

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NEBRASKA

IN THE MATTER OF THE APPLICATION OF)
SOURCEGAS DISTRIBUTION LLC FOR AN ORDER)
AUTHORIZING IT TO INCREASE THE SYSTEM) DOCKET NO. NG-0078.2
SAFETY AND INTEGRITY RIDER CHARGES)

**2016 PROJECTS
REFLECTED IN THE
SYSTEM SAFETY AND INTEGRITY RIDER
FOR SOURCEGAS DISTRIBUTION LLC
IN NEBRASKA**



October 1, 2015

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Filed October 1, 2015

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NEBRASKA

IN THE MATTER OF THE APPLICATION OF)
SOURCEGAS DISTRIBUTION LLC, GOLDEN,)
COLORADO, SEEKING AN ORDER AUTHORIZING IT) DOCKET NO. NG-0078.2
TO PUT INTO EFFECT A SYSTEM SAFETY AND)
INTEGRITY RIDER TARIFF AND A SYSTEM SAFETY)
AND INTEGRITY RIDER CHARGE)

**2016 PROJECTS REFLECTED IN THE
SYSTEM SAFETY AND INTEGRITY RIDER
FOR SOURCEGAS DISTRIBUTION LLC IN NEBRASKA**

I. INTRODUCTION

As set forth on First Revised Sheet Nos. 11-15 of the Nebraska Gas Tariff No. 1 (the “Tariff”) of SourceGas Distribution LLC (“SourceGas Distribution” or the “Company”), Residential Service, Small Commercial Service and Large Commercial Service under Rate Schedules CGS (Choice Gas Service) and ACGS-NSS (Agricultural Choice Gas Service – Non-Seasonal Service) are subject to a System Safety and Integrity Rider (“SSIR”) designed to collect Eligible System Safety and Integrity Costs. The Nebraska Public Service Commission (the “Commission”) approved the SSIR Tariff, with an effective date of November 1, 2014, by its Order Approving Application, In Part, entered in this docket on October 28, 2014, and its Order Modifying Order Approving Application, in Part, entered in this docket on November 4, 2014.

Under the Commission-approved SSIR Tariff, the Company is authorized to collect the revenue requirement of Eligible System Safety and Integrity Costs projected for the period January 1, 2016 through December 31, 2016 through the Safety and Integrity Charge (the “SSIR Charge”) over the period February 1, 2016, through January 31, 2017. The SSIR Charge to be applied to each Rate Schedule is as set forth on the Schedule of Rates and Other Charges, Sheet No. 7 of the Tariff.

As approved by the Commission, the Company is authorized to file this SSIR application for 2016 costs on or before October 1, 2015 with an implementation date of February 1, 2016. The SSIR Tariff requires that this application include pertinent information and supporting data related to eligible SSIR costs, including, at a minimum, SSIR Project descriptions and scopes, SSIR Project costs, and in-service dates.

The SSIR Tariff defines Eligible System Safety and Integrity Costs to mean:

- 1) A return, at a percentage equal to the Company’s currently authorized weighted average cost of capital grossed up for taxes, on the projected increase in the

- jurisdictional component of the month ending net plant in-service balances associated with the Projects for the particular calendar year in which the SSIR Charge shall be in effect, exclusive of all plant in-service included in the determination of the revenue requirements approved in the Company’s last general rate case;
- 2) The plant-related ownership costs associated with such incremental plant investment, including depreciation, accumulated deferred income taxes, and all taxes including income taxes and property taxes; and
 - 3) The projected jurisdictional component of the operation and maintenance expenses related to the Projects for the particular year in which the SSIR Charge shall be in effect.

The return and income taxes and plant related costs associated with improvements or upgrades to facilities, made at the discretion of the Company to extend service or for future growth that is not specifically required by a statute or regulation, shall be excluded from Eligible System Safety and Integrity Costs.

As set forth in the SSIR Tariff, SSIR Projects (also referenced in this filing as “Projects”) mean:

- i. Projects to comply with Code of Federal Regulations (“CFR”) Title 49 (Transportation), Part 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards), Subpart O (Gas Transmission Pipeline Integrity Management), including Projects in accordance with the Company’s transmission integrity management program (“TIMP”) and Projects in accordance with State enforcement of Subpart O and the Company’s TIMP;
- ii. Projects to comply with CFR Title 49 (Transportation), Part 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards), Subpart P (Gas Distribution Pipeline Integrity Management), including Projects in accordance with the Company’s distribution integrity management program (“DIMP”) and Projects in accordance with State enforcement of Subpart P and the Company’s DIMP;
- iii. Projects to comply with final rules and regulations of the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (“PHMSA”) that become effective on or after the filing date of the application requesting approval of the SSIR; and

- iv. Facility relocation projects with a per-Project total cost of \$20,000 or more, exclusive of all costs that have been, are being, or will be reimbursed otherwise, that are required due to construction or improvement of a highway, road, street, public way or other public work by or on behalf of the United States, the State of Nebraska, a political subdivision of the State of Nebraska or another entity having the power of eminent domain.

As shown in Exhibit 4, Table 3, Page 3 of 3 to this application, SourceGas Distribution has identified 40 individually numbered Capital SSIR Projects and no Operations and Maintenance Expense SSIR Projects for the instant filing. In total, SourceGas Distribution's projected capital expenditures for 2016 SSIR Projects total \$21,815,231.

All of the 40 Projects will be in service in 2016.

Additionally, the Company each year encounters the need to conduct facility relocation projects in connection with municipal infrastructure projects. Municipalities typically do not finalize their plans for infrastructure projects for a particular calendar year, however, until late in the previous calendar year or early in the calendar year in which those projects will be conducted. Consequently, although the Company is aware of several potential municipal infrastructure projects in 2016 (*see* Section II.K below) that may require the Company to conduct facility relocation projects the costs of which are Eligible System Safety and Integrity Costs for recovery through the SSIR Tariff, those Projects are not sufficiently definitive at this time for the Company to request prospective recovery of Eligible System Safety and Integrity Costs through this filing. *See* Project No. 40 (Nebraska Highway Relocation Program) on *Exhibit 4, Table 3, Page 3 of 3* to this application. Therefore, as part of its quarterly surveillance reports, the Company will provide updates of its facility relocation projects in connection with municipal infrastructure projects and, through its October 1, 2016 annual filing, will seek to recover the Eligible System Safety and Integrity Costs associated with those projects. Eligible System Safety and Integrity Costs associated with completed 2015 highway relocation projects have been included in this filing.

