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August 1, 2022

Col. Thomas Golden (Ret.)  
Executive Director  
Nebraska Public Service Commission  
1200 N Street, Suite 300  
Lincoln, NE 68508

RE: Black Hills Nebraska Gas, LLC d/b/a Black Hills Energy  
Commission Application No. NG-112.2  
In the Matter of the Application of Black Hills Nebraska Gas, LLC  
d/b/a Black Hills Energy seeking approval of a 2023 System Safety & Integrity Rider

Dear Executive Director:

By this Application, Black Hills Nebraska Gas, LLC d/b/a Black Hills Energy (“BH Nebraska Gas”) is proposing to adjust the System Safety and Integrity Rider (“SSIR”) Charge to be effective on January 1, 2023, for Rate Areas One, Two, Three, and Five. The adjusted 2023 SSIR Charges will apply to rate schedules applicable to all BH Nebraska Gas Jurisdictional Residential, Commercial, and Energy Options customers.

The rates submitted with this Application reflect the overall SSIR Charges applicable to the referenced rate schedules to cover the incremental annual revenue requirement impact of costs incurred by the Company with respect to SSIR Projects as defined on Tariff Sheets Nos. 127 through 131. These eligible projects were not included in the rate base calculation in the rate review for Nebraska assets in Commission Application No. NG-109. Each of the SSIR Projects will be in service and used and useful by December 31, 2023. If approved by the Commission, the monthly System Safety and Integrity Charges effective on January 1, 2023, shall be as follows:

	Residential	Commercial	Commercial – Energy Options
Proposed SSIR Charge - \$/month	\$3.07	\$9.58	\$9.58

The proposed 2023 SSIR has been calculated in accordance with Tariff Sheet Nos. 127 through 131, as more fully discussed herein.

This filing includes the following exhibits:

- Exhibit 1 – Narrative describing 2023 projects included in SSIR
- Exhibit 2 – Calculation of the SSIR
- Exhibit 3 – 2021 SSIR Project Details
- Exhibit 4 – Redlined and Clean Updated Tariff Pages

### Calculation of SSIR Charge

The calculation of the SSIR Charge is shown on the tables that comprise Exhibit 2 of this SSIR Application. A summary of the information shown on each 2023 SSIR Application schedule is as follows:

Table A – this table shows the derivation of the 2023 SSIR for the Residential and Commercial<sup>1</sup> customer classes. The rates are determined by dividing each customer class’s portion of (1) the jurisdictional revenue requirement attributable to capital projects and (2) the jurisdictional portion of 2023 Data Infrastructure Improvement Program (“DIIP”) costs by the estimated number of bills.

Table B – this table shows the True Up amounts. The 2021 True Up amounts include true ups based on customer bills, capital revenue requirement costs, and DIIP costs.

Table C – this table shows the calculation of the statewide revenue requirement resulting from the 2023 capital SSIR Projects. The statewide revenue requirement for each of the respective years is as follows:

	Capital Projects Jurisdictional Revenue Requirement	DIIP Jurisdictional Revenue Requirement <sup>2</sup>	Total Jurisdictional Revenue Requirement
2021 Projects	\$2,732,898	\$745,401 <sup>3</sup>	\$3,478,299
2022 Projects	\$2,637,841	\$3,431,238 <sup>4</sup>	\$6,069,079
2023 Projects	\$4,652,634	\$2,807,557 <sup>5</sup>	\$7,460,192
Total	\$10,023,374	\$6,984,196	\$17,007,570

<sup>1</sup> For calculation of rates, Commercial and Commercial – Energy Options customers are combined.

<sup>2</sup> Only the current year DIIP Jurisdictional Revenue Requirement amount is included in the SSIR rate for 2023.

<sup>3</sup> NG-109, Exhibit 2, Table A, Line 6

<sup>4</sup> NG-112.1, Exhibit 2, Table A, Line 6

<sup>5</sup> NG-112.2, Exhibit 2, Table A, Line 6

The determination of the revenue requirement requires calculation of the incremental revenue required to compensate the Company and includes: (i) a return, at a percentage equal to the Company's proposed authorized weighted average cost of capital including an authorized return on equity of 9.5% grossed up for taxes, on the projected increase in the month ending net plant in-service balances associated with the Projects; (ii) the plant-related ownership costs associated with such incremental plant investment, including depreciation less any retirements, accumulated deferred income taxes (ADIT), and all taxes including income taxes and property taxes, and (iii) the projected operation and maintenance (O&M) expenses related to the Projects.

Table D – this table lists jurisdictional portion of the capital SSIR Projects included in the 2023 SSIR calculation including projected in-service date, total project cost, estimated betterment credit, if any, and net project cost to be included in the revenue requirement calculation. The estimated total project cost for 2023 SSIR projects net of all betterment credits as follows:

	Total Net Project Costs
2021 Projects (actual)	\$42,732,978
2022 Projects (estimate)	\$44,564,911
2023 Projects (estimate)	\$44,575,319
Total	\$131,873,208

Table E – this table shows the calculation inputs and results for depreciation used for calculating the SSIR revenue requirement.

Table F – this table shows the calculation inputs and results for the Weighted Average Cost of Capital (WACC), interest, property tax and tax used for calculating the SSIR revenue requirement.

Table G – this table shows the summary of the calculations of Accumulated Deferred Income Taxes (ADIT) and Net Operating Loss (NOL) offset used for calculating the SSIR revenue requirement.

Table H – this table shows the detailed calculations of Accumulated Deferred Income Taxes (ADIT) used for calculating the SSIR revenue requirement.

Table I – this table shows the inputs and detailed calculations of tax depreciation used to calculate ADIT used for calculating the SSIR revenue requirement.

Table J – this table shows the inputs and calculations of the WACC used for calculating the SSIR revenue requirement.

Table K – this table assigns the capital SSIR Projects into FERC Accounts and further separates the costs into the jurisdictional component to the jurisdictional customer classes. The jurisdictional component of the revenue requirement, as shown on this table, was determined using

the cost allocation principles approved in the most current general rate case, Application No. NG-109.

Table L – this table further separates the capital SSIR Projects into the jurisdictional customer classes. The jurisdictional customer class assignment, as shown on this table, was determined using the cost allocation principles approved in the most current general rate case, Application No. NG-109.

Table M – this table shows (1) the summary of the sub-projects of the DIIP, including the proposed 2023 costs, (2) the portion recoverable in the SSIR revenue requirement, and (3) variances between proposed and actual costs.

Please contact the undersigned at (402) 858-3561 if you have questions or need additional information.

Respectfully,

**BLACK HILLS NEBRASKA GAS, LLC**  
**D/B/A BLACK HILLS ENERGY**

/s/Tyler E. Frost  
Tyler E. Frost  
Manager of Regulatory & Finance  
(402) 858-3561

and

/s/Douglas J. Law  
Douglas J. Law, NE Bar #19436  
Associate General Counsel  
(402) 221-2635

Enclosures

**2023 PROJECTS  
REFLECTED IN THE  
SYSTEM SAFETY AND INTEGRITY RIDER  
FOR BLACK HILLS NEBRASKA GAS, LLC**



**August 1, 2022**

**2023 PROJECTS REFLECTED IN THE  
SYSTEM SAFETY AND INTEGRITY RIDER  
FOR BLACK HILLS NEBRASKA GAS, LLC**

Filed August 1, 2022

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**2023 PROJECTS REFLECTED IN THE  
SYSTEM SAFETY AND INTEGRITY RIDER  
FOR BLACK HILLS NEBRASKA GAS, LLC**

**I. INTRODUCTION**

As set forth on Sheet Nos. 127-131 of the Nebraska Gas Tariff No. 1 (the “Tariff”) of BH Nebraska Gas, LLC d/b/a Black Hills Energy (“BH Nebraska Gas” or the “Company”), all Jurisdictional Residential, Commercial, and Commercial – Energy Options customers shall be subject to a System Safety and Integrity Rider (“SSIR”) designed to collect Eligible System Safety and Integrity Costs. BH Nebraska Gas is proposing the 2023 SSIR Tariff with an effective date of January 1, 2023.

Under the proposed SSIR Tariff, the Company will be authorized to collect the revenue requirement of Eligible System Safety and Integrity Costs projected for the period January 1, 2023 through December 31, 2023, through the Safety and Integrity Charge (the “SSIR Charge”) over the same period. The SSIR Charge is to be applied to each Rate Schedule as set forth on the Rate Schedules and Other Charges Schedule of Rates, Sheet No. 78 of the Tariff. Additionally, the Company proposes revised Sheet Nos. 128-129.1 adding clarifying annual surveillance language addressing items proposed by the Nebraska Public Advocate (“NEPA”). Finally, the proposed language includes an extension of the annual surveillance deadline from within sixty to within ninety days of the end of each calendar year to facilitate compliance with the items proposed by the NEPA.

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

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- 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;
- 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; and
- v. Projects to ensure gas is available, delivered and measured for our customers in all situations. In some cases, these projects will not replace any existing infrastructure, and are required to maintain minimum pressure requirements on our distribution system to prevent loss of customers on a winter peak day. These projects include “Obsolete Infrastructure Projects”, with examples such as Charts, Meter Install, Odorizer, and Valve projects.

As shown in Exhibit 2, Table K, to this application, the Company has identified 39 individually numbered Capital SSIR Projects and in Exhibit 2, Table M, 3 Operations and Maintenance

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(“O&M”) Expense SSIR Projects for the instant filing. In total, the Company’s projected capital and O&M expenditures for 2023 SSIR Projects total **\$53,462,279**. All Projects will be in service in 2023.

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 2023 (see Section IV.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. Therefore, the Company will provide an update of its facility relocation projects in connection with municipal infrastructure projects and, through subsequent annual filings, will seek to recover the Eligible System Safety and Integrity Costs associated with those projects.

