replace at least 500 feet of cast iron. In 2008, the Kansas pipeline safety code was again modified to require all cast iron 3" in diameter or smaller to be replaced by January 2013. The modifications also reduced the number of sampling coupons being taken from the remaining cast iron but

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<sup>1</sup> Makar, J.M.; Desnoyers, R.; McDonald, S.E., Failure modes and mechanisms in gray cast iron pipe, June 10, 2001

<sup>2</sup> Page 2 of Exhibit 1.

<sup>3</sup> Response to Staff Data Request 1

<sup>4</sup> Page 2, Kolstad, James, National Transportation Safety Board Safety Recommendation P-89-1

<sup>5</sup> 49 CFR Part 192.755(a): When an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed, that segment of the pipeline must be protected, as necessary, against damage during the disturbance by:(1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting; (2) Impact forces by vehicles; (3) Earth movement; (4) Apparent future excavations near the pipeline; or (5) Other foreseeable outside forces which may subject that segment of the pipeline to bending stress.

required at least 500 feet of cast iron to be replaced any time a leak due to external corrosion was discovered. In 2011, Kansas adopted the federal requirements for Distribution Integrity Management (DIM).<sup>6</sup> This regulation requires the operator to identify the risks to safety in its system and prioritize their approach toward reducing those risks. KGS completed its DIM plan in July of 2011. The plan recognizes the threat of cast iron failures and requires KGS to continue with a replacement plan to mitigate that risk.<sup>7</sup> The DIM plan states that KGS will perform an annual evaluation of the cast iron replacement progress and adjust the replacement rate to achieve the desired risk reduction results.<sup>8</sup>

## **ANALYSIS:**

### **Pipelines Safety**

Because of the national focus on cast iron replacement as discussed in Exhibit LMH-1, Staff contacted KGS regarding their progress in replacing the cast iron piping in their distribution system. On January 31, 2012, Staff met with KGS personnel to receive an update on the status of the cast iron replacement program and to discuss the possibility of accelerating it. The subject application is the result of those discussions.

In its application, KGS is proposing to replace the remaining 108 miles of cast iron piping in its system and an additional 40 miles of unprotected bare steel mains that are contiguous to the cast iron piping. KGS estimates the cost of the project to be \$70 Million which will occur over an eight-year time period.

KGS's current replacement plan is based on a reaction to the discovery of cast iron corrosion or when pipe replacement can be coordinated with other public works projects. As demonstrated in Exhibit LMH-2, KGS has made good progress in removing cast iron from its distribution piping inventory. However, the pipe replacement methodology currently employed does not commit KGS to replace the cast iron in its system by a given date. KGS's DIM plan provides some additional certainty that the rate of replacement will be adjusted, but there is no commitment to complete the replacement within a certain time period. While it appears that replacement will be completed by 2022 at the current replacement rate, Staff has no reliable means of predicting that date. An example of outside factors influencing the replacement rate is evident by the change in replacement rate that occurred in 2002 as shown on Exhibit LMH-2. For some unknown reason, the replacement rate slowed and added an additional 7 years to the replacement trend at that time. KGS currently incurs approximately 100 leaks on its cast iron system each year<sup>9</sup>-any of which could be a catastrophic failure of the pipe and lead to another incident similar to the one that occurred in 1989. Other than national statistics regarding cast iron failures, Staff has no evidence that suggests the KGS cast iron piping is in imminent danger of failure. It is simply a type of piping material that is prone to catastrophic failures and therefore must be closely monitored or replaced. Staff notes KGS's cast iron piping has been in

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<sup>6</sup> 49 CFR Part 192.1001 as adopted by K.A.R 82-11-4

<sup>7</sup> Response to Staff DR 3.

<sup>8</sup> Page D-7 of ONEOK Distribution Companies Level 2 Gas Distribution Integrity Management Plan; July 27, 2011  
Provided as Response to Staff DR 3

<sup>9</sup> Response to Staff DR 7.

service from 48 to 125 years and continues to age and corrode which only increases the probability of another failure similar to that of 1989.

From a strict pipeline safety perspective, Staff would recommend removal of the cast iron as soon as possible-preferably quicker than the eight-year time period proposed in the KGS application. However, from a practical standpoint, Staff agrees with the point raised in Mr. Bridgewater's testimony<sup>10</sup> that replacing 148 miles of piping in areas of cities with relatively high population densities in a time frame shorter than eight years could create difficulties in project management for the existing KGS personnel. While independent contractors are available for this type of construction project, Staff agrees safety and the long-term operation of the system would be better served if KGS personnel provided the project management and oversight.

As noted earlier, Staff initiated discussions with KGS earlier this year regarding accelerated replacement of cast iron piping. The replacement project as proposed by KGS includes \$16 Million<sup>11</sup> for replacement of 40 miles of unprotected bare steel (UPBS) piping connected to the cast iron to be replaced. In our opinion, all UPBS should be targeted for replacement as it is also susceptible to leakage from corrosion. While UPBS does not have the same tendency as cast iron to fail catastrophically, it still represents a significant risk to the safe operation of the system because of its age and rate of corrosion. It is our understanding that the portion of UPBS included in this application are those sections of piping directly connected to cast iron and operated at less than 1 psi of pressure.<sup>12</sup> The replacement of cast iron with smaller diameter polyethylene plastic piping would result in the need to operate the contiguous UPBS at much higher pressures and potentially could result in significant leaks developing on this piping segment. For that reason and because the safety impact on this portion of the UPBS is a collateral result of the cast iron replacement project, Staff recommends the UPBS replacement included in the application be considered as part of the cast iron replacement project.

The Gas Safety and Reliability Surcharge (GSRS)<sup>13</sup> was enacted by the Kansas Legislature in July of 2006. This statute allows natural gas public utilities to recover costs for certain infrastructure projects through a monthly customer surcharge, but the recovery can only be applied to projects that entail the replacement of infrastructure or the extension of the useful life of infrastructure. The replacement projects are further limited to those projects that are required for compliance with pipeline safety regulations or for facility relocation projects caused by other public works projects such as road improvement. Based on our review of KGS's DIM plan,<sup>14</sup> it appears that replacement of cast iron could be considered as eligible for recovery under GSRS. The DIM plan requires each operator to identify the safety risks in its distribution system and take action to reduce those risks<sup>15</sup>. KGS has identified cast iron as a safety risk and concluded that a formal replacement plan is the action to be taken to reduce that risk. As such, the replacement of cast iron becomes eligible for GSRS in our opinion. However, the DIM plan does not commit KGS to a replacement deadline. If the results of their analysis of operations activities indicate another threat is ranked higher than cast iron, the regulation would require

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<sup>10</sup> Lines 2-9, Page 6 of testimony of Ronald D. Bridgewater

<sup>11</sup> Line 2, Page 5 of testimony of Ronald D. Bridgewater

<sup>12</sup> Response to Staff DR 2

<sup>13</sup> K.S.A. 66-2202 – 66-2204

<sup>14</sup> Response to Staff DR 3

<sup>15</sup> 49 CFR Part 192.1007(d) as adopted by K.A.R. 82-11-4

KGS to focus on that threat rather than cast iron replacement. The subject application commits KGS to an eight year completion of the project.

In addition, in discussions with KGS personnel, KGS expressed concern that the current restrictions in GSRS statute limiting the annual increase in the GSRS charge to \$.40/month per residential customer may not allow the entirety of the cast iron replacement program costs to be included in the GSRS, when added to KGS's anticipated safety-related capital expenditures. This may limit KGS's willingness to commit to a plan to replace this infrastructure as expeditiously as called for in the IRP, if KGS were to attempt to use the provisions of the GSRS to seek recovery of this investment.