As required by the SSIR Tariff, SourceGas Distribution analyzed these SSIR Projects based upon objective criteria such as, but not limited to: specific regulatory requirements; threat assessment; corrosion control analysis; pipeline vintage; pipeline material; pipeline design and class location; pipeline configuration and segmentation; pipeline system constraints; pipeline replacement history; population density; pipeline maintenance and internal inspection history; pipeline piggability; existence and reliability of pipeline asset and testing records; pipeline leakage and other incident history; subject matter expert knowledge; Project timeframe; weather and climate constraints on the construction season; permitting constraints; probability of pipeline testing failures and dewatering constraints; service outage management; and pipeline source of supply and availability of alternate gas supply.

As part of SourceGas Distribution’s analysis, the SSIR Tariff requires the Company to identify and describe the proposed SSIR Projects that are for high-risk gas infrastructure by providing its risk assessment for each such SSIR Project including, if applicable, the probability of failure, the consequences of failure for the SSIR Project and how the Company prioritized the SSIR Project for which it seeks recovery. There are no SSIR Projects included within this filing that fall into this category because none of the 40 SSIR Projects is being done within a high consequence area (“HCA”).¹

II. 2016 SSIR PROJECTS

A. Replacement of Bare Steel Distribution Main

1. Background

SourceGas Distribution operates approximately 4,763 miles of distribution system in Nebraska, of which approximately 649 miles are bare steel distribution main with various dates of installation ranging from the 1930s to approximately 1960. Although age alone does not determine the integrity of a pipeline system, some older pipeline facilities that are constructed of certain materials, including bare steel, may have degraded over time. Even though these bare steel distribution mains are cathodically protected,² it becomes increasingly difficult to maintain effective corrosion protection because of the age of the system. Compared with coated steel pipelines, bare steel pipelines corrode at a higher rate because there is no coating to serve as a barrier between the steel and the soil. Also, many pipeline segments may not meet today’s pipeline construction standards, and some have been exposed to additional threats, such as excavation damage. In addition, there are some early vintage steel pipelines in certain areas that may pose risks because of incomplete records or inadequate construction practices. Based upon known data, including installation records and construction methods, leakage history, cathodic protection data, damage history and population density, SourceGas Distribution’s DIMP identifies bare steel segments that are higher risk.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified bare steel distribution main pipeline segments requiring remediation under CFR Title 49, Part 192, Subpart P, DIMP. Section 192.1007 requires a

¹ A HCA, in general, is a populated building or outdoor area located within the Potential Impact Radius of a transmission pipeline meeting the occupancy requirements as defined in Section 192.903. Pipeline nominal diameter and maximum allowable operating pressure (MAOP) are the two key attributes that define the Potential Impact Radius of each transmission pipeline segment.

² Cathodic protection is an electrochemical process used to mitigate corrosion of buried steel structures, such as natural gas pipelines made from steel.

pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

As required by Section 192.1007, objective criteria that SourceGas Distribution analyzed for Bare Steel Main Distribution Replacement Projects are: pipeline vintage; pipeline material; pipeline design; population density; the existence and reliability of pipeline asset and testing records; pipeline leakage and other incident history; and subject matter expert knowledge.

3. Project Description

SourceGas Distribution has identified six specific bare steel distribution main replacement projects scheduled to be completed in 2016. Typically for distribution line replacement projects, polyethylene pipe is used for both the distribution mains and associated service lines unless the system is required to operate above 100 pounds per square inch gauge (“psig”). If the system is required to operate above 100 psig, then steel pipe with fusion bonded epoxy coating is utilized. The total capital expenditure for these seven SSIR Projects in 2016 is estimated to be \$894,073.

4. Specific Projects

a) Gering, Nebraska – Bare Main Replacement – Block 227

This SSIR Project will replace 750 feet of two-inch steel main. The existing main has disbonded coating that defeat attempts to bring the cathodic protection up to minimum standards. The pipe to soil readings on this old segment of main fluctuate with soil conditions but routinely fall below the minimum acceptable level of -0.850 millivolt. This main will be replaced with two-inch polyethylene (“PE”) 2406 pipe. In addition, there are 21 customer services on this segment that will be replaced with PE as well. Most of the meters are in the alley and will be moved to the house wherever possible to protect them from third-party damage or outside forces damage. The estimated total capital cost of this SSIR Project is \$105,869. The anticipated in-service date is July 31, 2016.

b) Gering, Nebraska – Bare Main Replacement – Blocks 225 and 226

This SSIR Project will replace two blocks of main and services. 750 feet of two-inch steel main will be replaced. The existing main has disbonded coating that defeat attempts to bring the cathodic protection up to minimum standards. The pipe to soil readings on this old segment of main fluctuate with soil conditions but routinely fall below the minimum acceptable level of -0.850 millivolt. This main will be replaced with two-inch PE2406. In addition, there are 15 customer services on this segment that will be replaced with PE as well. Most of the meters are

in the alley and will be moved to the house wherever possible to protect them from third-party damage or outside forces damage. The estimated total capital cost of this SSIR Project is \$37,266. The anticipated in-service date is July 31, 2016.

c) **Gering, Nebraska – Bare Main Replacement – Country Club Road**

This SSIR Project will replace 2,100 feet of one and one quarter-inch steel main. The existing pipe has disbonded coating and compression fittings that defeat attempts to bring the cathodic protection up to minimum standards. The pipe to soil readings on this old segment of main fluctuate with soil conditions but routinely fall below the minimum acceptable level of -0.850 millivolt. The main will be replaced with two inch abrasion resistant overlay (“ARO”) steel pipe. The main runs along the south side of Country Club Road. To eliminate costs due to concrete removal and landscape restoration, the new two-inch PE pipe will be bored in parallel to the existing main. There will be eight tie ins to tie into existing mains that are currently coming off the non-compliant one and one quarter inch steel main. The estimated total capital cost of this 2016 SSIR Project is \$155,129. The anticipated in-service date is September 30, 2016.

d) **Sidney, Nebraska – Bare Main Replacement – Blocks 116, 117, 118, 119, 171 and 172**

This SSIR Project will replace approximately 3,700 feet of two-inch bare steel main of unknown grade and wall thickness and approximately 4,300 feet of one and one quarter-inch steel service lines. The piping in this neighborhood was installed in the early 1950s and cathodic protection is difficult to maintain. The current services are saddle-tapped to the main with compression couplings and curb stops. The existing two-inch steel main will be replaced with two-inch PE and the one and one quarter-inch steel service lines will be replaced with one-inch PE. The estimated total capital cost of this 2016 SSIR Project is \$333,905. The anticipated in-service date is October 31, 2016.