The Company uses three distinct risk models corresponding to the TIMP, DIMP, and the At-Risk Meter Relocation (“ARMR”) Program. All three models use objective and external factors and provide scores that correlate to proactive analysis of system risk, as described below.

- 1) The TIMP risk model is based on PHMSA mandates and laws enacted in 2004 which are very prescriptive. It is a relative risk ranking that utilizes a Risk of Failure = Likelihood of Failure \* Consequence of Failure algorithm. It considers the nine primary threats categories recognized by PHMSA 192 Subpart O and ASME B31.8S: External Corrosion, Internal Corrosion, Stress Corrosion Cracking, Third Party Damage, Weather and Outside Force Damage, Manufacturing Defects, Construction Defects, Incorrect Operations, and Equipment Failure. The range of scores are a relative percentage of Risk of Failure (“ROF”).
- 2) The DIMP risk model<sup>1</sup> is based on PHMSA mandates from 2011 and is much less prescriptive. It uses spatial analysis and other external factors beyond leak and damage history to assess eight threat categories: Corrosion Failure; Natural Force Damage; Excavation Damage; Other Outside Force Damage; Pipe, Weld, or Joint Failure; Equipment Failure; Incorrect Operation; Other Causes. Each threat category has multiple sub-threats, creating 75 sub-threats<sup>2</sup> to be evaluated for each project. The

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<sup>1</sup> The Black Hills Energy DIMP O&M Risk Assessment was originally filed *In the Matter of the Application of Black Hills Nebraska Gas, LLC, d/b/a Black Hills Energy, Rapid City, South Dakota, seeking approval or a general rate increase*, Application No. NG-109 (“NG-109”).

<sup>2</sup> The Threat Matrix of the 75 sub-threats was originally filed in NG-109.

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likelihood of failure and consequence of failure and asset consequence of sub-threats are quantified and accumulated to determine the score for projects.

- 3) The ARMR risk model<sup>3</sup> is unique because most of the pipe involved is customer-owned pipe, so the risk ranking is based on nearby damages. Meter location data is used to identify meters most likely at risk based on location assignment. Leak data is then applied to determine a subset of those meters that are most likely in harm's way based on historic damage. The DIMP risk score and consequence threats are used to further prioritize the results. Finally, interpolation zones are created based on the DIMP risk data to assign remaining meters a ranking.

In addition to the risk models, the Company also considers other criteria, such as the availability of internal and external crews; project management constraints; local economic development plans; customer inconvenience and impact; other 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 the 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.

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<sup>3</sup> The workflow of the ARMR Program Identification & Prioritization Process was originally filed in NG-109.

**II. 2021 SSIR PROJECT RECONCILIATION**

Through NG-109, the Nebraska Public Service Commission approved BH Nebraska Gas jurisdictional spend of \$44,304,121 for SSIR-eligible capital projects in 2021, including O&M Data Infrastructure Improvement Program (“DIIP”) projects. The actual 2021 jurisdictional spend was ***\$1,301,854*** less than proposed in NG-109. Significant variances are detailed below and demonstrated in Exhibit 3.

**A. Bare Steel**

Replacement of Bare Steel Distribution Mains SSIR Project Category jurisdictional spend was \$365,437 less than original projected budget amounts due to lack of interest from contractors to complete the work based on the level of uncertainty and complexity.

BH Nebraska Gas received one high bid. The Company worked with the contractor to develop a “shared risk” contract. Sorting out the contract details caused a delayed start. Further, the City of Wayne prohibited BH Nebraska Gas from working in the alleys after November 1, causing a shortened construction window.

**B. Town Border Stations**

Actual Town Border Station Upgrades and Replacements SSIR Project Category jurisdictional spend was \$91,780 less than original projected budget amounts.

TBS Heater projects exceeded original projected jurisdictional budget amounts by \$74,070 primarily due to increased costs due to resource constraints. Originally filed budget amounts were based on internal resources, however, contractors were used in some cases. Additional testing requirements as part of the heater liquid draining/disposal process also added to the cost. Note that all heaters were drained, and the liquids tested, but a final pickup and disposal was not scheduled because of vendors unavailable due to COVID-19 challenges. Drained liquid will be picked up and disposed of in 2022.

TBS upgrade projects jurisdictional spend was \$165,850 less than original projected jurisdictional budget amounts due to broad initial project scopes and preliminary forecast amounts.

**C. TOG, Exposed and Shallow Main**

Top of Ground, Shallow and Exposed Pipe SSIR Project Category jurisdictional spend was \$4,983,252 less than original projected jurisdictional budget amounts.

TOG jurisdictional spend was \$231,017 less than original projected jurisdictional budget amounts due primarily to TOG Project 10070722. This project had \$2,806,271 of jurisdictional budgeted spend and was postponed. It will be finished

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November 2022. Those dollars were then shifted to other TOG/PVC projects that were budgeted for partial replacement.

Exposed and Shallow Main jurisdictional spend was \$4,752,235 less than original projected jurisdictional budget amounts due to inaccurate scopes of work and estimates provided by a third-party engineering firm. These programs are currently on hold for future years until BH Nebraska Gas obtains better project scopes and estimates. This large variance was identified early in 2021, and the Company adjusted ARMR program spend accordingly.

### D. ARMR

Actual At-Risk Meter Relocation SSIR Project Category spend exceeded original projected jurisdictional budget amounts by \$4,145,793. Additional dollars were spent on this program to make up the forecasted underspend in other program categories.

Note, a number of Lincoln and surrounding area ARMR projects (funding projects 10075236 – 10075253) were filed in NG-109 with amounts, which had no spending for 2021. The budgets for these projects were combined and spent in Lincoln in order to maximize contractor efficiency.

### E. Obsolete Infrastructure

Obsolete Infrastructure SSIR Project Category jurisdictional spend was \$724,777 less than original projected jurisdictional budget amounts.

Meter Install jurisdictional spend was \$929,122 less than original projected jurisdictional budget amounts, including \$1,032,468 of jurisdictional underspend due to scope changes in ERT upgrades in Kearney and Holdrege. The original cost estimate and scope filed was to replace all the Company's existing 40G ERTs with new 100G ERTs within the Kearney and Holdrege districts and replace meters older than 25 years with a new meter with a 100G ERT. As BH Nebraska Gas planned the project, the decision was made to change the scope to only exchange meters older than 25 years of age if the meter was already located at the structure. This decision was made due to meter bar supply chain constraints and to reduce duplication in projects between AMI and ARMR, as there is overlap in the locations of these projects. BH Nebraska Gas intends to replace the over 25-year meters as part of the ARMR projects in the future. This decreased meter exchanges from approximately 6,500 to 2,656 and increased the number of straight forward ERT exchanges from approximately 5,400 to 8,810. The cost difference between exchanging the meter and just exchanging the ERT was where BH Nebraska Gas saw the savings through contractor invoices as well as reduced materials.

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PVC spend exceeded original projected jurisdictional budget amounts by \$207,045. Projects were adjusted to improve operational efficiencies and ultimately obtain better contractor pricing. Original projects were segmented as partial replacements; a method inconvenient for customers and landowners and less economical. A leaking PVC replacement project that came up midyear resulted in an unplanned jurisdictional spend of \$151,846.

### F. Facility Relocations

Required Facility Relocations SSIR Project Category jurisdictional spend totaled \$1,352,226. These Projects are included in the SSIR in an Annual SSIR Application in arrears, as projects of this type have a possibility of change, cancellations, or identification of additional qualified projects.

### G. DIIP

The Data Infrastructure Improvement Program SSIR Project Category jurisdictional spend was \$634,627 less than original projected budget amounts. BH Nebraska Gas experienced challenges during 2021 due to Storm Uri which delayed the start of the gas service card mapping project, followed by the upgrade of the ESRI Geographic Information System (GIS), which caused technology slowdowns that delayed the project.

**III. 2023 SSIR PROPOSED ADJUSTMENT**

**H. Background**

There is little argument that the Nebraska SSIR Program is needed for continued safe, reliable, natural gas service to the benefit of all Nebraskans.

**I. Request for Commission Action**

In this 2023 SSIR Annual Application, the Company requests the Commission approve additional flexibility in the management of SSIR spending, subject to Commission approved spending amounts. The requested flexibility will allow the Company to manage spend within project categories, per the Company's Tariff<sup>4</sup>, and streamline the reconciliation process, also on a project category basis.

**J. Uncontrollable Events**

Since the conclusion of Application No. NG-109, historic events, never-before seen or experienced, have resulted in significant challenges for the Company and all Nebraskans - Storm Uri, Global Pandemic/Supply Chain, Inflation.

**1. Storm Uri**

On March 2, 2021, the Commission opened a docket on the effects of the February 2021 cold weather event ("Storm Uri") on the cost of gas supply purchased by Nebraska gas utilities. Further, on May 25, 2021, the Commission entered an order approving the Company's recovery plan to recover extraordinary gas supply costs, and the associated carrying costs, of more than \$90 million over a 36-month timeframe.<sup>5</sup> Today, that timeframe is less than one-half complete, and the impact of Storm Uri continues to have a strong impact on the Company, burdening the Company's balance sheet throughout the entire recovery timeframe, challenging the Company to prioritize capital spend across its entire footprint in order to return to pre-Storm Uri capitalization metrics and maintain its current credit ratings.

The Company believes the Nebraska SSIR program should be top priority. As such, in the 2023 SSIR Annual Application, the Company asks the Commission to approve additional flexibility in the management of SSIR spend, subject to Commission approved spending amounts.

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<sup>4</sup> Black Hills Nebraska Gas, LLC d/b/a Black Hills Energy, Nebraska Natural Gas Tariff, Sheet No. 129.1, Definitions, Section C System Safety and Integrity Projects, Item v.

<sup>5</sup> In the Matter of the Commission, on its own motion, seeking to investigate the effect of the February 2021 cold weather event upon the cost of gas supply purchased by Nebraska gas utilities, Application No. NG-111.1, Order Approving Recovery Plan, May 25, 2021.