### Accounting

Staff has reviewed the proposed IRP surcharge calculation, and, after accounting for Staff's recommended revisions to the calculation, finds the first year amount of the surcharge of \$469,009 requested by KGS to be reasonable.

The IRP surcharge calculation is designed much like the surcharge allowed for in the GSRS statutes, except that it eliminates the regulatory lag inherent in the GSRS statute.<sup>16</sup> KGS's requested surcharge calculation is based on projected capital expenditures, and assumes ratable investment throughout the collection year. The calculation includes both a 'return of' and 'return on' capital, through depreciation expense and the application of carrying charges, using KGS's last Commission-approved cost of capital. The calculation properly removes accumulated depreciation and accumulated deferred income taxes<sup>17</sup> from rate base, ensuring that ratepayers are not paying a 'return on' assets that should not be part of rate base.

Staff does not object to the forward looking nature of KGS's proposed surcharge, due to the fact that KGS has voluntarily committed to this aggressive capital replacement plan, with a specific commitment to replace the infrastructure over a time frame of eight years. Although the GSRS surcharge calculation represents a reduction in regulatory lag, a regulatory lag still exists. KGS's IRP calculation eliminates this lag, which is appropriate given KGS's capital expenditure commitment.

It should be noted that ratepayers are not without benefit from the forward looking nature of KGS's requested surcharge. Aside from the safety-related benefits to ratepayers from KGS's proposal, because this surcharge allows KGS to begin earning carrying charges on its investments as they are being incurred, KGS will not be calculating Allowance for Funds Used During Construction (AFUDC) on these capital expenditures.<sup>18</sup> KGS calculates AFUDC monthly, and the amounts eventually add to the amount placed in rate base for a particular construction project. Therefore, the avoidance of AFUDC charges will necessarily result in a lower retail rate at the conclusion of the construction project. KGS's AFUDC rate has ranged from 3.95% to 6.22% over the last three years, with an average rate of 4.93%. On Exhibit JTG-

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<sup>16</sup> KGS's requested surcharge also did not account for the reduction in depreciation expense resulting from the associated retirements of the cast iron mains. Staff's response to this issue is discussed below.

<sup>17</sup> As discussed below, KGS over-estimated its ADIT balances that would be applicable during the first year of the IRP surcharge.

<sup>18</sup> AFUDC is allowed per Federal Energy Regulatory Commission (FERC) accounting rules, and represents the cost of financing capital expenditures during the period of construction.

3, Staff calculates the anticipated avoidance of AFUDC over the life of the IRP using KGS's average AFUDC rate from 2010-2012, assuming ratable capital investment of \$8.775 Million a year. Under these assumptions, Staff calculates that the total avoided AFUDC amounts would total \$452,452 over the eight years that the IRP will be in effect.

As mentioned above, KGS's requested surcharge calculation did not include an offset to the depreciation expense calculation associated with the anticipated retirements of existing cast iron infrastructure. This is a requirement of the GSRS statute, and it is consistent with proper ratemaking theory because it recognizes that KGS is still receiving depreciation expense in its base rates on the cast iron plant that is being retired as part of this program. Staff sought discovery from KGS to determine the original cost of the assets targeted for replacement under the IRP, in order to calculate this reduction in depreciation expense. In response to Staff Data Request Nos. 10 and 11, KGS provided the Gross Plant value of the plant that is expected to be retired under the IRP. The impact of these retirements on the calculation of depreciation expense is included in Staff's re-calculation of the proposed IRP surcharge on Exhibit JTG-1.

Staff has also re-calculated the Accumulated Deferred Income Taxes (ADIT) included in KGS's IRP calculation.<sup>19</sup> KGS mistakenly over-calculated the ADIT that would apply to the investments proposed under the IRP. KGS's original ADIT calculation assumed that the investments subject to the IRP would be eligible for 100% deduction for income tax purposes in the first year of commercial operation. This liberalized tax treatment has been the subject of various Staff memos during previous GSRS audits.<sup>20</sup> In discussions with KGS personnel subsequent to the filing, it was determined that these investments would not qualify for this 100% deduction in the first year, but would be eligible for the 50% bonus depreciation provision during 2012, then accelerated depreciation for the remainder of the un-depreciated investment.

Staff's calculation of the IRP surcharge, after accounting for the revisions discussed above, would amount to a revenue requirement of \$585,842.<sup>21</sup> This compares to KGS's requested surcharge amount of \$469,009. KGS is not seeking a formal revision to its request, so Staff's recommendation is to approve KGS's application as filed. Staff also calculated an example IRP revenue requirement amount that could be expected for the second year of the program, assuming the \$8.775 Million of annual investment. Staff's calculation arrived at a revenue requirement of \$1,836,135 for the second year of the program.<sup>22</sup> This includes updated ADIT calculations, Accumulated Depreciation, and Staff's recommended treatment of retired plant (offsetting depreciation expense). Staff calculated the charges for each customer class that would have resulted from Staff's revised IRP calculation for year one and that can be expected for year two on Exhibits JTG-2 and JTG-2A, respectively. Based on these calculations, KGS's residential customers would be charged \$.19/month during the second year of the program. This represents an increase of \$.13 per residential customer per month over Staff's corrected first year

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<sup>19</sup> In this case ADIT arises because of the timing difference associated with the depreciation expense deduction allowed for Federal and State income tax purposes and the depreciation expense deduction assumed in the calculation of KGS's income taxes used for ratemaking purposes. The balance of ADIT represents cost-free capital, and therefore is deducted from KGS's rate base for the calculation of the 'return on' portion of the IRP surcharge. See Staff Exhibit JTG-1A for the details of the AFUDC calculations utilized in Staff's revenue requirement calculations.

<sup>20</sup> See Docket No. 10-KGSG-155-TAR, Staff's Memorandum, March 23, 2010.

<sup>21</sup> See Staff Exhibit JTG-1.



IRP revenue requirement of \$.06/month. However, because KGS has not formally requested a revision of its application, this would represent a \$.14/month increase over KGS's filed \$.05/month residential charge. Without the impact of changes in ADIT going forward, this increase of \$.13/month should characterize the rate of increase of the surcharge every year through the 8<sup>th</sup> year of the program, with the surcharge ending up around \$.97/month for a residential customer.

Staff believes that KGS's IRP charge should appear as a separate line item on customer's bills. This has historically been our position on new surcharges, and we think it continues to be a good policy. Line-items on customer bills do cause a certain level of customer angst, but Staff believes that customers deserve to know what special charges they are being assessed, and what the purpose of them is.

Staff notes that the Citizens Utility Ratepayer Board has expressed publicly that it has questions about the rate of return (ROR) that should be applied to these investments, because of the risk mitigation afforded to KGS by this surcharge, and its true-up provisions.<sup>23</sup> Staff's position on this issue is that any adjustment to KGS's allowed rate of return should be addressed in KGS's upcoming rate case, and analyzed in the context of all the other factors that can affect a utility's cost of capital. Because KGS is planning to file a rate case in the near future, this issue really only affects the first year's surcharge—after that KGS's new ROR resulting from the Commission's decision in its upcoming rate case can be used in the IRP surcharge calculation.

Because of CURB's concerns, Staff conducted a sensitivity analysis to see how a change in the return on equity (ROE) utilized in the IRP surcharge calculation would affect the revenue requirement. Using Staff's version of the IRP calculation, a 1% reduction in KGS's ROE results in a reduction of \$36,591 in the revenue requirement. That adjustment would not affect the monthly charge per residential customer using KGS's rate design. At a 9.2% ROE, the General Sales class monthly charge would drop by \$.01/month to \$.14/month. In order to produce a reduction large enough to affect the residential class monthly surcharge one would have to assume an 8.6% ROE for use in the IRP calculation. In addition, because KGS under-calculated the proper revenue requirement for the first year of the IRP, a dramatic reduction in the assumed ROE would be necessary to produce an IRP revenue requirement less than KGS's filed proposal. Based on Staff's calculations, an ROE below 7% would be necessary to produce an IRP revenue requirement below \$469,006. Staff recommends that the Commission consider whether this surcharge justifies a lower ROE in KGS's upcoming rate case, as opposed to attempting to determine what downward adjustment may or may not be appropriate for the first year's IRP charge, especially given the fact that a reasonable downward adjustment is unlikely to result in a material change in customer rates.