e) **Sidney, Nebraska – Bare Main Replacement – Skeeter Flats**

This SSIR Project will replace approximately 1,250 feet of one and one quarter-inch steel main and 690 feet of two-inch bare steel main of unknown grade and wall thickness as well as approximately 1,900 feet of one and one quarter-inch steel service lines. The piping in this neighborhood was installed in the early 1950s and cathodic protection is difficult to maintain. The current services are saddle-tapped to the main with compression couplings and curb stops. The existing one and one quarter inch and two-inch steel main will be replaced with two-inch PE and the one and one quarter-inch steel service lines will be replaced with one-inch PE. The estimated total capital cost of this 2016 SSIR Project is \$162,538. The anticipated in-service date is November 30, 2016.

f) **Sidney, Nebraska – Bare Main Replacement – Blocks 142, 143 and 144**

This SSIR Project will replace approximately 1,730 feet of two-inch bare steel main of unknown grade and wall thickness and approximately 1,370 feet of one and one quarter-inch steel service lines. The piping in this neighborhood was installed in the early 1950s and cathodic protection is difficult to maintain. The current services are saddle-tapped to the main with compression couplings and curb stops. The existing two-inch steel main will be replaced with two-inch PE and the one and one quarter-inch steel service lines will be replaced with one-inch PE. The estimated total capital cost of this 2016 SSIR Project is \$99,366. The anticipated in-service date is October 31, 2016.

B. Replacement of Transmission Pipeline

1. Background

SourceGas Distribution operates approximately 1,207 miles of transmission system in Nebraska, of which up to 419 miles are believed to have been installed prior to 1960 and certain segments are believed to have been installed as early as the 1930s. Although age alone does not determine the integrity of a pipeline system, some older pipeline facilities that are constructed of certain materials and with certain coatings may have degraded over time. Even though these transmission lines are cathodically protected, it becomes increasingly difficult to maintain effective corrosion protection because of the age of the system. Based upon known data, including installation records and construction methods, leakage history, cathodic protection data, damage history and population density, SourceGas Distribution's TIMP identifies transmission pipeline segments that are higher risk.

2. SSIR Project Classification

a) **Classification Under SSIR Tariff**

SourceGas Distribution identified transmission pipeline segments displaying safety threats requiring remediation under CFR Title 49, Part 192, Subpart O, TIMP. Section 192.917 requires a pipeline operator to evaluate and remediate pipeline segments where corrosion has been identified that could adversely affect the integrity of the line.

b) **Objective Criteria Analyzed**

The other objective criteria that SourceGas Distribution analyzed for this Project are: corrosion control analysis; pipeline material; pipeline configuration and segmentation; pipeline piggability; pipeline leakage and other incident history; subject matter expert knowledge; Project timeframe; weather and climate constraints on the construction season; permitting constraints; service outage management; and pipeline source of supply and availability of alternate gas supply.

3. Project Description

SourceGas Distribution has identified one specific transmission replacement project scheduled to be completed in 2016. The total capital expenditure for this SSIR Project is estimated to be \$577,677.

4. Specific Project

a) Sutton, Nebraska – Deshler to Chester Lateral Mainline Replacement

This SSIR Project has changed in scope since the Company's filing on November 10, 2014. This Project involves the pipeline that supplies natural gas to the town of Chester, Nebraska, and rural agriculture customers in that area. As described in the 2014 filing, the Company expected to change out approximately 42,250 feet of two-inch coated steel bare main with four-inch PE pipe because the condition of the coating of the existing pipe is poor and it is difficult to maintain effective cathodic protection at acceptable levels. The original estimated cost of this SSIR Project was \$888,040 and it had a scheduled in-service date of December 31, 2015.

During 2015, the Company and Tallgrass Interstate Gas Transmission LLC ("TIGT") discussed developing an alternative solution to replacing 42,250 feet of the existing line. As a result, the Company plans to re-route the primary feed into the Chester area from a different location that will use an existing three-inch steel pipeline that will be connected to a TIGT transmission line. This alternative approach will allow the Company to retire the existing 42,250 feet of pipeline that is the current primary feed into the Chester area instead of replacing it as originally planned.

To facilitate this new delivery feed into the Chester area, TIGT will be required to install a Mainline Border Station to provide gas at the new location. Additionally, the Company will be required to install approximately 16,750 feet of two-inch PE pipe to serve existing rural customers through farm taps off the TIGT transmission line.

This alternative solution, which resulted in a Project scope change, eliminates the need to install approximately 25,500 feet of pipe, resulting in a significant cost savings. Time was needed for the Company's discussions with TIGT, and, as a result, this Project was delayed to 2016. The change in timing will be reflected in the Company's reconciliation of 2015 SSIR Projects. The updated total capital cost of this SSIR Project is estimated at \$577,677, with a scheduled in-service date of September 30, 2016.

C. Barricades

1. Background

These SSIR Projects involve the installation of barricades to protect meter, regulator and valve settings from outside force damage. This threat is largely caused by meter loops being at the customer's property line, in an alley or adjacent to the street. In addition, the widening of streets and highways, increased utilization of agricultural land, and increased traffic from both mechanized farm equipment and motor vehicles have rendered many meters more vulnerable to outside force damage. Often times, these meters are bumped by vehicles backing out of garages or hit alongside a street that result in a bent meter or leak to the meter loop. Alongside meter loops, regulator and valve sets also are susceptible to outside force damage both in city limits and rural areas. The occurrence of such damage has increased over the years, and Company records show that the greatest risk to its distribution system is outside force damage, much of which is a result of meters being hit by vehicles and farm equipment.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified these facilities requiring remediation under CFR Title 49, Part 192, Subpart P, DIMP. Section 192.1007 requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

Specific data and reporting mechanisms developed under SourceGas Distribution's DIMP clearly has indicated that outside force damage, particularly to above ground meters, is a frequent occurrence. In 2015, SourceGas Distribution experienced 244 instances of outside force damage to date to its distribution system in Nebraska, with 177 of these instances being related to hit meters. CFR Title 49, Part 192, Section 192.353 requires a pipeline operator to protect meters from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated.

3. Project Description

Barricades are structures typically fabricated from pipe material and resemble a fence or cage-like structure around the meter. For most meter applications, SourceGas Distribution installs prefabricated meter barricades manufactured with two-inch pipe. Larger meters, regulator stations or valve settings may require custom fabrication to properly fit and protect the asset. The locations requiring the installation of a barricade are determined by field personnel working in conjunction with the Company's integrity management members to determine which facilities

are at high risk. Factors in this determination include, but are not limited to, previous damage history, proximity to roadways, field observations and system operating pressures. SourceGas Distribution plans to install approximately 215 barricades in 2016. The total capital expenditure for barricade installations in 2016 is estimated to be \$198,897. All barricade SSIR Projects listed are expected to be completed by December 31, 2016.