**2. Global Pandemic / Supply Chain**

In 2020, the COVID-19 virus descended on the world, resulting in a global pandemic that has resulted in mass casualties, staff shortages, constraints on availability of resources and the supply chain, and has ultimately changed the way people live their lives, and the way companies conduct business.

In 2022, the supply chain constraints, brought about by the COVID-19 Pandemic, began impacting Black Hills Nebraska Gas. Suppliers shut down facilities, resulting in the inability for the Company to obtain necessary parts to complete SSIR ERT projects, previously reviewed and approved by the Commission.

SSIR dollars, stranded due to uncontrollable events, could be reassigned to other SSIR approved categories, continuing to advance the much desired, much agreed upon benefits of the SSIR program. As such, in the 2023 SSIR Annual Application, the Company asks the Commission to approve additional flexibility in the management of SSIR spending, subject to Commission approved spending amounts.

**3. Inflation**

Attributed primarily to supply chain issues brought on, in part, by the COVID-19 Pandemic, inflation became yet another challenge for the US economy in late 2021. More recently, in June 2022, the United States Bureau of Labor and Statistics reported consumer prices up 9.1 percent, the largest 12-month increase in 40 years, since the period ending November 1981.<sup>6</sup>

Inflationary pressures may lead to some SSIR Projects exceeding preapproved budget amounts, or worse yet, out of reach. Allowing the flexibility to focus SSIR spend on the right mix of projects creates additional program value. As such, in the 2023 SSIR Annual Application, the Company asks the Commission to approve additional flexibility in the management of SSIR spend, subject to Commission approved spending amounts.

**K. Proposed Adjustment**

As in the past, the 2023 SSIR Annual Application provides individual descriptions of 2023 SSIR projects for the Commission's review. However, rather than plan capital spending

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<sup>6</sup> Bureau of Labor Statistics, U.S. Department of Labor, *The Economics Daily*, Consumer prices up 9.1 percent over the year ended June 2022, largest increase in 40 years at <https://www.bls.gov/opub/ted/2022/consumer-prices-up-9-1-percent-over-the-year-ended-june-2022-largest-increase-in-40-years.htm> (visited July 18, 2022).

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based on data at a *project level*, the Company is requesting the Commission approve 2023 SSIR proposed spending amounts provided by SSIR project eligible *category*.

Subject to the Commission’s approval, the Company believes the ability to manage SSIR dollars within an eligible project category, rather than on an individual project basis, allows for flexibility to adjust spend, or add projects, when impacted by significant events outside the Company’s control, such as those described above. SSIR eligible product categories are listed in the Company’s Tariff, Sheet No. 129.1, Definitions, Part C System Safety and Integrity Projects, Section v.

The Company has provided detail on seven Top of Ground (“TOG”), Shallow, and Exposed Pipe 2023 SSIR projects for a total jurisdictional spend of approximately \$12 million. As an example, in the event the Company is unable to complete Project X, those dollars could be reassigned to Project Y, increasing the amount of Project Y TOG to be replaced, or assigned to a new Project Z that falls within the same TOG/Shallow/Exposed Pipe SSIR eligible product category.

Additionally, with this flexibility, the Company commits to continue to proactively communicate with the Commission, on a regular basis, changes to the SSIR resulting from items mentioned above. The Company is willing to openly discuss this proposal to ensure the program is managed as effectively as possible, when subjected to uncontrollable events.

The 2023 SSIR Project budget amounts, by Project Category, are listed below in Table 1.

**Table 1 – 2023 SSIR Project Budgets By Project Category**

<b>Project Category</b>	<b>In-Service Date</b>	<b>Total</b>	<b>Jurisdictional</b>	<b>Non-Juris</b>
ARMR	Dec-23	\$23,856,677	\$22,693,996	\$1,162,681
Bare Steel	Nov-23	\$2,030,691	\$1,689,352	\$341,339
Cathodic Protection	Nov-23	\$100,000	\$81,853	\$18,147
Obsolete Infrastructure	Nov-23	\$8,247,515	\$7,068,842	\$1,178,673
TOG/Shallow/Exposed	Nov-23	\$14,409,186	\$11,987,145	\$2,422,041
Town Border Stations	Nov-23	\$1,045,000	\$766,421	\$278,579
MEGA Rule (TIMP)	Nov-23	\$515,000	\$287,710	\$227,290
DIIP	Dec-23	<u>\$3,258,210</u>	<u>\$3,258,210</u>	<u>\$0</u>
		\$53,462,279	\$47,833,529	\$5,628,750

**IV. 2023 SSIR PROJECTS**

**A. Replacement of Bare Steel Distribution Main**

**1. Background**

The Company operates approximately 8,558 miles of distribution system<sup>7</sup> in Nebraska, of which approximately five percent (5%), approximately 402 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. It becomes increasingly difficult to maintain effective corrosion protection because of the age of the system and bare steel pipeline, in coordination with the State Fire Marshall's office, is no longer cathodically protected which has necessitated an accelerated removal. 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, some 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 construction practices not up to today's standard. Based upon known data, including installation records and construction methods, leakage history, cathodic protection data, damage history and population density, the Company's DIMP identifies bare steel segments that are higher risk.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company identified two bare steel distribution main pipeline segments 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**

The Company used the objective criteria included in the DIMP risk model, as well as the availability of internal and external crews, project

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<sup>7</sup> The miles of distribution operated by the Company has been updated, consistent with Department of Transportation (DOT) reporting, from what was originally filed in NG-109.

management constraints, local economic development plans and customer impact.

**3. Program Description**

The Company has identified two specific bare steel distribution main replacement projects scheduled to be completed in 2023. 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. Bare Steel pipe is associated with accelerated corrosion and a construction date that usually predates the creation of formal construction standards in the natural gas utility industry. The total capital expenditure for this SSIR Project in 2023 is estimated to be \$2,030,691.

**4. Specific Projects**

**a) Cortland, Nebraska – Bare Main Replacement**

This SSIR project will consist of replacing approximately 4,500 feet of unprotected bare steel main that was installed in the 1930s in Cortland, NE. It will also involve the replacement of approximately 63 service lines, each averaging 50 to 100 feet in length. The Company’s risk model provided a score of 1,951.6 for this project.

The estimated total capital cost of this SSIR Project is \$410,000. The anticipated in-service date is November 30, 2023.

**b) Wayne, Nebraska – Bare Main Replacement**

This SSIR project is the final phase of the 2021 and 2022 replacement project and will consist of replacing an approximate 16,676 feet of unprotected bare steel main that was installed in the 1970’s in Wayne, NE. It will also involve the replacement of an approximate 245 service lines, each averaging 50 to 100 feet in length. The max score for this project is 1951.6 based on the risk model.

The estimated total capital cost of this SSIR Project is \$1,620,691. The anticipated in-service date is November 30, 2023.

**B. Replacement of Transmission Pipeline**

**1. Background**

BH Nebraska Gas operates more than 1,200 miles of transmission system in Nebraska. Although age alone does not determine the integrity of a pipeline system, some older pipeline facilities installed prior to 1960 are constructed of certain materials and with certain coatings that 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, the Company's TIMP identifies transmission pipeline segments that are higher risk.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company identified no transmission pipeline segments displaying safety threats requiring remediation in 2023 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 Company used the objective criteria included in the TIMP risk model, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.

**3. Program Description**

The Company has identified no transmission replacement projects to be included within this filing.

**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. Occasionally, 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. In addition to 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**

The Company identified no facilities requiring remediation in 2023 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**

The Company used the objective criteria included in the DIMP risk model, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.

**3. Program Description**

Barricades are structures typically fabricated from pipe material and resemble a fence or cage-like structure around the meter. For most meter applications, the Company 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.

The Company has identified no barricade installation projects to be included within this filing.

**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. The Company 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.

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

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company identified no projects requiring cathodic protection remediation in 2023 under CFR Title 49, Part 192 that 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**

The Company used the objective criteria included in the DIMP and TIMP risk models, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.

3. **Program Description**

The Company has identified one specific project in 2023. The total capital expenditure for the one SSIR project in 2023 is estimated to be \$100,000 and is expected to be completed by November 30, 2023.

4. **Specific Projects**

Through a multi-year program, the Company plans to install remote monitoring units (RMUs) to remotely monitor cathodic protection on rectified systems to improve safety by alerting rectifier issues between normal reads. Monitoring rectified systems is more critical than systems protected by anodes because rectifier malfunctions have much more potential for causing personal injury or pipeline damage. For 2023, the Company has identified one specific RMU project in the Central Region with a total estimated capital cost of \$100,000. The anticipated in-service date for this project is November 30, 2023.

E. **Town Border Stations (“TBS”)**

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 and certain construction methods at the time of installation, many station components are displaying corrosion concerns on the piping and other components. In some cases, the TBS equipment and piping are still adequate, but the existing line heater is inefficient, undersized and/or corroding and needs to be replaced. Through a multi-year program, the Company 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**

The Company identified pipeline system components displaying safety threats requiring remediation in 2023 under CFR Title 49, Part 192 that be subject to either Subpart O (TIMP) or Subpart P (DIMP). For transmission components, 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. Remediation of distribution components 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**

The Company used the objective criteria included in the DIMP and TIMP risk models, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.

3. **Program Description**

Through a multi-year program, the Company 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 2023, the Company has identified and scheduled the replacement of six TBS at a total estimated capital cost of \$1,045,000. The anticipated in-service date for all projects is November 30, 2023.

4. **Specific Projects**

a) **Hays Springs, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Hays Springs, NE, 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 gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and obsolete pressure regulating and pressure relief equipment that needs updating. The max score for this project is 10.704 based on the risk model. The new TBS will include proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$170,000. The anticipated in-service date is November 30, 2023.