KGS's application assigns the costs to the different customer classes based on the percentage of assigned revenue in KGS's last base rate case, Docket No. 06-KGSG-1209-RTS. The resulting class revenue is then designed to be collected as a fixed charge to each customer on a monthly basis. This is consistent with how KGS has designed rates to be collected under its GSRS tariff, and Staff is in agreement that this represents a reasonable method to collect the IRP charge between rate cases.

**RECOMMENDATION:**

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<sup>23</sup> See the Prehearing Transcript of the Scheduling Conference held April 16, 2012 at the Commission's Offices.

Staff recommends approval of the proposed plan presented by KGS to replace all cast iron piping remaining in its gas distribution system by 2021. This plan represents a proactive approach with a date certain deadline for removing cast iron piping from KGS's natural gas system. Since 1976, regulatory agencies have been concerned with the propensity of cast iron to abruptly fail and the impact of such a failure on life and property. KGS and its predecessor companies have shared that concern and have taken action to reduce the inventory of cast iron in its distribution system. The proposed plan goes beyond current replacement activities and brings closure to this safety risk.

Staff has reviewed the IRP surcharge calculation, and finds that KGS's proposal is \$116,833 below Staff's calculation of how the IRP revenue requirement should be calculated. KGS is not requesting a revision of its Application at this time, so accordingly; Staff recommends that the Commission approve KGS's application as filed, with the following conditions:

1. KGS Agrees to include in the IRP surcharge calculation an offset to depreciation expense associated with assets which are directly retired in the course of the IRP.
2. KGS agrees to include the IRP charge as a separate line item on customer's bills.
3. If the cost of the project exceeds \$70.2 Million, KGS agrees to seek Commission approval to continue to recover these costs through the IRP surcharge.

cc: Patrice Petersen-Klein, Executive Director  
Jeff McClanahan, Director of Utilities

## DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials  
Safety Administration

[Docket No. PHMSA-2012-0039]

Pipeline Safety: Cast Iron Pipe  
(Supplementary Advisory Bulletin)AGENCY: Pipeline and Hazardous  
Materials Safety Administration  
(PHMSA), DOT.ACTION: Notice; Issuance of Advisory  
Bulletin.

**SUMMARY:** PHMSA is issuing an advisory bulletin to owners and operators of natural gas cast iron distribution pipelines and state pipeline safety representatives. Recent deadly explosions in Philadelphia and Allentown, Pennsylvania involving cast iron pipelines installed in 1942 and 1928, respectively, gained national attention and highlight the need for continued safety improvements to aging gas pipeline systems. This bulletin is an update of two prior Alert Notices (ALN-91-02; October 11, 1991 and ALN-92-02; June 26, 1992) covering the continued use of cast iron pipe in natural gas distribution pipeline systems. This advisory bulletin reiterates two prior Alert Notices which remain relevant, urges owners and operators to conduct a comprehensive review of their cast iron distribution pipelines and replacement programs and accelerate pipeline repair, rehabilitation and replacement of high-risk pipelines, requests state agencies to consider enhancements to cast iron replacement plans and programs, and alerts owners and operators of the pipeline safety requirements for the investigation of failures. In addition, the latest survey and reporting requirements of cast iron pipelines required by the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 are included for information.

**ADDRESSES:** This document can be viewed on the Office of Pipeline Safety home page at: <http://ops.dot.gov>.

**FOR FURTHER INFORMATION CONTACT:** Jeff Gilliam, Director, Engineering and Research, 202-366-0568 or by email at [Jeffery.Gilliam@dot.gov](mailto:Jeffery.Gilliam@dot.gov).

**SUPPLEMENTARY INFORMATION:****I. Background**

On January 18, 2011, an explosion and fire caused the death of one gas utility employee and injuries to several other people while gas utility crews were responding to a natural gas leak in Philadelphia, PA. A preliminary investigation found a circumferential

break on a 12-inch cast iron distribution main that was installed in 1942, and was operating at 17 pounds per square inch gauge (psig) pressure at the time of incident. An investigation continues toward finding the cause.

On February 9, 2011, five people lost their lives and a number of homes were destroyed and other properties impacted by an explosion and subsequent fire in Allentown, PA. A preliminary investigation found a crack in a 12-inch cast iron natural gas distribution main that was installed in 1928, and was operating at less than 1 psig at the time of incident. The crack was located below grade near the destroyed homes. An investigation continues toward finding the cause.

**Alert Notice (ALN-91-02)**

On October 11, 1991, PHMSA's predecessor agency, the Research and Special Programs Administration (RSPA), issued Pipeline Safety Alert Notice (ALN-91-02) alerting pipeline operators of National Transportation Safety Board recommendation P-91-12 in response to the August 1990 explosion and fire in Allentown, PA, caused by a crack in a 4-inch cast iron gas main. The recommendation stated:

"Require each gas operator to implement a program, based on factors such as age, pipe diameter, operating pressure, soil corrosiveness, existing graphitic damage, leak history, burial depth, and external loading, to identify and replace in a planned, timely manner cast iron piping systems that may threaten public safety."

The Alert Notice informed distribution pipeline operators with cast iron pipe of the following:

- The Gas Piping Technology Committee developed guide material to assist them in developing procedures for determining the serviceability of the cast iron pipe and to identify the cast iron pipe segments that may need replacement.
- Computer programs are commercially available that can be used to develop a systematic replacement program for cast iron pipe.
- Pipeline safety regulations require that cast iron pipe on which general graphitization is found to a degree where a fracture might result must be replaced. In addition, the regulations require that cast iron pipe that is excavated must be protected against damage. An operator's compliance with the above guidelines and code requirements can be enhanced by incorporating all of the operator's cast iron responsibilities in an effective cast iron management program that is designed to identify and replace or

remove from service cast iron pipe that may threaten the public.

**Alert Notice (ALN-92-02)**

On June 26, 1992, RSPA issued a Pipeline Safety Alert Notice (ALN-92-02) as a Supplementary Alert Notice to the 1991 Alert Notice. The Supplementary Alert Notice reminded pipeline operators of the requirement at 49 CFR 192.613 that each operator have a procedure for continuing surveillance of its pipeline facilities to identify problems and take appropriate action concerning failures, leakage, history, corrosion, and other unusual operating and maintenance conditions. This procedure should also include surveillance of cast iron to identify problems and to take appropriate action concerning graphitization.

**II. Advisory Bulletin (ADB-2012-05)**

**To:** Each Owner and Operator of a Natural Gas Cast Iron Distribution Pipeline Facility and State Pipeline Safety Representatives.

**Subject:** Cast Iron Pipe (Supplementary Advisory Bulletin).

**Purpose:** To Address Continued Concerns Rising Out of Recent Cast Iron Incidents.

**Advisory:**

On October 11, 1991, Alert Notice (ALN-91-02) was issued reminding all operators of natural gas distribution systems to have a program to identify and replace cast iron piping systems that may threaten public safety. RSPA also informed operators of guidelines and computer programs that were available to help operators determine the serviceability of cast iron pipe and schedule its replacement or retirement. On June 26, 1992, Alert Notice (ALN-92-02) was issued informing pipeline operators that § 192.613 required each operator to have a procedure for continuing surveillance of its pipeline facilities to identify problems and take appropriate action concerning failures, leakage, history, corrosion, and other unusual operating and maintenance conditions. This procedure should also include surveillance of cast iron to identify problems and to take appropriate action concerning graphitization. The two Alert Notices remain relevant, and reaffirm the need for operators of gas cast iron distribution systems to maintain an effective cast iron management program.