4. Specific Projects

- a) **Sutton** – \$46,873
- b) **Holdrege**³ – \$30,117
- c) **Kearney** – \$25,175
- d) **Albion** – \$44,151
- e) **Scottsbluff** – \$52,581

D. Cathodic Protection and Corrosion Prevention

1. Background

Cathodic protection infrastructure is to be applied to all steel pipelines according to PHMSA regulations published in 49 CFR Section 192.451. SourceGas Distribution meets this requirement by utilizing galvanic anode applications as well as Impressed Current Cathodic Protection. Cathodic protection is an electrochemical process used to protect steel structures in contact with soil. The soil is the electrolyte portion of the corrosion cell with the pipeline as the cathode of the electrical circuit. The intent in the application of cathodic protection is to convert the oxygen in the soil to a hydroxyl ion thus causing the environment surrounding the pipeline to become more alkaline. Steel tends to passivate in alkaline environments which result in very low corrosion rates. Magnesium anodes are installed in situations where a small amount of electrical current is needed to achieve adequate cathodic protection levels. Cathodic protection rectifiers with graphite anodes, as an Impressed Current Cathodic Protection system, are installed when a larger amount of electrical current is needed to achieve adequate cathodic protection levels. SourceGas Distribution's steel pipeline system varies from bare Top of Ground ("TOG") to buried lines with various types of coatings in a variety of conditions. The electrical current requirement for each type of installation, whether bare or coated, covers a wide range. The cathodic protection levels are measured periodically as required along the pipeline. The periodic surveys will readily indicate deficiencies in the cathodic protection system. These deficiencies

³ Please note that since the Company's filing on November 10, 2014, the McCook Division has become part of the Holdrege Division, and thus McCook will no longer be identified as a separate SSIR Project here.

can be indicative of active corrosion, dis-bonded coating, anode degradation or shorted pipeline casings.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

Projects requiring cathodic protection remediation under CFR Title 49, Part 192, may be subject to either Subpart O (TIMP) or Subpart P (DIMP) depending on whether the pipe segment is classified as transmission or distribution pipe. For transmission segments, Section 192.917 requires a pipeline operator to evaluate and remediate pipeline segments where corrosion has been identified that could adversely affect the integrity of the line. Remediation of distribution segments is specified in Section 192.1007, which requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

In addition to Sections 192.917 and 192.1007, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.463, which requires operators to maintain a level of effective cathodic protection and Section 192.467, which requires that each pipeline must be electrically isolated from metallic casings.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: corrosion control analysis; pipeline vintage; pipeline material; the existence and reliability of pipeline asset and testing records; pipeline leakage and other incident history; subject matter expert knowledge; and Project timeframe.

3. Project Description

Three cathodic protection SSIR Projects have been identified by SourceGas Distribution that require the replacement or installation of anode ground beds.

The total capital expenditure for these three SSIR Projects in 2016 is estimated to be \$210,554. All three cathodic protection SSIR Projects are expected to be completed by October 31, 2016.

4. Specific Projects

a) Holdrege, Nebraska – Install Anode Beds at Eight Locations Throughout the Holdrege Division

Cathodic protection surveys taken in 2015 have indicated that the natural gas distribution systems designated as line segments 270-2270, 270-2174 and 470-1639 have currently fallen below or are at risk of falling below cathodic protection compliance levels within the next 12-months. SourceGas Distribution's corrosion technicians have determined that eight anode

ground beds are needed to correct and maintain these systems. This SSIR Project is scheduled to be in service by August 31, 2016, at an estimated capital cost of \$54,562.

b) **Kearney, Nebraska – Install Anode Beds at Nine Locations Throughout the Kearney Division**

Cathodic protection surveys taken in 2015 have indicated that the natural gas distribution systems designated as line segments 240-1629, 240-1591, 240-1545, 370-1562, 370-1549 and 370-3481 have currently fallen below or are at risk of falling below cathodic protection compliance levels within the next 12-months. SourceGas Distribution’s corrosion technicians have determined that nine anode ground beds are needed to correct and maintain these systems. This SSIR Project is scheduled to be in service by September 30, 2016, at an estimated capital cost of \$66,016.

c) **Sutton, Nebraska – Install Anode Beds at Eleven locations Throughout the Sutton Division**

Cathodic protection surveys taken in 2015 have indicated that the natural gas distribution systems designated as line segments 460-1909, 460-1865, 380-1871, 390-3309, 460-1543 and 460-1532 have currently fallen below or are at risk of falling below cathodic protection compliance levels within the next 12 months. SourceGas Distribution’s corrosion technicians have determined that eleven anode ground beds are needed to correct and maintain these systems. This SSIR Project is scheduled to be in service by October 31, 2016, at an estimated capital cost of \$89,976.

E. Span Replacements

1. Background

Span projects involve the replacement of existing spans in the SourceGas Distribution system. Spans originally were incorporated throughout the distribution system over the years to reduce pipeline installation costs at a time when directional drilling methods did not exist or were not as advanced as they are today. Spans were originally installed to cross highways, rivers, bridges and irrigation ditches. In 2008, SourceGas Distribution performed a detailed study to analyze the condition of spans in Nebraska and found the need to develop a multi-year program to repair and replace spans. This program is updated periodically based upon information provided by field operations, corrosion technicians, and the engineering and integrity management departments.

2. SSIR Project Classification

a) **Classification Under SSIR Tariff**

The span replacement Projects identified are covered under CFR Title 49, Part 192, and may be subject to either Subpart O (TIMP) or Subpart P (DIMP) depending on whether the pipe segment

is classified as transmission or distribution pipe. For transmission segments, Section 192.917 requires a pipeline operator to evaluate and remediate threats to pipeline segments including where corrosion has been identified or potential outside force damage could occur that could adversely affect the integrity of the line. Remediation of distribution segments is specified in Section 192.1007, which requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

In addition to Sections 192.917 and 192.1007, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.161, which specifies support requirements for exposed pipeline segments, and Section 192.479, which requires operators to maintain coatings and corrosion control on pipe segments exposed to the atmosphere.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: corrosion control analysis; pipeline vintage; pipeline material; the existence and reliability of pipeline asset and testing records; pipeline leakage and other incident history; subject matter expert knowledge; and Project timeframe.

3. Project Description

To address the threats, spans may be repaired, lowered in place or replaced. The preferred approach, because of typical pipe and coating degradation, is to replace the span entirely. Repairing the span may involve re-coating or painting, installing of additional supports or brackets or otherwise repairing any deficiency and safeguarding the pipe segment. In instances where a pipe span is already in close proximity to the ground, it may be possible to excavate beneath the pipe span and lower the span in place. Lowering the span in place usually involves re-coating the segment and following detailed safety procedures because the line, although at reduced pressure, may still be in service.