**b) Polk, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Polk, NE, 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 gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and obsolete pressure regulating and pressure relief equipment that needs updating. The max score for this project is 10.62 based on the risk model. The new TBS will include proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$170,000. The anticipated in-service date is November 30, 2023.

**c) Ewing, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Ewing, NE, 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 gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and obsolete pressure regulating and pressure relief equipment that needs updating. The max score for this project is 10.362 based on the risk model. The new TBS will include proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$170,000. The anticipated in-service date is November 30, 2023.

**d) Bayard, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Bayard, NE, 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 gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and obsolete pressure regulating and pressure relief equipment that needs updating. The max score for this project is 10.104 based on the risk model. The new TBS will include proper

pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$170,000. The anticipated in-service date is November 30, 2023.

e) **Atkinson, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Atkinson, NE, 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 obsolete pressure regulating equipment that needs updating. The max score for this project is 10.082 based on the risk model. The new TBS will include a much safer and more efficient catalytic panel heater, proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$195,000. The anticipated in-service date is November 30, 2023.

f) **Oshkosh, Nebraska – TBS Relocation & Replacement**

This SSIR Project includes the replacement of a TBS in Oshkosh, NE, 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 gas carrier pipe that is used as piping support resting on concrete which is a corrosion concern, valves that are in poor condition, and obsolete pressure regulating and pressure relief equipment that needs updating. The max score for this project is 10.006 based on the risk model. The new TBS will include proper pipe supports, standby alternate path to avoid system outage, new valves, and new pressure regulating and pressure relief equipment.

The total capital cost of this SSIR Project is estimated at \$170,000. The anticipated in-service date is November 30, 2023.

F. **Top of Ground (“TOG”), Span, Shallow and Exposed Pipe 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 the

## SSIR Exhibit 1 - 2023 SSIR Application Narrative

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2023 SSIR Projects – Application

Company 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 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 some places, the TOG segments have become partially buried. These TOG segments are susceptible to outside force damage as well as corrosion threats.

Spans are segments of pipe that were intentionally installed above grade and that cross a known obstacle, which can include creeks, rivers, ditches, or highways. These pipes can be supported or unsupported. Supported spans can be attached to a bridge or similar structure. Unsupported spans are generally shorter segments of pipe that are not supported by any structures and are also known as freestanding. Spans are susceptible to outside force damage as well as corrosion threats.

The risk of damage from outside forces and threats of corrosion are significant to TOG but are even greater for pipe that is shallow or has become exposed. While TOG may have been originally 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, shallow and exposed pipe are not visible and known to customers until there is imminent danger of causing damage.

While the Company will be compliant with regulatory and operational standards, such as a minimum cover of 36 inches for transmission lines, only projects that meet these definitions **and** pose a significant risk will be recommended for replacement. That risk will be based on the depth of the pipe, the location and use of the land, and the ROF.

Exposed pipe would include pipe that was originally laid above the ground (like TOG) and pipe that has not been buried deep enough as it is now visible and exposed.

## 2. **SSIR Project Classification**

### a) **Classification Under SSIR Tariff**

TOG, Span, Shallow and Exposed Pipe 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**

The Company used the objective criteria included in the DIMP and TIMP risk models, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.

**3. Program Description**

The Company has identified seven SSIR Projects to replace TOG, Span, Shallow and Exposed pipeline segments. Pipeline segments typically are replaced with polyethylene pipe, but 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 2023 is estimated to be \$14,409,186. All seven TOG, Span, Shallow and Exposed Pipe SSIR Projects are expected to be completed by November 30, 2023.

**4. Specific Projects**

**a) Gosper County, Nebraska – TOG Replacement Holdrege 9**

This SSIR project will consist of replacing 120,625 feet (22.85 miles) of pipe, all of which is TOG and installed between 1963 and 1967 in Gosper County, NE. The max score for this project is 2,202.4 based on the risk model. The estimated total capital cost of this SSIR Project is \$7,424,000. The anticipated in-service date is November 30, 2023.

**b) Dawson County, Nebraska – TOG Replacement Holdrege 10 (Phase I)**

This SSIR project will consist of replacing 82,067 (15.54 miles) of pipe, all of which is TOG and installed between 1946 and 1966 in Dawson County, NE. The max score for this project is 2,650.9 based on the risk model. The estimated total capital cost of this SSIR Project is \$3,857,149. The anticipated in-service date is November 30, 2023.

c) **Furnas County, Nebraska – TOG Replacement Holdrege 12**

This SSIR project will consist of replacing 31,595 feet (5.98 miles) of pipe, all of which is TOG and installed in 1956 in Furnas County, NE. The max score for this project is 140.42 based on the risk model. The estimated total capital cost of this SSIR Project is \$2,134,000. The anticipated in-service date is November 30, 2023.

d) **Lincoln, Nebraska – Span Replacement 48<sup>th</sup> & Deadman’s Run**

This SSIR project will consist of replacing 425 feet (0.08 miles) of pipe that is currently suspended from a bridge crossing Dead Man’s Run Creek and was installed in 1991 in Lincoln, NE. This project was not scored but was prioritized based on subject matter expert (“SME”) identification. Failing pipe supports, dis-bonded coating, exposure to road salt and other corrosion accelerating elements, and difficulty inspecting the pipe around the supports for corrosion make this project a priority. The estimated total capital cost of this SSIR Project is \$62,358. The anticipated in-service date is November 30, 2023.

e) **Lincoln, Nebraska – Span Replacement 35<sup>th</sup> & Superior**

This SSIR project will consist of replacing 1,800 feet (0.34 miles) of pipe that is currently suspended from a bridge crossing Salt Creek and was installed in 1974 in Lincoln, NE. This project was not scored but was prioritized based on SME identification. Failing pipe supports, dis-bonded coating, exposure to road salt and other corrosion accelerating elements, and difficulty inspecting the pipe around the supports for corrosion make this project a priority. The estimated total capital cost of this SSIR Project is \$689,411. The anticipated in-service date is November 30, 2023.

f) **Hall County, Nebraska – Span Replacement Platte River Bridge 9**

This SSIR project will consist of replacing 1,000 feet (0.19 miles) of pipe that is currently suspended from a bridge crossing the Platte River and was installed in 1965 in Hall County, NE. This project was not scored but was prioritized based on SME identification. Failing pipe supports, dis-bonded coating, exposure to road salt and other corrosion accelerating elements, and difficulty inspecting the pipe around the supports for corrosion make this project a priority. The estimated total capital cost of this SSIR Project is \$180,993. The anticipated in-service date is November 30, 2023.

g) **Garden County, Nebraska – Shallow Main Replacement 90-0030**

This SSIR project will consist of replacing 250 feet (0.05 miles) of pipe, all of which has found to be shallow and installed in 1966 in Garden County, NE. This project was not scored but was prioritized based on SME identification. This section of pipe was found to be severely shallow in a natural watershed area. The estimated total capital cost of this SSIR Project is \$61,275. The anticipated in-service date is November 30, 2023.

G. **MEGA Rule Projects**

1. **Background**

In October 2019, PHMSA published what is known as the Mega Rule I which applies to approximately 32.73 miles of steel transmission pipelines within the BH Nebraska Gas service territory. The Mega Rule incorporates prescriptive actions required for gas transmission pipeline operators to improve pipeline safety including maximum allowable operating pressure (“MAOP”) reconfirmation per Section 192.624 and material verification per Sections 192.607 and 192.712.

MAOP Reconfirmation is required for steel transmission pipelines without traceable, verifiable, and complete (“TVC”) pressure test records located in a high consequence area (“HCA”), Class 3, or 4 locations or “grandfathered” steel transmission pipelines with a MAOP creating a specified minimum yield strength (“SMYS”)  $\geq$  30% SMYS. Pipeline operators must develop and document procedures by July 1, 2021, and have until July 3, 2028, to reconfirm 50% of subject pipeline mileage and until July 2, 2035, to reconfirm 100% of subject pipeline mileage.

The Company has targeted 50% reconfirmation by end of year 2027 and 100% reconfirmation by end of year 2034. There are six methods identified to reconfirm MAOP:

- 1) Pressure test in conjunction with Materials Verification
- 2) Pressure reduction with Materials Verification in some instances
- 3) Engineering Critical Assessments
- 4) Pipe replacement
- 5) Pressure reduction for pipeline segments with Small Potential Impact Radius
- 6) Alternative technology as approved by PHMSA

Material Verification is required for steel transmission pipelines without TVC material records and meet the requirements for MAOP Reconfirmation or require predicted failure pressure calculations. Numerous sections of Part 192 require an operator to ensure adequate TVC materials records exist or implement a Material

Verification Program if necessary. Within an operator’s Material Verification Program, specific pipeline attributes must be verified including outside diameter, wall thickness, seam type and yield/tensile strength.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company identified the Mega Rule Projects under the PHMSA Mega Rule I. The Mega Rule I requires a pipeline operator to update incomplete records and ensure those new records are traceable, verifiable, and complete. The Mega Rule incorporates prescriptive actions required for gas transmission pipeline operators to improve pipeline safety including MAOP reconfirmation per Section 192.624 and material verification per Sections 192.607 and 192.712.

**b) Objective Criteria Analyzed**

The Company used the objective criteria specified by regulations to develop the 15-year MAOP Reconfirmation plan and Material Verification plan which is based off data with the gas GIS system as well as the TIMP risk model, availability of internal and external crews, project management constraints, local economic development plans and customer impact when applicable.

**3. Program Description**

The Company has established an MAOP Reconfirmation plan identifying segments requiring further investigation for applicability of MAOP Reconfirmation. This plan also identifies segments for which MAOP Reconfirmation is required. Segments have been assigned a year in which MAOP Reconfirmation will be completed to ensure compliance with 50% by 2027 and 100% by 2034 requirement.

The Company has identified three specific projects for 2023 to commence efforts towards the 50% requirement deadline. They are located throughout the state, specifically in Sherman, Perkins, and Boone counties. The total capital cost of these projects is estimated at \$515,000; Sherman County at \$150,000, Perkins County at \$190,000, and Boone County at \$175,000. All projects are anticipated to be in-service November 30, 2023.