PHMSA urges owners and operators to conduct a comprehensive review of their cast iron distribution pipeline systems and replacement programs and to accelerate pipeline repair, rehabilitation, and replacement of aging and high-risk pipe. Recent incidents, such as the deadly explosions in Philadelphia and Allentown, Pennsylvania involving cast iron pipe failures, have focused attention on our Nation's aging pipeline infrastructure and underline the importance of having valid methods for evaluating the integrity of pipelines to better ensure public safety. PHMSA recommends owners and operators of natural gas cast iron pipelines assure their replacement program models are based on relevant risk factors.

In addition, PIIMSA reminds owners and operators of cast iron distribution pipelines of their responsibility for the investigation of all failures and that each operator must establish procedures for analyzing incidents and failures, including laboratory examination of failed pipe segments and equipment, where appropriate, for the purpose of determining the causes of the failure and minimizing the possibility of a recurrence [192.617]. Owners and operators are required to review pipeline records, validate safe pipeline operating pressure levels and accelerate repairs and replacement where improvements in safety are necessary. The Distribution Integrity Management Program (DIMP) requires natural gas distribution companies to develop and implement DIMP for the pipelines they own, operate or maintain.

PIIMSA is asking owners and operators of cast iron distribution pipelines and state pipeline safety representatives to consider the following where improvements in safety are necessary:

- Request, review and monitor operator cast iron replacement plans and programs, actively encourage operators to develop and continually update and follow their plans, and consider establishment of mandated replacement programs.
- Establish accelerated leakage survey frequencies or leak testing considering results from failure investigations and environmental risk factors.
- Focus pipeline safety efforts on identifying the highest risk pipe.
- Use rate adjustments and flexible rate recovery mechanisms to incentivize pipeline rehabilitation, repair and replacement programs.
- Strengthen pipeline safety inspections, accident investigations and enforcement actions.
- Install interior/home methane gas alarms.

The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, was signed into law (Pub. L. 112-90) on January 3, 2012. Section 7 of the new law requires the U.S. Department of Transportation to measure every two years the progress that owners and operators of pipeline facilities have made in adopting and implementing their plans for the safe management and replacement of cast iron gas pipelines. Additionally, not later than December 31, 2013, the Secretary of Transportation must submit to Congress a report that — (1) identifies the total mileage of cast iron gas pipelines in the United States; and (2) evaluates the progress that owners and operators of pipeline facilities have made in implementing their plans for the safe management and replacement of cast iron gas pipelines.

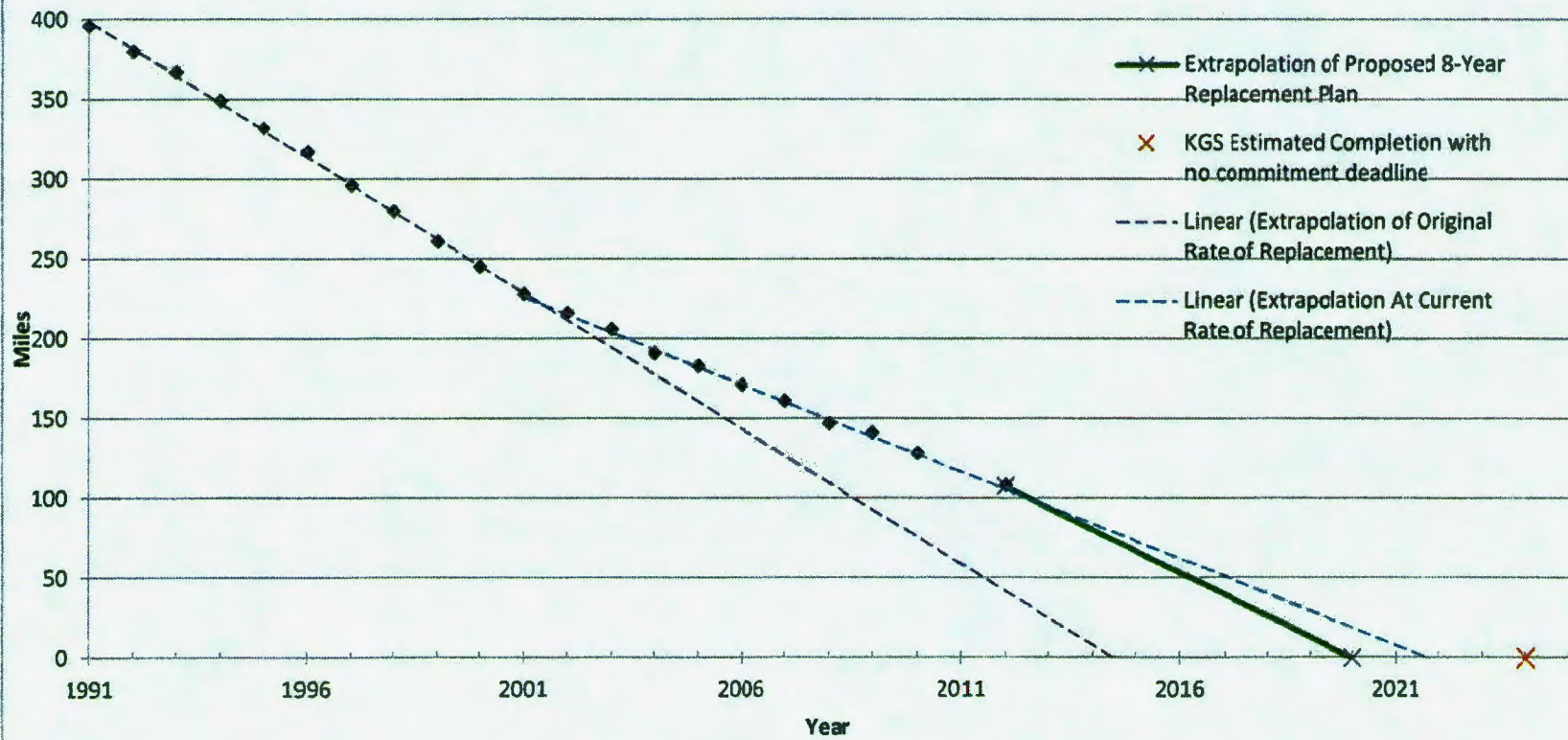
PIIMSA is committed to working with owners and operators of natural gas cast iron distribution pipelines and state pipeline safety representatives to ensure our Nation's pipeline infrastructure is safe and well-maintained.

Issued in Washington, DC, on March 20, 2012.

**Jeffrey D. Wiese,**  
Associate Administrator for Pipeline Safety.  
[FR Doc. 2012-7080 Filed 3-22-12; 8:45 am]  
BILLING CODE 4910-60-P

# LMH-2

## Kansas Gas Service - Miles of Cast Iron Pipe



THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS

BEFORE COMMISSIONERS: Keith R. Henley, Chairman  
Rich Kowalewski  
Margalee Wright

In the Matter of the Investigation )  
of the March 29, 1989, Natural Gas ) Docket No.  
Pipeline Safety Incident at 3030 ) 165,807-U  
Kentucky, Topeka, Kansas, involving) 89-KPLG-259-GI  
KPL Gas Service. )

EMERGENCY ORDER

NOW, the general matters of natural gas pipeline safety comes before the State Corporation Commission of the State of Kansas (Commission). Being duly advised of its files and all matters of record, the Commission finds and concludes as follows:

1. Pursuant to the provisions of K.S.A. 66-1,150 et. seq., the Commission has authority to review the subject matter of this issue.