For 2016, SourceGas Distribution has identified and scheduled replacement of one span at a total estimated capital cost of \$174,211. The span project is expected to be completed by December 31, 2016.

4. Specific Project

a) Scottsbluff, Nebraska – 21st Avenue Span Replacement

SourceGas Distribution will replace an existing eight-inch diameter span referred to as the 21st Avenue canal crossing in Scottsbluff, Nebraska that crosses a 30-foot wide irrigation canal. This span segment is operated at a high intermediate pressure of 175 psig and provides substantial

distribution supply to the Scottsbluff and Gering areas. Although the span is protected by a barricade, the pipe segment is mounted on a bridge in close proximity to the roadway in a high traffic area. In addition, the ongoing maintenance to protect the span from atmospheric corrosion is becoming costly and ineffective. The span will be replaced by directional boring of the irrigation canal and installing new eight-inch diameter steel pipe with fusion bonded epoxy coating. The total capital cost of this SSIR Project is estimated at \$174,211. The Project has a scheduled in-service date of December 31, 2016.

F. Town Border Stations

1. Background

Many TBS facilities in service today were built in the 1950s-1960s era, well before the requirements of 49 CFR 192 existed. Although many of these stations have provided service for well over 50 years, they may not have been built in accordance with today's standards. Many TBS facilities have outdated equipment including shop fabricated heaters that are inefficient, weighted lever reliefs, and excessive pressure drop regulators. Because of their age, many station components are displaying corrosion concerns on the piping and other components. In some cases, the TBS equipment and piping is still adequate but the existing line heater is inefficient, undersized and/or corroding and needs to be replaced. Through a multi-year program, SourceGas Distribution plans to replace these aging stations and/or line heaters with components built to today's standards.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified pipeline system components displaying safety threats requiring remediation under CFR Title 49, Part 192, Subpart O, TAMP. Section 192.917 requires a pipeline operator to evaluate and remediate pipeline segments where corrosion has been identified that could adversely affect the integrity of the system.

b) Objective Criteria Analyzed

In addition to Sections 192.917, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.479, which requires operators to maintain coatings and corrosion control on pipe segments exposed to the atmosphere, and Section 192.739, which requires operators to maintain pressure limiting and regulator stations in good mechanical condition.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: corrosion control analysis; vintage; material; the existence and reliability of pipeline asset and testing records; subject matter expert knowledge; and Project timeframe.

3. Project Description

Through a multi-year program, SourceGas Distribution plans to replace these aging stations and/or line heaters with components built to today's standards. The new stations will be built with new components including regulators, pressure relief and isolation valves, line heaters and coated or painted new piping. For 2016, SourceGas Distribution has identified and scheduled for the replacement of eight TBS at a total estimated capital cost of \$1,189,255. All eight Projects are expected to be completed by October 31, 2016.

4. Specific Projects

a) Byron, Nebraska – TBS Replacement

This SSIR Project includes the replacement of the Byron TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,086, with a scheduled in-service date of July 31, 2016.

b) Litchfield, Nebraska – TBS Replacement

This SSIR Project includes the replacement of the Litchfield TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,205, with a scheduled in-service date of July 31, 2016.

c) Hazard, Nebraska – TBS Replacement

This SSIR Project includes the replacement of the Hazard TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost

of this SSIR Project is estimated at \$135,038, with a scheduled in-service date of August 31, 2016.

d) Foster, Nebraska – TBS Replacement

This SSIR Project includes the replacement of the Foster TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,038, with a scheduled in-service date of October 31, 2016.

e) Inman, Nebraska – TBS Replacement

This SSIR Project includes the replacement of the Inman TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,038, with a scheduled in-service date of September 30, 2016.

f) Lexington, Nebraska – South TBS Replacement

This SSIR Project includes the replacement of the Lexington South TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$242,841, with a scheduled in-service date of October 31, 2016.

g) Crawford, Nebraska – TBS Relocation & Replacement

This SSIR Project includes the relocation and replacement of the Crawford TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the

facility. The current site is in a depression that subjects the equipment to mud and water at various times during the year. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,803, with a scheduled in-service date of September 30, 2016.

h) Chappell, Nebraska – Chappell TBS Replacement

This SSIR Project includes the replacement of the Chappell TBS in an effort to bring the TBS up to current code requirements and to improve the safety and reliability of the facility. The existing TBS has an open flame line heater without proper safety controls, gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and pressure regulating equipment that needs updating. The new TBS will include a much safer manufactured water bath line heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating equipment. The total capital cost of this SSIR Project is estimated at \$135,205, with a scheduled in-service date of August 31, 2016.

G. Top of Ground (TOG) Replacement

1. Background

Natural gas pipelines installed today generally are below grade with a minimum cover of three feet. Burying pipelines reduces the overall risk of the pipeline from outside force among other threats. Many pipeline segments operated by SourceGas Distribution in Nebraska, however, were installed by the Company's predecessor during the 1950s and 1960s on top of the ground. These lines today are referred to as "Top of Ground" (TOG) within the SourceGas Distribution system. During the time these lines were installed, the Company's predecessor made a push to serve agricultural customers and small communities, and installing TOG lines expedited service to these areas and reduced installation costs. When originally installed, most line segments were laid along fence lines, section lines or other rights-of-way that did not pose a high level of risk because they were visible and known to farmers. Through time, however, property owners and lease tenants have changed, many fences have been removed, agricultural land has been developed and, in places, the TOG segments have become partially buried. These TOG segments are susceptible to outside force damage as well as corrosion threats.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

TOG Projects identified are covered under CFR Title 49, Part 192, and may be subject to either Subpart O (TIMP) or Subpart P (DIMP) depending on whether the pipe segment is classified as transmission or distribution pipe. For transmission segments, Section 192.917 requires a pipeline operator to evaluate and remediate threats to pipeline segments including where corrosion has been identified or potential outside force damage could occur that could adversely affect the integrity of the line. Remediation of distribution segments is specified in Section 192.1007, which requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

In addition to Sections 192.917 and 192.1007, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.479, which requires operators to maintain coatings and corrosion control on pipe segments exposed to the atmosphere.

The other objective criteria that SourceGas Distribution analyzed for the TOG SSIR Projects are: corrosion control analysis; pipeline vintage; pipeline material; the existence and reliability of pipeline asset and testing records; pipeline leakage and other incident history; subject matter expert knowledge; and Project timeframe.