4. **Specific Projects**

a) **Sherman County, Nebraska – Loup City Lateral**

This MAOP Reconfirmation project will require pressure testing approximately 539 feet of 2-inch transmission main to 803 psig with nitrogen. The pressure test will establish TVC pressure test records as required by Section 192.624. Material verification will be completed as required by Sections 192.624 and 192.607.

The estimated total capital cost for this SSIR Project is \$150,000. The anticipated in-service date is November 30, 2023.

b) **Perkins County, Nebraska – Grant Lateral**

This MAOP Reconfirmation project will require pressure testing approximately 1,395 feet of 3-inch transmission main to 1,395 psig with nitrogen. The pressure test will establish TVC pressure test records as required by Section 192.624. Material verification will be completed as required by Sections 192.624 and 192.607.

The estimated total capital cost for this SSIR Project is \$190,000. The anticipated in-service date is November 30, 2023.

c) **Boone County, Nebraska – Coleridge Lateral**

This MAOP Reconfirmation project will require pressure testing approximately 375 feet of 2-inch transmission main to 1200 psig with nitrogen. The pressure test will establish TVC pressure test records as required by Section 192.624. Material verification will be completed as required by Sections 192.624 and 192.607.

The estimated total capital cost for this SSIR Project is \$175,000. The anticipated in-service date is November 30, 2023.

H. **Meter Relocations**

1. **Background**

These 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, while replacing the customer-owned and installed “yard line” to the newly placed meter. This threat is equally caused by meter loops being at the customer’s property line, in an alley or adjacent to the street and customer-owned lines not having proper materials, repairs, maintenance, installation

procedures, or records. Oftentimes, 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 second greatest risk to its distribution system is outside force, much of which is a result of meters being hit by vehicles.

Also included are the relocation of meters that are inside residences (“Inside Meters”). Inside Meters may present a safety issue because they are susceptible to damage from customers within their homes. The consequence of a meter leak is of much greater significance because the meter does not vent to the atmosphere, but into a home with large amounts of ignition sources and customers. Also, as part of the routine process of testing and exchanging meters, these meters require entrance into the customer’s home or business and often second visits to re-light gas appliances.

Currently, BH Nebraska Gas must schedule an appointment to operate and maintain a meter located inside a customer’s premise. This meter location can result in inconvenience and disruption for customers. In addition, if the customer does not permit access to the premise, fails to honor the service appointment, or is tardy to a scheduled appointment, then the cost of waiting or rearranging the BH Nebraska Gas appointment can end up costing the Company more time and expense than if the meter is relocated outside of the premise.

The relocation of meters, whether from near a highway, street, alley or inside the residences, typically involves the installation of a new service line, the retirement of the existing meter, and the installation of a new meter assembly (risers, regulator, bypass meter assembly, and meter). Only capital activity is considered eligible in the SSIR mechanism.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company 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**

The Company used the objective criteria included in the ARMR risk model, as well as the availability of internal and external crews, project

management constraints, local economic development plans and customer impact.

3. **Program Description**

Meter loops are typically relocated from the vulnerable location to the structure to better protect them from outside force damage. In most cases, the service lines are replaced due to age, pipe material or condition of the pipe. The decision to relocate meters is dependent upon adequate material, adequate installation information, and accurate records of a customer owned fuel lines, which is not likely. The Company plans to relocate approximately 3,976 meters in 2023. The total capital expenditure for meter relocations in 2023 is estimated to be \$23,856,677. All meter relocation SSIR Projects listed are expected to be completed by December 31, 2023.

4. **Specific Projects**

Below are the towns and cities where the 2023 Meter Relocation Projects will occur and may not correspond to the project names.

a) **Lincoln, Nebraska – Meter Relocation**

The Company will relocate approximately 1,990 meters from vulnerable locations and place them next to structures in Lincoln, NE. Approximately 14,000 at-risk meters remain in Lincoln. The meters are currently located inside a structure and have an average max score of 84,787 based on the Company’s risk model. The total capital cost for relocating the 1,990 meters is estimated at \$11,940,431, and all replacements are scheduled to be in service by December 31, 2023.

b) **Scottsbluff, Nebraska – Meter Relocation**

The Company will relocate approximately 476 meters from vulnerable locations and place them next to structures in Scottsbluff, NE. The meters are currently located in alleys or easements and have an average max score of 68,752.38 based on the risk model. The total capital cost is estimated at \$2,854,342, and all replacements are scheduled to be in service by December 31, 2023.

c) **Cozad, Nebraska – Meter Relocation**

The Company will relocate approximately 425 meters from vulnerable locations and place them next to structures in Cozad, NE. The meters are currently located in alleys or easements and have an average max score of 54,464.56 based on the risk model. The total capital cost is estimated at

## SSIR Exhibit 1 - 2023 SSIR Application Narrative

Docket No. NG-112.2

2023 SSIR Projects – Application

\$2,552,879, and all replacements are scheduled to be in service by December 31, 2023.

d) **Albion, Nebraska – Meter Relocation**

The Company will relocate approximately 392 meters from vulnerable locations and place them next to structures in Albion, NE. The meters are currently located in alleys or easements and have an average max score of 9,692.22 based on the risk model. The total capital cost is estimated at \$2,350,403, and all replacements are scheduled to be in service by December 31, 2023.

e) **Holdrege, Nebraska – Meter Relocation**

The Company will relocate approximately 296 meters from vulnerable locations and place them next to structures in Holdrege, NE. The meters are currently located in alleys or easements and have an average max score of 84,547.47 based on the risk model. The total capital cost is estimated at \$1,776,160, and all replacements are scheduled to be in service by December 31, 2023.

f) **Benkelman, Nebraska – Meter Relocation**

The Company will relocate approximately 220 meters from vulnerable locations and place them next to structures in Benkelman, NE. The meters are currently located in alleys or easements and have an average max score of 49,005.89 based on the risk model. The total capital cost is estimated at \$1,321,153, and all replacements are scheduled to be in service by December 31, 2023.

g) **Norfolk, Nebraska – Meter Relocation**

The Company will relocate approximately 177 meters from vulnerable locations and place them next to structures in Norfolk, NE. The meters are currently located inside a structure and have an average max score of 38,831.98 based on the risk model. The total capital cost is estimated at \$1,061,309, and all replacements are scheduled to be in service by December 31, 2023.

**I. Obsolete Infrastructure**

**1. Background**

The focus of obsolete infrastructure projects is to replace obsolete equipment, at the end of its life expectancy, allow for quicker response to damages and pressure-related-equipment malfunctions, and ensure that gas is available, delivered and measured for BH Nebraska Gas customers in all situations. In some cases, these projects are required to maintain minimum pressure requirements on our distribution system to prevent loss of customers on a winter peak day. Projects to be included will be based on measurable criteria that improve safety and mitigate risk.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

The Company identified the Obsolete Infrastructure Projects under CFR Title 49, Part 192, Subpart P (DIMP) and under CFR Title 49, Part 192, Subpart O, TIMP. Section 192.1007 requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks. 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 objective criteria that the Company analyzed for these Projects are: pipeline design, configuration, and segmentation; pipeline leakage and other incident history; population density; city plans for future growth; Project timeframe; weather and climate constraints on the construction season; permitting constraints; service outage management; pipeline source of supply and availability of alternate gas supply; and subject matter expert knowledge.

**3. Program Description**

The Company has identified ten specific projects in 2023. The total capital expenditures for these ten SSIR Projects in 2023 is estimated to be \$5,935,868. All ten of these SSIR Projects are expected to be completed by November 30, 2023.

4. **Specific Projects**

a) **Electronic Reading Transmitters (“ERT”) Upgrades**

The company has identified five ERT replacement projects for 2023. They are located throughout the state, specifically in the Alliance, Sidney, York, Sutton, and Lincoln operating units. The total capital cost of these projects is estimated at \$5,257,368; Alliance at \$1,317,413, Sidney at \$713,332, York at \$858,520, Sutton at \$964,145, and Lincoln at \$1,403,958. All projects are anticipated to be in-service November 30, 2023.

The projects will replace obsolete 40G ERTs that are reaching their life expectancy in Alliance, Sidney, York, Sutton, and Lincoln operating units with 100G ERTs. The typical life span of ERTs are 16-20 years. A fully functioning ERT provides the ability to detect active leaks, unusual consumption that the Company investigates that allows leaks to be detected. If these ERTs are not replaced, the ability to detect active leaks and unusual consumption and the accuracy of the monthly usage reads will begin to degrade rapidly and will eventually cease.

If the 40G ERT to be replaced is attached to a meter that is 25 years or older, both the meter and the ERT will be replaced. If the 40G ERT to be replaced is attached to a meter that is less than 25 years old, only the ERT will be replaced.

Replacing 40G ERTs with 100G ERTs is necessary for future implementation of an Automated Metering Infrastructure (“AMI”) program.

Ultimately, this safety-based project allows for quicker leak response.

At the time of this filing, the Company is unsure of the availability status of materials required to complete the 2023 SSIR ERT Projects, due to supply chain related issues brought on by the COVID-19 Pandemic impacting the Company’s supplier. However, with the Commission’s approval of the flexibility requested within this application, to budget by SSIR category, any SSIR amounts not spent on 2023 SSIR ERT Projects would be available to perform other SSIR Obsolete Infrastructure projects in 2023.

b) **Chart Replacements**

The company has identified four chart replacement projects. They are located throughout the state, with one in each region. The total capital cost of these projects is estimated at \$428,500; West Region at \$30,000, Central

Region at \$68,500, South Region at \$165,000 and North Region at \$165,000. All projects are anticipated to be in-service November 30, 2023.