2. In the past six (6) months, KPL-Gas Service (KPL) has experienced five (5) natural gas explosions in Kansas and Missouri. Four (4) of those explosions have involved private residences resulting in four (4) deaths and numerous injuries. At least two explosions involved cast iron natural gas pipelines.

3. The latest natural gas explosion occurred in Topeka, Kansas on March 29, 1989, destroying a single family residence located at 3030 Kentucky, killing one occupant and injuring the other two.

4. In the twelve (12) hours preceding the explosion, KPL personnel received two calls involving a possible natural gas leak in the area of 3030 and 3040 Kentucky. A preliminary investigation indicates that KPL crews may have failed to follow their procedures outlined in their Operations and Maintenance manual in classification and documentation of natural gas leaks.

5. A circumferential break was discovered in the cast iron main in front of the residence. After repairs were made, as the main was placed back in service, two (2) other leaks were discovered in cast iron gas pipelines within a one (1) block radius of the incident site.

6. Currently, KPL has more than four hundred (400) miles of cast iron natural gas pipeline in service in Kansas. In order to complete the Commission's investigation into the issues raised by the 3030 Kentucky incident, it is necessary to evaluate the current condition of the cast iron gas pipelines. The sampling of cast iron will provide valuable information regarding the condition of cast iron pipes so that an evaluation can be made as to what measures may be required for the maintenance and replacement of cast iron lines.

7. As a result of the March 29, 1989, incident in Topeka, Commission Staff has proposed several new steps be taken by KPL in the interest of public safety, including performing metallurgical analysis on cast iron natural gas lines and supplemental training of all service personnel with respect to service calls.

8. Therefore, the Commission concludes that in the interest of public safety, KPL shall take coupons (samples) from all cast iron natural gas lines uncovered in the course of operations and perform metallurgical analysis for deterioration, weaknesses or graphitization on all coupons. At least two hundred (200) coupons from separate locations shall be retrieved in the course of three (3) months. In instances where long sections of pipe are uncovered, samples shall be taken at an interval of fifty (50) feet. The results of the testing shall be submitted monthly to the Kansas Corporation Commission and shall include results from the four-state KPL-Gas Service system.

9. The Commission further concludes that KPL shall initiate supplemental training of all service personnel with respect to the proper procedures for completion of service calls, including but not limited to the location and classification of leaks. Special emphasis shall be placed on conducting a large enough number of bar hole tests to be certain that the area of highest natural gas concentration is being identified. Training shall begin no later than April 3, 1989, and shall include all service personnel and their supervisors. Certification of Satisfactory Completion of Training shall be submitted within thirty (30) days to the Kansas

Corporation Commission Pipeline Safety Section.

IT IS THEREFORE, BY THE COMMISSION ORDERED:

That KPL-Gas Service shall take samples of all cast iron natural gas lines uncovered in the course of operations and perform the tests above-described over the periods of time and in the manners as above-described and submit the results in the manner as set forth above.

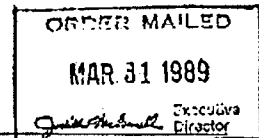
Further, KPL-Gas Service shall initiate and conduct supplemental training of all service personnel and their supervisors as set out above.

The Commission retains jurisdiction over the parties and subject matter herein for the purpose of entering such order or orders as it from time to time shall deem appropriate.

By the Commission It is So Ordered.

Henley, Chmn.; Kowalewski, Com.; Wright, Com.

DATED: MAR. 31 1989

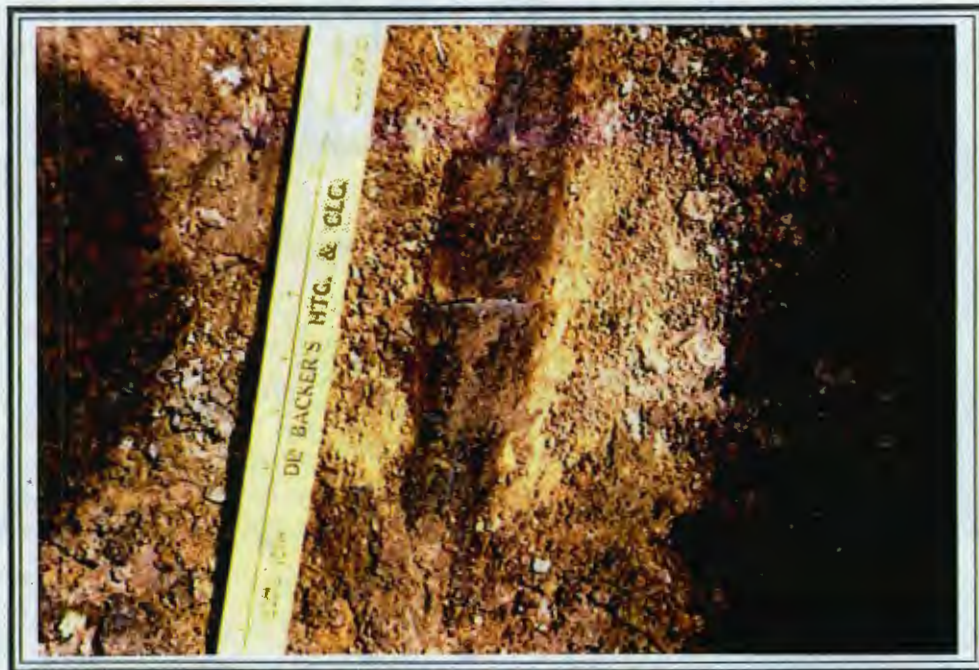


Judith McConnell  
Executive Director





**PHOTOGRAPH 15 - 3030 KENTUCKY - TOPEKA, KANSAS**  
Same as photo 12.

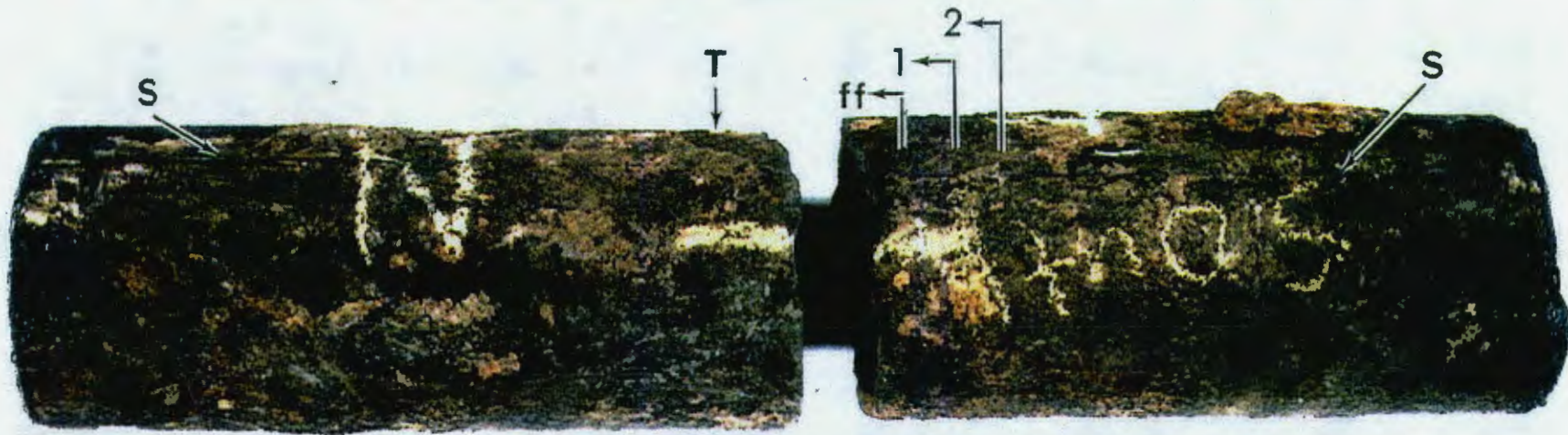


**PHOTOGRAPH 16 - 3030 KENTUCKY - TOPEKA, KANSAS**  
Same as photo 12.

NTSB Materials Laboratory



LMH-4



**NORTH**

**SOUTH**

- An overall side view of the two pipe sections with closely mated fracture in the middle.