3. Project Description

SourceGas Distribution has identified seven SSIR Projects to replace TOG pipeline segments. For distribution lines, the TOG steel pipeline segments typically are replaced with polyethylene pipe. Line segments that are required to operate at a higher pressure, in excess of 100 PSIG, typically are replaced with steel pipe coated with fusion bonded epoxy. The total capital expenditure for these seven SSIR Projects in 2016 is estimated to be \$14,018,760, or \$13,853,764 after deducting \$164,996 of betterment costs of all seven SSIR Projects. All seven TOG SSIR Projects are expected to be completed by the November 30, 2016.

4. Specific Projects

a) Kearney, Nebraska – TOG Replacement 470-0040

This SSIR Project will involve the replacement of approximately 5,340 feet of one and one-quarter inch pipe, approximately 26,450 feet of two-inch pipe and approximately 41,970 feet of four-inch pipe all of which is TOG pipe. This line is south of Ragan, NE. Most of this pipe is 1950s and 1960s vintage that has no coating and it lies directly on the ground where it is subject

to damage from outside forces such as agricultural equipment, vehicles and adverse weather. SourceGas Distribution intends to replace this pipe with new Grade X-42, with two-inch and four-inch pipe sizes, which will be buried underground. Replacing this TOG pipe is in the best interest of public safety. The total estimated capital cost of this SSIR Project is \$3,080,191, whereas like-size replacement is estimated at \$3,073,650. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$3,073,650 and not the additional \$6,540 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of August 31, 2016.

b) Kearney, Nebraska – TOG Replacement 500-2324

This SSIR Project will involve the replacement of approximately 32,860 feet of one and one quarter-inch pipe, approximately 24,650 feet of two-inch pipe and approximately 2,697 feet of three-inch pipe all of which is TOG pipe. This line is located near Macon. Most of this pipe is 1950s and 1960s vintage that has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. SourceGas intends to replace this pipe with new Grade X-42, with two-inch and four-inch pipe sizes and with two-inch Polyethylene, which will be buried underground. Replacing this TOG pipe is in the best interest of public safety. The total estimated capital cost of this SSIR Project is \$2,400,630, whereas like-size replacement is estimated at \$2,356,745. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$2,356,745 and not the additional \$43,885 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of October 31, 2016.

c) Sutton, Nebraska – TOG Replacement 390-2555

This SSIR Project will involve the replacement of approximately 7,340 feet of one and one quarter-inch pipe, approximately 26,660 feet of two-inch pipe and approximately 900 feet of three-inch pipe all of which is TOG pipe. This line is west of Henderson, NE. Most of this pipe is 1950s and 1960s vintage that has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. SourceGas Distribution intends to replace this pipe with new Grade X-42, with two-inch and four-inch pipe sizes, which will be buried underground. Replacing this TOG pipe is in the best interest of public safety. The total estimated capital cost of this SSIR Project is \$1,214,432, whereas like-size replacement is estimated at \$1,198,064. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$1,198,064 and not the additional \$16,368 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of November 30, 2016.

d) Sutton, Nebraska – TOG Replacement 390-1734

This SSIR Project involves the replacement of approximately 35,520 feet of one and one quarter-inch bare steel main with two-inch X-42 fusion bond epoxy pipe and with two-inch polyethylene pipe. This is located near Marquette, Nebraska. Most of this pipe was installed in the early 1960s. It has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. The new line will be buried at a minimum depth of four feet, thus eliminating the damages caused by vehicles and agriculture equipment. Replacing this TOG pipe is in the best interest of public safety. The total capital cost of this SSIR Project is \$1,154,364, whereas like-size replacement is estimated at \$1,110,826. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$1,110,826 and not the additional \$43,538 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of November 30, 2016.

e) Sutton, Nebraska – TOG Replacement 390-0190

This SSIR Project involves the replacement of approximately 2,580 feet of one and one-quarter inch bare steel main and 18,377 feet of two inch bare steel main with two-inch X-42 fusion bond epoxy pipe. This is located near Utica, Nebraska. Most of this pipe was installed in the early 1960s. It has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. The new line will be buried at a minimum depth of four feet, thus eliminating the damages caused by vehicles and agriculture equipment. Replacing this TOG pipe is in the best interest of public safety. The total capital cost of this SSIR Project is \$702,054, whereas like-size replacement is estimated at \$698,893. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$698,893 and not the additional \$3,161 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of November 30, 2016.

f) Holdrege, Nebraska – TOG Replacement 250-0020 Phase 1

This SSIR Project will involve the replacement of approximately 4,770 feet of one and one-quarter inch pipe, approximately 9,760 feet of two-inch pipe, approximately 15,840 feet of three-inch pipe and approximately 36,970 feet of four-inch pipe, the majority of which is TOG pipe. The buried remainder of the three-inch and four-inch pipe is of unknown grade and wall thickness and varies in depth from one foot to four feet randomly and is being replaced as part of this project. This line is ten miles north of Holdrege, NE. Most of this pipe was installed in the late 1950s, the TOG portion has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. SourceGas Distribution is replacing this pipe with new Grade X-42, two-inch and four-inch pipe sizes which will be buried underground. Replacing this TOG pipe is in the best interest of public safety. The total estimated capital cost of this SSIR Project is \$2,767,401, whereas like-size

replacement is estimated at \$2,737,081. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$2,737,081 and not the additional \$30,320 associated with the betterment portion of the SSIR Project. The SSIR Project is scheduled to be in service by January 1, 2016.

g) Holdrege, Nebraska – TOG Replacement 250-0020 Phase 2

This SSIR Project will involve the replacement of approximately 5,530 feet of one and one-quarter inch pipe, approximately 49,110 feet of two-inch pipe and approximately 10,560 feet of three-inch pipe, the majority of which is TOG pipe. The buried remainder of the three-inch pipe is of unknown grade and wall thickness and varies in depth from one foot to four feet randomly and is being replaced as part of this project. This line is ten miles north of Holdrege, NE. Most of this pipe was installed in the late 1950s, the TOG portion has no coating and it lies directly on the ground where it is subject to damage from outside forces such as agricultural equipment, vehicles and adverse weather. SourceGas Distribution is replacing this pipe with new Grade X-42, two-inch and four-inch pipe sizes which will be buried underground. Replacing this TOG pipe is in the best interest of public safety. The total estimated capital cost of this SSIR Project is \$2,699,688, whereas like-size replacement is estimated at \$2,678,504. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$2,678,504 and not the additional \$21,184 associated with the betterment portion of the SSIR Project. The SSIR Project is scheduled to be in service by January 1, 2016.