These projects consist of replacing outdated chart recording equipment which monitors distribution system operating pressures as required by code. The existing chart recorders require a technician to visit the site weekly or monthly, depending on the chart type, to change the paper chart. The chart recorders offer no real time pressure monitoring and they will be replaced by electronic pressure monitoring equipment that will be remotely monitored by SCADA/Gas Control and will not require regular visits.

Remotely monitored equipment that provide real-time data will give the Company the ability to detect damages resulting in large leaks and changes in pressure immediately. As SCADA and asset consequence are parts of the DIMP risk model, advanced measurement equipment allows quick response to damages. Areas without the ability to timely detect leaks or changes in pressure will be ranked higher.

Ultimately, this safety-based project will allow for quicker response to damages that result in large leaks as well as pressure regulating equipment malfunctions.

**c) 84<sup>th</sup> & O Street 16-inch Valve Removal**

The Company has identified one obsolete valve removal project in Lincoln, NE. The 16-inch valve became obsolete when the downstream piping was removed as part of an unrelated project, necessitating temporary support of the valve. If the temporary supports shift, added stress due to the excessive weight of the valve could cause a failure in the piping or the valve itself. Removal of the valve will require a 16-inch stopple fitting and a specialized contractor to complete the work. The total capital cost for this project is estimated at \$250,000. This project is anticipated to be in-service November 30, 2023.

**J. Obsolete Pipe Replacement**

**1. Background**

The Company currently operates approximately less than 850 miles of polyvinylchloride (“PVC”) distribution pipelines in Nebraska which were installed between the mid-1960s through 1980. By the mid-1980s, 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.

There are also pipelines made of material other than PVC that are not recommended currently, due to the evolution of superior piping materials and new construction methods, causing these types of piping to pose safety issues to BH Nebraska Gas and the public. Examples include copper, Aldyl-A, and Orangeburg.

The Company recognizes that all pipe that is no longer the industry standard may not necessarily be considered a significant high risk in the context of failure and consequence. Only such pipe that also poses a significant risk will be recommended for replacement. That risk will be based on the risk model with factors including, but not limited to, age, material, the location, and the ability to locate the pipe.

**2. SSIR Project Classification**

**a) Classification Under SSIR Tariff**

Obsolete Pipe 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**

The Company used the objective criteria included in the DIMP and TIMP risk models, as well as the availability of internal and external crews, project management constraints, local economic development plans and customer impact.



**3. Program Description**

The Company has identified three specific PVC distribution main pipelines that will be replaced with PE pipe in 2023. The total capital expenditure for these three SSIR Projects in 2023 is estimated to be \$2,311,647. All three PVC SSIR Projects are expected to be completed by November 30, 2023.

**4. Specific Projects**

**a) Franklin County, Nebraska – PVC Replacement Kearney 1**

This SSIR project will consist of replacing 48,900 feet (9.26 miles) of pipe, all of which is PVC and installed between 1968 and 1969 in Franklin County, NE. The max score for this project is 1,661.7 based on the risk model. The estimated total capital cost of this SSIR Project is \$1,792,000. The anticipated in-service date is November 30, 2023.

**b) Webster County, Nebraska – PVC Replacement Kearney 2 (Phase I)**

This SSIR project will consist of replacing 9,400 feet (1.78 miles) of pipe, all of which is PVC and installed in 1968 in the Webster County, NE. The max score for this project is 1,649.30 based on the risk model. The estimated total capital cost of this SSIR Project is \$303,669. The anticipated in-service date is November 30, 2023.

**c) Clay County, Nebraska – PVC Replacement Sutton 18 (Phase I)**

This SSIR project will consist of replacing 5,500 feet (0.98 miles) of pipe, all of which is PVC and installed in 1966 in the Clay County, NE area. The max score for this project is 1,665.3 based on the risk model. The estimated total capital cost of this SSIR Project is \$215,978. The anticipated in-service date is November 30, 2023.

**K. Facility Relocation Projects**

The SSIR Tariff authorizes the Company to recover the costs of facility relocation projects in the SSIR Charge. The Company each year encounters the need to conduct facility relocation projects in connection with municipal infrastructure projects. These facility relocation projects, when they occur, 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.

Although the Company is currently aware of some state or municipal infrastructure projects in 2023 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, the possibility of changes or cancellations to those or identification of additional qualified projects could arise. Therefore, through a subsequent filing, the Company will provide updates of its facility relocation projects in connection with state or municipal infrastructure projects and will seek to recover the Eligible System Safety and Integrity Costs associated with those projects that occurred.

**L. Data Infrastructure Improvement Program (“DIIP”)**

**1. Background**

In order to appropriately rank higher risk pipeline projects for purposes of prioritizing accelerated threat mitigation efforts, it is vital for the Company to be able to identify risks, understand the consequences of those risks, close known data gaps, and continuously improve system knowledge. The Company has implemented a Data Infrastructure Improvement Program (“DIIP”) to close known data gaps and verify current data for accuracy. This data will help develop more predictive and analytical risk models, improve system mapping, and ultimately help protect against our top threat of third-party damage.

As data gaps are closed and data is verified as a result of the DIIP, the results will be incorporated annually into the DIMP and TIMP risk models. The effect will be a continuous improvement of the asset risk outputs, which will enhance the models. Verification of location-based data will directly improve safety of the system as well.

As the DIIP progresses, future SSIR applications will include the impact to the DIMP and TIMP programs and risk models, the Company’s knowledge and population of high-risk-defined assets, the selection of annual portfolio of projects, and overall program(s) life cycles.

The Company has initiated a similar DIIP for transmission lines and has seen significant improvement of data by increased spatial accuracy of transmission assets, in some cases by hundreds of feet. Having accurate asset centerlines and mapping previously unmapped service lines will have a direct impact on the DIMP and TIMP, and by extension the safety of the public, environment, customers, and employees. It will ensure proper one-call coverage and have practical safety impacts for third party damage reduction, safe operations, and emergency response.

2. **SSIR Project Classification**

a) **Classification Under SSIR Tariff**

The Company identified the DIIP under CFR Title 49, Part 192, Subpart P (DIMP) and under CFR Title 49, Part 192, Subpart O, TIMP. Section 192.1007 requires a pipeline operator to identify threats, evaluate and risk rank, and identify and implement measures to address risks. ASME B31.8S which is a referenced standard under the CFR Title 49, Part 192, Subpart O, identifies the necessary data elements needed to model risk accurately and reliably and recommends surveying all potential locations where records could exist and to remedy data deficiencies known to the transmission pipeline. Also, PHMSA Advisory Bulletins ADB 11-01, ADB 12-06, and the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 direct owners to verify that data and records accurately reflect the MAOP of their pipelines within Class 3, Class 4 and in High consequence areas.

b) **Objective Criteria Analyzed**

The DIIP is intended to improve the knowledge of the BH Nebraska Gas pipeline system to provide BH Nebraska Gas with the ability to positively confirm the integrity of the pipeline system. There continues to be knowledge gaps with respect to the pipeline system. The Program will implement specific initiatives to improve system data, including data gap elimination, GIS updates, and programmatic improvements.

3. **Program Description**

The Company has identified the Transmission/Gathering Traceable, Verifiable and Complete (TVC) Records, Gas Service Card Mapping, and Distribution Main & Service Centerline Survey projects within the DIIP as described below. The total SSIR recoverable expenditure for 2023 is estimated to be \$3,258,210.

4. **Specific Projects**

a) **Transmission/Gathering Traceable, Verifiable and Complete (“TVC”) Records**

This project includes gathering, scanning, and storing original construction records in a document management system and linking to the Geospatial Information System (“GIS”) asset record. The documents will be used to verify Maximum Allowable Operating Pressure and MAOP attributes and update any missing pipeline attributes and features in GIS. For each transmission pipeline and station, a detailed GIS build will be performed using all available information collected from the digitized records.

Relevant data will be extracted and used to perform MAOP calculations and verification. Data generated from the calculations will then be repopulated into the GIS system creating a more robust database.

The total recoverable expenditure for 2023 is estimated to be \$1,023,241 and is included in the SSIR Application.

**b) Gas Service Card Mapping**

The Gas Service Card Mapping Projects includes mapping, verifying, or adjusting the centerlines of service line as-builts (service cards) in the Company’s GIS system. These service cards are currently maintained as digital records in our document management system and linked to the service points in the GIS system, but the majority remain un-mapped in the GIS system. This project would include updating the pipeline spatial location, physical pipeline attributes and pressure test attributes in the GIS system.

The total recoverable expenditure for 2023 is estimated to be \$1,020,480 and is included in the SSIR Application.

**c) Distribution Main & Service Centerline Survey**

This is a high accuracy Global Positioning System (“GPS”) survey of mains, service lines and meter locations. This project includes adding unmapped mains and service lines to GIS, updating the spatial location of previously mapped mains and service lines, and correcting the location of service points and meters in GIS. Data gathered in the field includes meter structure location, meter number, above grade facility data, and unlocatable pipeline information. Prioritization for pipeline assets will be aligned with the DIMP risk scores which considers unknown data in the risk model.

This project will also update data attributes for pipeline features in GIS gathered from legacy paper and digital records, combined with the GPS survey data. The process to review construction records will include legacy datasets and original construction records. Paper records will be scanned, indexed and linked to GIS pipeline records.

The total recoverable expenditure for 2023 is estimated to be \$1,214,489 and is included in the SSIR Application.

d) **GIS Pressure Systems**

This project will create unique pressure systems in GIS that will align with our Gas Valve program that is used to manage pressure regulating stations. These pressure systems will be updated with data attributes needed to manage these systems, examples of which include system MAOP and Operating Pressure. The correction of any connectivity issues with the GIS data will also be included in the scope of this project.