Carrying Charge Calculation-First Two Years

Exhibit JTG-1

Budget Period	Budgeted Capital Expenditures	Less: Retirements	Cumulative Capital Expenditures	Depreciation Expense	Accumulated Depreciation	Cumulative Accumulated Deferred Income Taxes	Net Plant	Return	Total Budgeted Carrying Charges			
2012 July	\$ 731,219	\$ 247,984	\$ 731,219	\$ 1,124	\$ 1,124	\$ 77,545	\$ 652,551	\$ 6,428	\$ 7,551			
August	\$ 731,219	\$ 247,984	\$ 1,462,437	\$ 2,247	\$ 3,371	\$ 155,089	\$ 1,303,978	\$ 12,845	\$ 15,092			
September	\$ 731,219	\$ 247,984	\$ 2,193,656	\$ 3,371	\$ 6,741	\$ 232,634	\$ 1,954,281	\$ 19,250	\$ 22,621			
October	\$ 731,219	\$ 247,984	\$ 2,924,875	\$ 4,494	\$ 11,235	\$ 310,178	\$ 2,603,461	\$ 25,645	\$ 30,139			
November	\$ 731,219	\$ 247,984	\$ 3,656,093	\$ 5,618	\$ 16,853	\$ 387,723	\$ 3,251,517	\$ 32,029	\$ 37,646			
December	\$ 731,219	\$ 247,984	\$ 4,387,312	\$ 6,741	\$ 23,594	\$ 465,268	\$ 3,898,450	\$ 38,401	\$ 45,142			
2013 January	\$ 731,219	\$ 247,984	\$ 5,118,531	\$ 7,865	\$ 31,459	\$ 542,812	\$ 4,544,260	\$ 44,763	\$ 52,627			
February	\$ 731,219	\$ 247,984	\$ 5,849,749	\$ 8,988	\$ 40,447	\$ 620,357	\$ 5,188,946	\$ 51,113	\$ 60,101			
March	\$ 731,219	\$ 247,984	\$ 6,580,968	\$ 10,112	\$ 50,558	\$ 697,902	\$ 5,832,508	\$ 57,452	\$ 67,564			
April	\$ 731,219	\$ 247,984	\$ 7,312,187	\$ 11,235	\$ 61,794	\$ 775,446	\$ 6,474,947	\$ 63,781	\$ 75,016			
May	\$ 731,219	\$ 247,984	\$ 8,043,405	\$ 12,359	\$ 74,152	\$ 852,991	\$ 7,116,262	\$ 70,098	\$ 82,456			
June	\$ 731,219	\$ 247,984	\$ 8,774,624	\$ 13,482	\$ 87,635	\$ 930,535	\$ 7,756,454	\$ 76,404	\$ 89,886			
	\$ 8,774,624	\$ 2,975,803		\$ 87,635		\$ 930,535	\$ 7,756,454	\$ 498,208	\$ 585,842	Less: Original Request:	\$ 469,009	
										Increase in Revenue Requirement	\$ 116,833	
2013 July	\$ 731,219	\$ 247,984	\$ 9,505,843	\$ 21,525	\$ 109,159	\$ 84,957	\$ 9,311,727	\$ 91,724	\$ 113,248			Monthly Charge / Residential Customer
August	\$ 731,219	\$ 247,984	\$ 10,237,061	\$ 22,648	\$ 131,807	\$ 169,914	\$ 9,935,340	\$ 97,867	\$ 120,515			
September	\$ 731,219	\$ 247,984	\$ 10,968,280	\$ 23,772	\$ 155,579	\$ 254,870	\$ 10,557,831	\$ 103,998	\$ 127,770			
October	\$ 731,219	\$ 247,984	\$ 11,699,499	\$ 24,895	\$ 180,474	\$ 339,827	\$ 11,179,198	\$ 110,119	\$ 135,014			
November	\$ 731,219	\$ 247,984	\$ 12,430,717	\$ 26,019	\$ 206,493	\$ 424,784	\$ 11,799,441	\$ 116,229	\$ 142,247	3rd Year Surcharge	\$ 3,086,407	\$ 0.32
December	\$ 731,219	\$ 247,984	\$ 13,161,936	\$ 27,142	\$ 233,635	\$ 509,741	\$ 12,418,561	\$ 122,327	\$ 149,469	4th Year Surcharge	\$ 4,336,689	\$ 0.45
2014 January	\$ 731,219	\$ 247,984	\$ 13,893,155	\$ 28,266	\$ 261,900	\$ 594,698	\$ 13,036,557	\$ 128,415	\$ 156,680	5th Year Surcharge	\$ 5,586,971	\$ 0.58
February	\$ 731,219	\$ 247,984	\$ 14,624,373	\$ 29,389	\$ 291,289	\$ 679,654	\$ 13,653,429	\$ 134,491	\$ 163,880	6th Year Surcharge	\$ 6,837,254	\$ 0.71
March	\$ 731,219	\$ 247,984	\$ 15,355,592	\$ 30,513	\$ 321,802	\$ 764,611	\$ 14,269,179	\$ 140,557	\$ 171,069	7th Year Surcharge	\$ 8,087,536	\$ 0.84
April	\$ 731,219	\$ 247,984	\$ 16,086,811	\$ 31,636	\$ 353,438	\$ 849,568	\$ 14,883,804	\$ 146,611	\$ 178,247	8th Year Surcharge	\$ 9,337,818	\$ 0.97
May	\$ 731,219	\$ 247,984	\$ 16,818,029	\$ 32,760	\$ 386,198	\$ 934,525	\$ 15,497,306	\$ 152,654	\$ 185,414			
June	\$ 731,219	\$ 247,984	\$ 17,549,248	\$ 33,883	\$ 420,081	\$ 1,019,482	\$ 16,109,685	\$ 158,686	\$ 192,569			
	\$ 8,774,624	\$ 2,975,803		\$ 332,447		\$ 1,019,482	\$ 16,109,685	\$ 1,503,678	\$ 1,836,125			
										Increase in Revenue First Year over 2nd	\$ 1,250,282	
Annual Actg. Depreciation Rate			2.790%	Rate of Return		8.32%						
Monthly Actg. Depreciation Rate			0.233%	Rate of Return - Gross of Tax		11.82%						
				Monthly Rate of		0.99%						

Note: Total Retirements amounts based on KGS response to Staff DR #s 10, 11

**Kansas Gas Service  
Calculation of Accumulated Deferred Income Tax Liability  
Infrastructure Replacement Program**

Docket No. 12-KGSG-721-TAR  
Exhibit JTG-1A

**Tax Depreciation Calculation**

Budget Period	Budgeted Capital Expenditures	Cumulative 1st Year Capital Expenditures	Bonus Depreciation 2012 - 50%	Cumulative Bonus Dep.	Tax Basis Net of Bonus
2012 July	\$ 731,219	\$ 731,219	\$ 365,609	\$ 365,609	\$ 365,609
August	\$ 731,219	1,462,437	365,609	731,219	731,219
September	\$ 731,219	2,193,656	365,609	1,096,828	1,096,828
October	\$ 731,219	2,924,875	365,609	1,462,437	1,462,437
November	\$ 731,219	3,656,093	365,609	1,828,047	1,828,047
December	\$ 731,219	4,387,312	365,609	2,193,656	2,193,656
2013 January	\$ 731,219	5,118,531			2,924,875
February	\$ 731,219	5,849,749			3,656,093
March	\$ 731,219	6,580,968			4,387,312
April	\$ 731,219	7,312,187			5,118,531
May	\$ 731,219	8,043,405			5,849,749
June	\$ 731,219	8,774,624			6,580,968
	\$ 8,774,624				