H. Centerline Surveys

1. Background

SourceGas Distribution is implementing a multi-year initiative that began in 2014 to collect high accuracy Global Positioning System (“GPS”) centerline information of its entire natural gas transmission pipeline system using a contracted survey company. The GPS information that is collected will be integrated into the Company’s Pipeline Open Database System (“PODS”). The PODS information will be geographically displayed utilizing the Company’s Global Information System (“GIS”). Prior to GPS and GIS platforms, SourceGas Distribution’s predecessor companies managed pipeline information on paper plat sheets. Although regular updates were kept on these sheets, it soon became cumbersome because of the magnitude of data and changing regulations. In the early 2000s, plat sheets related to SourceGas Distribution’s transmission system were digitized into the PODS using measurement information within the plat sheets. Consequently, pipeline centerlines often are shifted slightly within the current PODS and GIS databases as a result of the digitization process described above. Accurate pipeline location

is critical to daily operational decisions and ensures that pipeline integrity, class location,⁴ HCAs and patrolling locations are accurately identified among other items.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified this SSIR Project as necessary under CFR Title 49, Part 192, Subpart O, TAMP. Section 192.905 requires a pipeline operator to determine which segments of an operator’s transmission system fall within an HCA. Therefore, it is necessary to initiate a high accuracy centerline survey to ensure that SourceGas Distribution’s GIS accurately detects and defines HCAs and class locations.

b) Objective Criteria Analyzed

In addition to Section 192.905, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.609, which states that an operator is required to determine if an increase in population density indicates a change in class location.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: pipeline design and class location; pipeline configuration and segmentation; population density; Project timeframe; and weather and climate constraints on the construction season.

3. Project Description

The GPS and GIS platforms will allow SourceGas Distribution to validate the spatial accuracy of the pipelines within its PODS database. Additionally, this GPS will allow the collection of field information while crews survey lines, which will result in the improvement of system knowledge. Additional field data collection initiatives include, but are not limited to: depth of cover, above ground appurtenances (e.g., valves, line markers, fence lines, and crossings), and points of inflection.

4. Project Cost and Estimated Completion Date

The estimated capital cost to complete the centerline survey of transmission lines in Nebraska is \$1,178,098. This is a multi-year SSIR Project. The project began in 2015 and will be completed July 31, 2016.

⁴ A class location unit is an onshore area that extends 220 yards on either side of the centerline of any continuous one mile length of pipeline in accordance with CFR Title 49, Part 192, Subpart O, Section 192.5, which defines each numbered class location unit. Class location units along a transmission pipeline are determined by the count of buildings intended for human occupancy and/or qualifying outdoor areas within the class location unit.

I. Meter Relocations

1. Background

These two SSIR Projects involve the relocation of meter loops from their current location near a highway, street or alley to the structure to better protect them from outside force damage. This threat is largely caused by meter loops being at the customer's property line, in an alley or adjacent to the street. Often times, these meters are bumped by vehicles backing out of garages or hit alongside a street that result in a bent meter or leak to the meter loop. The occurrence of such damage has increased over the years, and Company records show that the greatest risk to its distribution system is outside force, much of which is a result of meters being hit by vehicles.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified these facilities requiring remediation under CFR Title 49, Part 192, Subpart P, DIMP. Section 192.1007 requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.1007, as discussed above. SourceGas Distribution also analyzed this SSIR Project in accordance with Section 192.353 which requires a pipeline operator to protect meters from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: threat assessment.

3. Project Description

Meter loops are typically relocated from the vulnerable location to the structure to better protect them from outside force damage. In some cases, the service lines are replaced due to age, pipe material or condition of the pipe. The decision to relocate meters is determined by field personnel working in conjunction with the Company's integrity management members to determine which facilities are at high risk. Factors in this determination include, but are not limited to, previous damage history, proximity to roadways, field observations and system operating pressures. SourceGas Distribution plans to relocate 61 meters in 2016. The total capital expenditure for meter relocations in 2016 is estimated to be \$226,105. All meter relocation SSIR Projects listed are expected to be completed by October 31, 2016.

4. Specific Projects

a) Elgin, Nebraska – Meter Relocation

The Elgin Meter Relocation will relocate 21 meters away from highway 14, which runs through Elgin, and relocate the meters to be next to the structures. When the meters were originally placed at the road, the highway was not as wide as it is now. Given the highway’s current width and the current location of SourceGas Distribution meters, the meters are at risk of being hit or damaged by vehicles. Hit meters are the number one cause for outside force damages in this SourceGas Distribution division. Removing these 21 meters from high traffic roads will help reduce the number of hit meters occurrences. The total capital cost of this SSIR Project is estimated at \$63,369, and is scheduled to be in service by July 31, 2016.

b) Alliance, Nebraska – Meter Relocation

SourceGas Distribution will move 40 meters that are presently in a narrow alley, in blocks 112 and 113, in Alliance, Nebraska. The meters will be moved next to the structures that the meters serve, which will substantially reduce the probability that these meters will be struck by vehicles. Both the original mains and services were installed in 1954. The total capital cost of this SSIR Project is estimated at \$162,736, and is scheduled to be in service by October 31, 2016.

J. PVC Pipe Replacement

1. Background

SourceGas operates approximately 864 miles of polyvinylchloride (“PVC”) distribution pipelines in Nebraska which were installed between the mid-1960s through 1977. The Company’s service area that utilizes PVC pipe includes two towns and several miles of rural irrigation areas and one rural subdivision. By the mid-1980’s PVC was no longer a recommended piping material due to the evolution of superior piping materials, such as PE pipe, and new construction methods. There are several safety issues with PVC pipe that the Company, and the industry as a whole, face. For example PVC pipe has a high instance of leaks at joints due to adhesive failure. Additionally, in many instances the integrity of older PVC pipe is compromised because the material becomes brittle over time, which makes PVC pipe more prone to failure due to stress intensification that occurs when soil around a pressurized pipe is removed. Also, PVC pipe was installed with tracer wire to assist in locating the pipe, and over time that tracer wire has corroded and no longer carries a current. This makes it difficult for the Company to provide accurate pipe location points, which significantly increases the risk of third party damage.

In 2015, as a result of the safety risks associated with PVC pipe that are described above, the Company determined a need to develop a multi-year program to replace this pipe with PE pipe. In the Company’s risk analysis it identified two towns and one rural housing development,

Benedict, Glenvil and Valley Grange, which are primarily piped with PVC. Due to population density in these areas these three projects are ranked at the top of the Company's list of PVC replacement projects to complete in 2016. Additionally, the Company included two rural PVC pipe replacement projects.