There are no costs for this project in 2023.

e) **GIS Emergency Response Zones**

This project focuses on the creation and standardization of Emergency Response Zones per BH Nebraska Gas's Operations and Maintenance Manual to support Emergency Valves in GIS. Emergency Response Zones allow the Company to isolate gas systems during an emergency event. This project allows BH Nebraska Gas to manage Emergency Response Zones in GIS instead of the paper systems managed by each office. This project also includes the digitization of the emergency response plans for each system and linking to these zones, it will create consistency across the Company by providing personnel with virtual access to the plans and ensuring emergency valves align with our valve maintenance database.

There are no costs for this project in 2023.

f) **GIS Cathodic Protection ("CP") Zones**

This project includes the creation and standardization of Cathodic Protection (CP) zones and features in GIS and ensuring consistency between GIS and the CP Databases. CP test stations as well as other CP assets will be included in scope for this project.

There are no costs for this project in 2023.

g) **Bare Pipe Inspection ("BPI") and Subject Matter Expert ("SME") Pipeline Attribute Assessment**

This project uses electronically available Buried Pipe Inspection information and Subject Matter Expert knowledge to analyze and identify data issues. The data collected from these efforts are used to make attribute corrections and fill data gaps in the GIS system. The project includes a process to verify the quality of this data before any updates are made in the GIS system.

There are no costs for this project in 2023.

**h) Document Management Migration**

This project involves the migration of digital asset records from multiple locations to a single location within the company's document management system. The document management system will allow easier access to the documents by enabling searches via the Metadata tags associated with each record. It will make the record lifecycle and version control more manageable.

There are no costs for this project in 2023.

**SSIR Exhibit 4 - Consolidated Tariff - Redlined**

**Black Hills Nebraska Gas, LLC**  
**d/b/a Black Hills Energy**  
 Nebraska Natural Gas Tariff  
 Filed with the Nebraska Public Service Commission

Seventh ~~Sixth~~-Revised Sheet No. 78  
 Cancels Sixth ~~Fifth~~-Revised Sheet No. 78

**RATE SCHEDULES AND OTHER CHARGES**  
**SCHEDULE OF RATES**

Rate Areas 1, 2, & 3:

Type of Charge	Billing Unit	Base	SSIR	HEAT	Line Locates	Gas Cost
<b>Residential</b>		1/	2/	3/	4/	
Customer Charge	Per Month	\$15.45	\$3.07 <sub>2.07</sub>	\$0.14		
Volumetric Charge First 20 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 20 Therms	Per Therm	\$0.15000				5/
<b>Commercial</b>						
Customer Charge	Per Month	\$28.43	\$9.58 <sub>6.25</sub>	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000				5/
<b>Commercial – EO</b>						
Customer Charge	Per Month	\$28.43	\$9.58 <sub>6.25</sub>	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000				5/

Rate Area 5

Type of Charge	Billing Unit	Base 1/	SSIR 2/	HEAT 3/	GSCA 6/	Gas Cost
<b>Residential</b>						
Customer Charge	Per Month	\$15.45	\$3.07 <sub>2.07</sub>	\$0.14		
Volumetric Charge First 20 Therms	Per Therm	\$0.50858			\$0.00000	7/
Volumetric Charge Over 20 Therms	Per Therm	\$0.15000			\$0.00000	7/
<b>Commercial</b>						
Customer Charge	Per Month	\$28.43	\$9.58 <sub>6.25</sub>	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858			\$0.00000	7/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000			\$0.00000	7/
<b>Agricultural Seasonal Service</b>						
Minimum Volumetric Charge	Per Therm	\$0.00100	--	--	\$0.00000	7/
Maximum Volumetric Charge	Per Therm	\$0.50000	--	--	\$0.00000	7/

- 1/ Base rates as set for on Sheets No. 79, 80, and 82
- 2/ System Safety and Integrity Rider set forth on Sheets No. 127-131
- 3/ High Efficiency Assistance Tool set forth on Sheet No. 132
- 4/ Line Locates Surcharge as set forth on Sheets No. 133
- 5/ Gas Cost rates for Rate Areas 1-3 as set forth on Sheets No. 95 and 96
- 6/ Gas Supply Cost Adjustment as set forth on Sheet No. 123
- 7/ Gas Cost rates for Rate Area 5 (Supplier Commodity Charge) is the applicable rate agreed to by the Customer and its Supplier in the Choice Gas Program. See Sheets No. 97 to 107

DATE OF ISSUE: August 1<sub>November 30,</sub> 2022<sub>4</sub>  
 ISSUED BY: Robert J. Amdor

EFFECTIVE DATE: January 1, 2023<sub>2</sub>

SSIR Exhibit 4 - Consolidated Tariff - Redlined

Black Hills Nebraska Gas, LLC  
d/b/a Black Hills Energy  
Nebraska Natural Gas Tariff  
Filed with the Nebraska Public Service Commission

Third ~~Second~~ Revised Sheet No. 128  
Cancels ~~Second-First~~ Sheet No. 128

**OTHER COST RECOVERY MECHANISMS  
SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)**

**APPLICABILITY** All Jurisdictional Residential, Commercial, and Commercial – EO customers are subject to this SSIR designed to collect Eligible System Safety and Integrity Costs, as defined herein. The System Safety and Integrity Rider Charge shall be subject to annual changes to be effective on January 1 of each year. The System Safety and Integrity Rider Charge to be applied to each Rate Schedule is set forth on the Rate Schedules and Other Charges Schedule of Rates, Sheet No. 78.

**ANNUAL APPLICATION AND ANNUAL SURVEILLANCE FILINGS**

A. Each proposed revision in the System Safety and Integrity Rider Charge shall be accomplished by filing an application on or around August 1 of each year to take effect on the following January 1 (the “Annual Application”). The Annual Application shall contain the following items:

- i. Pertinent information and supporting data related to Eligible System Safety and Integrity Costs, including, at a minimum, Project description and scope, Project costs and projected in-service dates for the Projects budgeted to be completed in the upcoming calendar year.
- ii. Details of the Project costs incurred during the previous calendar year including an explanation of how the Project costs were managed and any deviations between budgeted and actual costs, **actual or projected in-service dates, and the expected schedule for completion of the previous calendar year’s projects.**
- iii. The calculation of the SSIR True-Up Amount, if any.
- iv. The calculation of the Deferred SSIR Balance, if any.

B. The Public Advocate shall conduct an examination of the Annual Application. The Public Advocate shall cause an examination to be made of the Annual Application to confirm that the under lying actual and projected Eligible System Safety and Integrity Costs (“SSIR revenue requirement”) are in accordance with this SSIR Tariff and to confirm proper calculation of the SSIR True-Up Amount and the Deferred SSIR Balance. The Commission shall require a report regarding such examination to be prepared and filed by the Public Advocate with the Commission not later than sixty days after the Annual Application is filed. No other revenue requirement or rate making issue shall be examined in consideration of the Annual Application unless the consideration of such affects the determination of the validity of the System Safety and Integrity Rider Charge.

(continued)

DATE OF ISSUE: **August 1** ~~November 30~~, 202**24**  
ISSUED BY: Robert J. Amdor

EFFECTIVE DATE: January 1, 202**32**



## SSIR Exhibit 4 - Consolidated Tariff - Redlined

Black Hills Nebraska Gas, LLC

d/b/a Black Hills Energy

Nebraska Natural Gas Tariff

Filed with the Nebraska Public Service Commission No. 129

Fourth ~~Third~~ Revised Sheet No. 129

Cancel ~~Third~~ ~~Second~~ Revised Sheet

### RATE SCHEDULES AND OTHER CHARGES SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)

ANNUAL  
APPLICATION  
AND ANNUAL  
SURVEILLANCE  
FILINGS  
(Continued)

- C. The Commission shall hold a hearing on the Annual Application at which the Public Advocate shall present his or her report and shall act as trial staff before the Commission. The Commission shall issue an order to become effective not later than January 1 of the year following the filing of the Annual Application. If the Commission finds that the Annual Application complies with the requirements of this SSIR Tariff, the Commission shall enter an order authorizing the Company to collect the proposed System Safety and Integrity Rider Charge, including any SSIR True-Up Amount and any Deferred SSIR Balance, effective on January 1 of the following year.
- D. The Company shall make ~~an~~ annual surveillance filings within ~~ninety~~ ~~sixty~~ days of the end of each calendar year. Such filings shall include calculations of the rate base separated into regular and SSIR components, the realized rates of return on the rate base components, along with supporting calculations. Additionally, the filing shall include an update regarding the status of the ~~previous~~ ~~current~~ calendar year's SSIR Project costs, ~~actual or~~ projected in-service dates, and, ~~if any remain uncompleted at the time of submittal of the annual surveillance filing,~~ the expected schedule ~~for completion~~ ~~over the remainder of the calendar year.~~

DEFINITIONS

- A. "Deferred SSIR Balance" shall be equal to the balance, positive or negative, of SSIR revenues at the end of a particular calendar year less the Eligible System Safety and Integrity Costs as projected by the Company for that particular calendar year, plus monthly interest calculated on that balance at a rate equal to the then current rate of interest on pipeline refunds established by the Federal Energy Regulatory Commission.
- B. "Eligible System Safety and Integrity Costs" shall 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 System Safety and Integrity Rider 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 calendar year in which the System Safety and Integrity Rider Charge shall be in effect. The return and income taxes and plant related costs associated with

DATE OF ISSUE: August 1~~November 30,~~ 2022~~4~~  
ISSUED BY: Robert J. Amdor

EFFECTIVE DATE: January 1, 2023~~2~~

NPSC Received 08/01/2022

## SSIR Exhibit 4 - Consolidated Tariff - Redlined

Black Hills Nebraska Gas, LLC

d/b/a Black Hills Energy

Nebraska Natural Gas Tariff

Filed with the Nebraska Public Service Commission

Second ~~First~~ Revised Sheet No. 129.1

Cancels ~~First Original~~ Sheet No.