Tax Rate MACRS -1st Yr	3.75%
MACRS Tax Dep.	\$ 246,786
Bonus Dep.	\$ 2,193,656
Total Tax Dep.	\$ 2,440,442
Less Book Dep.	\$ 87,635
Book/Tax Timing Diff.	\$ 2,352,808
Combined Tax Rate	39.55%

ADIT	\$ 930,535
<b>Monthly ADIT (First Year)</b>	<b>\$ 77,545</b>

Budget Period	Budgeted Capital Expenditures	Cumulative 2nd Year Capital Expenditures	Tax Basis (2nd Year)
2013 July	\$ 731,219	\$ 731,219	\$ 731,219
August	\$ 731,219	\$ 1,462,437	\$ 1,462,437
September	\$ 731,219	\$ 2,193,656	\$ 2,193,656
October	\$ 731,219	\$ 2,924,875	\$ 2,924,875
November	\$ 731,219	\$ 3,656,093	\$ 3,656,093
December	\$ 731,219	\$ 4,387,312	\$ 4,387,312
2014 January	\$ 731,219	\$ 5,118,531	\$ 5,118,531
February	\$ 731,219	\$ 5,849,749	\$ 5,849,749
March	\$ 731,219	\$ 6,580,968	\$ 6,580,968
April	\$ 731,219	\$ 7,312,187	\$ 7,312,187
May	\$ 731,219	\$ 8,043,405	\$ 8,043,405
June	\$ 731,219	\$ 8,774,624	\$ 8,774,624
	\$ 8,774,624		

Tax Rate MACRS -1st Yr	3.75%
Tax Rate MACRS -2nd Yr	7.22%
Cummulative MACRS Tax Dep.	\$ 804,128
Cummulative Bonus Dep.	\$ 2,193,656
Total Cummulative Tax Dep.	\$ 2,997,784
Less Cummulative Book Dep.	\$ 420,081
Cummulative Book/Tax Timing Diff.	\$ 2,577,703
Combined Tax Rate	39.55%

ADIT	\$ 1,019,482
<b>Monthly ADIT (Second Year)</b>	<b>\$ 84,957</b>

**Kansas Gas Service  
Infrastructure Replacement Program  
Development of Rates**

**Docket No. 12-KGSG-721-TAR  
Exhibit JTG-2**

Line No.	Customer Class	Pro-Forma Revenue - Docket No. 06-KGSG-1209-RTS	% of Revenue Requirement Responsibility	Cost Assignment	Customers Per - 06-KGSG-1209 Settlement - Cost of Service DJM-E5	Annual Cost per Customer	Monthly Charge
	(A)	(B)	(C)		(E)		
1	Residential Sales RS	\$ 182,113,692	71.3942%	\$ 418,258	572,794	\$ 0.7302	\$ 0.06
2	General Sales Svc. GS	40,798,857	15.9944%	\$ 93,702	51,074	\$ 1.8346	\$ 0.15
3	Gas Irrigation Sales GIS	137,875	0.0541%	\$ 317	182	\$ 1.7399	\$ 0.14
4	Small Generator Sales SGS	233,184	0.0914%	\$ 536	377	\$ 1.4206	\$ 0.12
5	Small Transportation STk	183,566	0.0720%	\$ 422	65	\$ 6.4860	\$ 0.54
6	Small Transportation STt	52,908	0.0207%	\$ 122	18	\$ 6.7507	\$ 0.56
7	Gen. Transportation GTk	6,373,664	2.4987%	\$ 14,638	2,341	\$ 6.2530	\$ 0.52
8	General Transportation GTt	3,234,446	1.2680%	\$ 7,429	837	\$ 8.8752	\$ 0.74
9	Gas Irrigation Transportation GITt	624,842	0.2450%	\$ 1,435	320	\$ 4.4846	\$ 0.37
10	1) Large Volume Transportation LVtk #	10,605,467	4.1577%	\$ 24,357	521	\$ 46.7513	\$ 3.90
11	2) Large Volume Transportation LVT #	9,071,707	3.5564%	\$ 20,835	157	\$ 132.7060	\$ 11.06
12	Wholesale Transportation WT t and k #	1,495,970	0.5865%	\$ 3,436	58	\$ 59.2374	\$ 4.94
13	Sales Service for Resale SSR	1,060	0.0004%	\$ 2	1	\$ 2.4345	\$ 0.20
14	Kansas Gas Supply D	154,589	0.0606%	\$ 355	4	\$ 88.7605	\$ 7.40

15 **Total** \$ 255,081,827 100% \$ 585,842

**Kansas Gas Service  
Infrastructure Replacement Program  
Development of Rates**

**Docket No. 12-KGSG-721-TAR  
Exhibit JTG-2A**

Line No.	Customer Class	Pro-Forma Revenue - Docket No. 06-KGSG-1209-RTS	% of Revenue Requirement Responsibility	Cost Assignment	Customers Per - 06-KGSG-1209 Settlement - Cost of Service DJM-E5	Annual Cost per Customer	Monthly Charge
	(A)	(B)	(C)		(E)		
1	Residential Sales RS	\$ 182,113,692	71.3942%	\$ 1,310,887	572,794	\$ 2.2886	\$ 0.19
2	General Sales Svc. GS	40,798,857	15.9944%	\$ 293,677	51,074	\$ 5.7500	\$ 0.48
3	Gas Irrigation Sales GIS	137,875	0.0541%	\$ 992	182	\$ 5.4530	\$ 0.45
4	Small Generator Sales SGS	233,184	0.0914%	\$ 1,679	377	\$ 4.4523	\$ 0.37
5	Small Transportation STk	183,566	0.0720%	\$ 1,321	65	\$ 20.3283	\$ 1.69
6	Small Transportation STt	52,908	0.0207%	\$ 381	18	\$ 21.1578	\$ 1.76
7	Gen. Transportation GTK	6,373,664	2.4987%	\$ 45,879	2,341	\$ 19.5979	\$ 1.63
8	General Transportation GTt	3,234,446	1.2680%	\$ 23,282	837	\$ 27.8162	\$ 2.32
9	Gas Irrigation Transportation GITt	624,842	0.2450%	\$ 4,498	320	\$ 14.0554	\$ 1.17
10	1) Large Volume Transportation LVTK #	10,605,467	4.1577%	\$ 76,340	521	\$ 146.5260	\$ 12.21
11	2) Large Volume Transportation LVT #	9,071,707	3.5564%	\$ 65,300	157	\$ 415.9221	\$ 34.66
12	Wholesale Transportation WT t and k #	1,495,970	0.5865%	\$ 10,768	58	\$ 185.6597	\$ 15.47
13	Sales Service for Resale SSR	1,060	0.0004%	\$ 8	1	\$ 7.6301	\$ 0.64
14	Kansas Gas Supply D	154,589	0.0606%	\$ 1,113	4	\$ 278.1898	\$ 23.18