2. SSIR Project Classification

a) Classification Under SSIR Tariff

SourceGas Distribution identified PVC pipeline segments requiring replacement under CFR Title 49, Part 192, Subpart P (DIMP). Section 192.1007 requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks.

b) Objective Criteria Analyzed

In addition to Section 192.1007, SourceGas Distribution analyzed this SSIR Project in accordance with the regulatory requirements in Section 192.281 addressing requirements for plastic pipe joints, as well as the National Fuel Gas Code ANSI Z223/NFPA 54, 5.6.4.1.3. Both codes provide guidance for repairing PVC natural gas pipelines, and both codes recommend against installing PVC pipe for installation of new pressurized natural gas pipelines. SourceGas Distribution also analyzed this Project in accordance with the regulatory requirements in Section 192.321(e), which requires pipe to be locatable.

The other objective criteria that SourceGas Distribution analyzed for this SSIR Project are: pipeline vintage, pipeline material, the existence and reliability of pipeline asset and testing records, pipeline leakage and other incident history; subject matter expert knowledge; and Project timeframe.

3. Project Description

SourceGas Distribution has identified five specific PVC distribution main pipelines that will be replaced with PE pipe in 2016. The total capital expenditure for these five SSIR Projects in 2016 is estimated to be \$2,677,768, or \$2,601,045 after deducting \$76,723 of betterment costs of one SSIR Project. All five PVC SSIR Projects are expected to be completed by November 30, 2016.

4. Specific Projects

a) Benedict, Nebraska – PVC Main Replacement

This SSIR Project involves the replacement of approximately 12,745 feet of two-inch PVC main with two-inch PE main in the gas distribution system of Benedict, NE that was installed in 1968. As described above, this project is in a high density population area, and the inability to accurately locate the PVC pipe, due to the deterioration of the tracer wire, increases the risk of

third party damage. The total capital cost of this SSIR Project is estimated at \$533,774, with a scheduled in-service date of June 30, 2016.

b) **Glenvil, Nebraska – PVC Main Replacement**

This SSIR Project involves the replacement of approximately 12,740 feet of two-inch PVC main and 1,570 feet of three-inch PVC main with two-inch PE main in the gas distribution system of Glenvil, NE that was installed in 1968. As described above, this project is in a high density population area, and the inability to accurately locate the PVC pipe, due to the deterioration of the tracer wire, increases the risk of third party damage. The total capital cost of this SSIR Project is estimated at \$636,560, with a scheduled in-service date of October 31, 2016.

c) **Valley Grange Subdivision – PVC Main Replacement**

This SSIR Project involves the replacement of approximately 7,300 feet of two-inch PVC main with two-inch PE main in the gas distribution system in a rural housing development that is located approximately one mile south of McCook, NE. This pipeline system was acquired from a third party and the installation date of this pipe is unknown. As described above, this project is in a high density population area, and the inability to accurately locate the PVC pipe, due to the deterioration of the tracer wire, increases the risk of third party damage. The total capital cost of this SSIR Project is estimated at \$277,008, with a scheduled in-service date of November 30, 2016.

d) **Scottsbluff, Nebraska PVC 070-2733 – PVC Main Replacement**

This SSIR Project involves the replacement of approximately 7,550 feet of two-inch PVC main with two-inch PE main in a rural area of the Company's natural distribution system that was installed in 1971, and is located approximately nine miles southeast of Hemingford, NE. In 2015, the pipeline was over-pressurized due to a relief valve failure resulting in multiple joint leaks. The leaking section of pipe was retired from service. This project is to replace the remaining section of the pipe that is still in service because the fact that it was previously over-pressurized may have affected the integrity of the pipe and as a result it is assessed as a pipe that has a higher likelihood of failure. The total capital cost of this SSIR Project is estimated at \$331,881, with a scheduled in-service date of October 31, 2016.

e) **Albion PVC 420-2763 – PVC Main Replacement**

This SSIR Project involves the replacement of approximately 55,410 feet of two-inch PVC main with 15,930 feet of four-inch PE and 39,480 feet of two-inch PE main in the rural gas distribution system. This pipe is located approximately one mile southeast of Humphrey, NE and was installed in 1971. Due to deterioration of the tracer wire, the inability to accurately locate the PVC mains increases the probability of damage due to third party construction activities. In

addition, seven leaks have been detected on this pipe segment. The total estimated capital cost of this SSIR Project is \$898,546, whereas like-size replacement is estimated at \$821,822. Thus, consistent with the SSIR Tariff, SourceGas Distribution is seeking recovery of the \$821,822 and not the additional \$76,723 associated with the betterment portion of the SSIR Project. The SSIR Project has a scheduled in-service date of November 30, 2016.

K. Facility Relocation Projects

The SSIR Tariff authorizes the Company to recover the costs of facility relocation projects in the SSIR Charge. Facility relocation projects are directly related to pipeline safety and integrity activities. Such projects are an integral step in the overall safety and integrity process. These projects are required by government entities to enhance the public welfare, including safety.

The Company each year encounters the need to conduct facility relocation projects in connection with municipal infrastructure projects.

For example, SourceGas Distribution was put on notice in 2014 of a possible facilities relocation project in 2015 along Highway 385 near Alliance, Nebraska. This potential relocation project did not take place in 2015, but the Company has been notified that this work may now need to be completed in 2016. This potential SSIR Project could have significant impact on SourceGas Distribution's transmission assets, and potential financial impacts exceeding the minimum SSIR Tariff requirement of \$20,000. At this time, the Company is aware of a nine-mile section of Highway 385 between Alliance, NE and the Box Butte/Morrill County line that could be expanded in areas that would encroach on the Company's pipeline. In some cases, SourceGas Distribution's pipeline is in private rights-of-way and in other areas the Company's pipeline is in the State's rights-of-way. The full scope and scale of the Company's facility relocation project in connection with this municipal infrastructure project are not clear at this time. This uncertainty is common, as municipalities typically do not finalize their plans for infrastructure projects for a particular calendar year until late in the previous calendar year or early in the calendar year in which those projects will be conducted.

Although the Company is aware of this and other potential municipal infrastructure projects in 2016 that may require the Company to conduct facility relocation projects, the costs of which are Eligible System Safety and Integrity Costs for recovery through the SSIR Tariff, those Projects are not sufficiently definitive at this time for the Company to request prospective recovery of 2016 Eligible System Safety and Integrity Costs through this filing. See Project No. 40 (Nebraska Highway Relocation Program) on Exhibit 4, Table 3, Page 3 of 3 to this application, which shows that no dollars associated with 2016 facility relocation projects are being sought for recovery through this filing. Therefore, as part of its quarterly surveillance reports, the Company will provide updates of its facility relocation projects in connection with municipal infrastructure

projects and, through its October 1, 2016 annual filing, will seek to recover the Eligible System Safety and Integrity Costs associated with those projects.