15 Total \$ 255,081,827 100% \$ 1,836,125

AFUDC Rate (Avg 2010-2012) 4.93%  
 Monthly Rate 0.41%

Docket No. 12-KGSG-721-TAR  
 Staff Exhibit JTG-3

**GSRs -- AFUDC**

Month	1	2	3	4	5	6	7	8	9	10	11	12
Capital Investment	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219
AFUDC Calculation	\$ 1,503	\$ 4,517	\$ 7,542	\$ 5,290	\$ 1,503	\$ 4,517	\$ 7,542	\$ 5,290	\$ 1,503	\$ 4,517	\$ 7,542	\$ 5,290
Total Rate Base Additions	\$ 732,722	\$ 735,735	\$ 738,761	\$ 736,509	\$ 732,722	\$ 735,735	\$ 738,761	\$ 736,509	\$ 732,722	\$ 735,735	\$ 738,761	\$ 736,509
Total Cumulative Rate Base	\$ 732,722	\$ 1,468,457	\$ 2,207,218	\$ 2,943,727	\$ 3,676,449	\$ 4,412,184	\$ 5,150,945	\$ 5,887,454	\$ 6,620,176	\$ 7,355,911	\$ 8,094,672	\$ 8,831,180

**IRP -- No AFUDC**

Month	1	2	3	4	5	6	7	8	9	10	11	12
Capital Investment	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219	\$ 731,219
Total Cumulative Rate Base	\$ 731,219	\$ 1,462,437	\$ 2,193,656	\$ 2,924,875	\$ 3,656,093	\$ 4,387,312	\$ 5,118,531	\$ 5,849,749	\$ 6,580,968	\$ 7,312,187	\$ 8,043,405	\$ 8,774,624

Total Yearly AFUDC Savings \$ 56,556  
 Total 8 Year AFUDC Savings \$ 452,452

Note: Average AFUDC Rate Based on 2010-2012 Rate, as provided in response to Staff Data Request No. 4  
 Note: AFUDC Calculation methodology and timing is per KGS response to Staff Data Request No. 6

**Kansas Corporation Commission**  
Docket Number 12-KGSG-721-TAR  
Information Request

Data Request: 721-KCC-04::AFUDC Rates  
Company Name: Kansas Gas Service, a Division of ONEOK, Inc.  
Request Date: Apr 19, 2012  
Date Information Needed: Apr 27, 2012  
Requested By: Grady, Justin

Page 1 of 1

Please provide KGS' AFUDC rates for the following time periods:

1. The most recent rate, the quarterly rate used for the last three years.

The AFUDC rates for the periods requested are:

	Annual	Monthly
2012	3.945%	0.329%
2011 January - March	6.221%	0.518%
2011 April - December	6.070%	0.5058%
2010	5.198%	0.433%
2011	5.661%	0.472%

Prepared By: Whitlock, Don

**Verification of Response**

I have read the foregoing Information Request and answer(s) thereto and find answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request.

Signed: \_\_\_\_\_

*David L. Wittauer*

Date: \_\_\_\_\_

*April 27, 2012*



**Kansas Corporation Commission**  
Docket Number 12-KGSG-721-TAR  
Information Request

Data Request: 721-KCC-05::AFUDC Calculation - Surcharge  
Company Name: Kansas Gas Service, a Division of ONEOK, Inc.  
Request Date: Apr 19, 2012  
Date Information Needed: Apr 27, 2012  
Requested By: Grady, Justin

Page 1 of 1

Please confirm that KGS agrees to not calculate AFUDC on the projects included in the proposed infrastructure replacement surcharge while these projects are in construction work in progress (before they are placed in service).

KGS agrees not to calculate AFUDC on projects included in the infrastructure replacement surcharge while these projects are in construction work in progress - if the Commission approves the surcharge mechanism as proposed by KGS.

Prepared By: Dittmore, David

**Verification of Response**

I have read the foregoing Information Request and answer(s) thereto and find answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request.

Signed: \_\_\_\_\_

*David Wittman*

Date: \_\_\_\_\_

*April 27, 2012*

**Kansas Corporation Commission**  
Docket Number 12-KGSG-721-TAR  
Information Request

Data Request: 721-KCC-06::Estimate of Time in CWIP  
Company Name: Kansas Gas Service, a Division of ONEOK, Inc.  
Request Date: Apr 19, 2012  
Date Information Needed: Apr 27, 2012  
Requested By: Grady, Justin

Page 1 of 1

Can KGS give an estimate of the amount of time that the projects included in the proposed infrastructure replacement program would typically be held in construction work in progress (the amount of time that normally AFUDC would accrue and accumulate) before classified as placed in plant in service?

Typical projects within the proposed infrastructure replacement program would be 90 to 120 days start to in-service.

AFUDC is applied under the half month convention as follows:

Month One - AFUDC is applied at ½ the monthly rate applied to all charges;

Month Two - AFUDC is applied at ½ the monthly rate applied to all month two charges and the full monthly rate to all month one charges;

Month Three - AFUDC is applied at ½ the monthly rate applied to all month three charges and the full monthly rate to all month one and month two charges;

Month Four (placed in service) - AFUDC is applied at ½ the monthly rate applied to all month one, month two and month three charges and ¼ the monthly rate to any month four charges.

Prepared By: Dittmore, David

**Verification of Response**

I have read the foregoing Information Request and answer(s) thereto and find answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief, and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request.

Signed: \_\_\_\_\_

*David Dittmore*

Date: \_\_\_\_\_

*April 27, 2012*

**Kansas Corporation Commission**  
Docket Number 12-KGSG-721-TAR  
Information Request

Data Request: 721-KCC-10::Gross Plant Value of Cast Iron Mains  
Company Name: Kansas Gas Service, a Division of ONEOK, Inc.  
Request Date: May 12, 2012  
Date Information Needed: May 21, 2012  
Requested By: Grady, Justin

Page 1 of 1

Regarding the Cast Iron Mains that KGS is proposing to replace in the event that the Infrastructure Replacement Surcharge is approved by the Commission, please provide the most recent available Gross Plant value of this Plant on KGS's books.

The Gross Plant for Cast Iron Mains is \$20,592,942.

Prepared By: Eaton, Lorna

**Verification of Response**

I have read the foregoing Information Request and answer(s) thereto and find answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request.

Signed: \_\_\_\_\_

*David Dittmann*

Date: \_\_\_\_\_

*May 15, 2012*

**Kansas Corporation Commission**

Docket Number 12-KGSG-721-TAR

**Information Request**

Data Request: 721-KCC-11::Gross Plant Value of Bare Steel Mains

Company Name: Kansas Gas Service, a Division of ONEOK, Inc.

Request Date: May 12, 2012

Date Information Needed: May 21, 2012

Requested By: Grady, Justin

Page 1 of 1

Regarding the Bare Steel Main that KGS is proposing to replace in the event that the Infrastructure Replacement Surcharge is approved by the Commission, please provide the most recent available Gross Plant value of this Plant on KGS's books.

KGS has more than 40 miles of Bare Steel Main. Based on the average plant value per mile, we have calculated that 40 miles of Bare Steel Main that KGS is planning on replacing has a plant value of approximately \$3,135,000.

Prepared By: Eaton, Lorna

**Verification of Response**

I have read the foregoing Information Request and answer(s) thereto and find answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request.

Signed: \_\_\_\_\_

*Wes D. Hume*

Date: \_\_\_\_\_

*May 15, 2012*

## CERTIFICATE OF SERVICE

12-KGSG-721-TAR

I, the undersigned, hereby certify that a true and correct copy of the above and foregoing Notice of Filing of Staff Report and Recommendation was served by electronic service on this 25th day of May, 2012, to the following parties who have waived receipt of follow-up hard copies.

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**CERTIFICATE OF SERVICE**

12-KGSG-721-TAR

  
\_\_\_\_\_  
Pamela Griffith  
Administrative Specialist