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### RATE SCHEDULES AND OTHER CHARGES SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)

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DEFINITIONS  
(Continued)

- v. Generally, Projects eligible for recovery under the SSIR Tariff include:
- i. Replacement of Bare Steel Distribution Mains
  - ii. Replacement of High-Risk Transmission Pipelines
  - iii. Replacement of Service Lines
  - iv. Installation of Barricades to Protect At-Risk Meter, Regulator, and Valve settings
  - v. Cathodic Protection and Corrosion Prevention
  - vi. Town Boarder Station Upgrades or Replacements
  - vii. Top of Ground, Shallow (less than three feet cover and posing risk) and Exposed Pipe
  - viii. At-Risk Meter Relocations and Inside Meter Relocations with Replacement of Meter as part of a capital activity
  - ix. Obsolete Infrastructure (e.g., PVC Pipe posing risk or the removal of which provides ancillary benefits supported by risk model analysis and results)
  - x. Required Facility Relocations
  - xi. Data Infrastructure Improvement Program

The Company shall use three distinct risk models corresponding to the TIMP, DIMP and the At-Risk Meter Relocation ("ARMR") Program. All three models shall use objective and external factors and provide scores that correlate to proactive analysis of system risk.

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DATE OF ISSUE: ~~August 1~~<sup>November 30</sup>, 2022~~4~~  
ISSUED BY: Robert J. Amdor

EFFECTIVE DATE: January 1, 2023~~2~~

NPSC Received 08/01/2022

**SSIR Exhibit 4 - Consolidated Tariff - CLEAN**

**Black Hills Nebraska Gas, LLC**  
**d/b/a Black Hills Energy**  
 Nebraska Natural Gas Tariff  
 Filed with the Nebraska Public Service Commission

Seventh Revised Sheet No. 78  
 Cancels Sixth Revised Sheet No. 78

**RATE SCHEDULES AND OTHER CHARGES**  
**SCHEDULE OF RATES**

Rate Areas 1, 2, & 3:

Type of Charge	Billing Unit	Base	SSIR	HEAT	Line Locates	Gas Cost
<b>Residential</b>		1/	2/	3/	4/	
Customer Charge	Per Month	\$15.45	\$3.07	\$0.14		
Volumetric Charge First 20 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 20 Therms	Per Therm	\$0.15000				5/
<b>Commercial</b>						
Customer Charge	Per Month	\$28.43	\$9.58	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000				5/
<b>Commercial – EO</b>						
Customer Charge	Per Month	\$28.43	\$9.58	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858				5/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000				5/

Rate Area 5

Type of Charge	Billing Unit	Base 1/	SSIR 2/	HEAT 3/	GSCA 6/	Gas Cost
<b>Residential</b>						
Customer Charge	Per Month	\$15.45	\$3.07	\$0.14		
Volumetric Charge First 20 Therms	Per Therm	\$0.50858			\$0.00000	7/
Volumetric Charge Over 20 Therms	Per Therm	\$0.15000			\$0.00000	7/
<b>Commercial</b>						
Customer Charge	Per Month	\$28.43	\$9.58	\$0.14		
Volumetric Charge First 40 Therms	Per Therm	\$0.50858			\$0.00000	7/
Volumetric Charge Over 40 Therms	Per Therm	\$0.15000			\$0.00000	7/
<b>Agricultural Seasonal Service</b>						
Minimum Volumetric Charge	Per Therm	\$0.00100	--	--	\$0.00000	7/
Maximum Volumetric Charge	Per Therm	\$0.50000	--	--	\$0.00000	7/

- 1/ Base rates as set for on Sheets No. 79, 80, and 82
- 2/ System Safety and Integrity Rider set forth on Sheets No. 127-131
- 3/ High Efficiency Assistance Tool set forth on Sheet No. 132
- 4/ Line Locates Surcharge as set forth on Sheets No. 133
- 5/ Gas Cost rates for Rate Areas 1-3 as set forth on Sheets No. 95 and 96
- 6/ Gas Supply Cost Adjustment as set forth on Sheet No. 123
- 7/ Gas Cost rates for Rate Area 5 (Supplier Commodity Charge) is the applicable rate agreed to by the Customer and its Supplier in the Choice Gas Program. See Sheets No. 97 to 107

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**SSIR Exhibit 4 - Consolidated Tariff - CLEAN**

**Black Hills Nebraska Gas, LLC**  
**d/b/a Black Hills Energy**  
Nebraska Natural Gas Tariff  
Filed with the Nebraska Public Service Commission

Third Revised Sheet No. 128  
Cancels Second Sheet No. 128

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**OTHER COST RECOVERY MECHANISMS**  
**SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)**

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**APPLICABILITY** All Jurisdictional Residential, Commercial, and Commercial – EO customers are subject to this SSIR designed to collect Eligible System Safety and Integrity Costs, as defined herein. The System Safety and Integrity Rider Charge shall be subject to annual changes to be effective on January 1 of each year. The System Safety and Integrity Rider Charge to be applied to each Rate Schedule is set forth on the Rate Schedules and Other Charges Schedule of Rates, Sheet No. 78.

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**ANNUAL APPLICATION AND ANNUAL SURVEILLANCE FILINGS**

A. Each proposed revision in the System Safety and Integrity Rider Charge shall be accomplished by filing an application on or around August 1 of each year to take effect on the following January 1 (the “Annual Application”). The Annual Application shall contain the following items:

- i. Pertinent information and supporting data related to Eligible System Safety and Integrity Costs, including, at a minimum, Project description and scope, Project costs and projected in-service dates for the Projects budgeted to be completed in the upcoming calendar year.
- ii. Details of the Project costs incurred during the previous calendar year including an explanation of how the Project costs were managed and any deviations between budgeted and actual costs, actual or projected in-service dates, and the expected schedule for completion of the previous calendar year’s projects.
- iii. The calculation of the SSIR True-Up Amount, if any.
- iv. The calculation of the Deferred SSIR Balance, if any.

B. The Public Advocate shall conduct an examination of the Annual Application. The Public Advocate shall cause an examination to be made of the Annual Application to confirm that the underlying actual and projected Eligible System Safety and Integrity Costs (“SSIR revenue requirement”) are in accordance with this SSIR Tariff and to confirm proper calculation of the SSIR True-Up Amount and the Deferred SSIR Balance. The Commission shall require a report regarding such examination to be prepared and filed by the Public Advocate with the Commission not later than sixty days after the Annual Application is filed. No other revenue requirement or rate making issue shall be examined in consideration of the Annual Application unless the consideration of such affects the determination of the validity of the System Safety and Integrity Rider Charge.

(continued)

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**SSIR Exhibit 4 - Consolidated Tariff - CLEAN**

**Black Hills Nebraska Gas, LLC**

**d/b/a Black Hills Energy**

Nebraska Natural Gas Tariff

Filed with the Nebraska Public Service Commission

Fourth Revised Sheet No. 129

Cancels Third Revised Sheet No. 129

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**RATE SCHEDULES AND OTHER CHARGES  
SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)**

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ANNUAL  
APPLICATION  
AND ANNUAL  
SURVEILLANCE  
FILINGS  
(Continued)

- C. The Commission shall hold a hearing on the Annual Application at which the Public Advocate shall present his or her report and shall act as trial staff before the Commission. The Commission shall issue an order to become effective not later than January 1 of the year following the filing of the Annual Application. If the Commission finds that the Annual Application complies with the requirements of this SSIR Tariff, the Commission shall enter an order authorizing the Company to collect the proposed System Safety and Integrity Rider Charge, including any SSIR True-Up Amount and any Deferred SSIR Balance, effective on January 1 of the following year.
- D. The Company shall make an annual surveillance filing within ninety days of the end of each calendar year. Such filings shall include calculations of the rate base separated into regular and SSIR components, the realized rates of return on the rate base components, along with supporting calculations. Additionally, the filing shall include an update regarding the status of the previous calendar year's SSIR Project costs, actual or projected in-service dates, and, if any remain uncompleted at the time of submittal of the annual surveillance filing, the expected schedule for completion.

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DEFINITIONS

- A. "Deferred SSIR Balance" shall be equal to the balance, positive or negative, of SSIR revenues at the end of a particular calendar year less the Eligible System Safety and Integrity Costs as projected by the Company for that particular calendar year, plus monthly interest calculated on that balance at a rate equal to the then current rate of interest on pipeline refunds established by the Federal Energy Regulatory Commission.
- B. "Eligible System Safety and Integrity Costs" shall 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 System Safety and Integrity Rider 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 calendar year in which the System Safety and Integrity Rider Charge shall be in effect. The return and income taxes and plant related costs associated with

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## SSIR Exhibit 4 - Consolidated Tariff - CLEAN

**Black Hills Nebraska Gas, LLC**  
**d/b/a Black Hills Energy**  
Nebraska Natural Gas Tariff  
Filed with the Nebraska Public Service Commission

Second Revised Sheet No. 129.1  
Cancels First Sheet No. 129.1

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### **RATE SCHEDULES AND OTHER CHARGES** **SYSTEM SAFETY AND INTEGRITY RIDER (SSIR)**

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DEFINITIONS  
(Continued)

- v. Generally, Projects eligible for recovery under the SSIR Tariff include:
- i. Replacement of Bare Steel Distribution Mains
  - ii. Replacement of High-Risk Transmission Pipelines
  - iii. Replacement of Service Lines
  - iv. Installation of Barricades to Protect At-Risk Meter, Regulator, and Valve settings
  - v. Cathodic Protection and Corrosion Prevention
  - vi. Town Border Station Upgrades or Replacements
  - vii. Top of Ground, Shallow (less than three feet cover and posing risk) and Exposed Pipe
  - viii. At-Risk Meter Relocations and Inside Meter Relocations with Replacement of Meter as part of a capital activity
  - ix. Obsolete Infrastructure (e.g., PVC Pipe posing risk or the removal of which provides ancillary benefits supported by risk model analysis and results)
  - x. Required Facility Relocations
  - xi. Data Infrastructure Improvement Program

The Company shall use three distinct risk models corresponding to the TIMP, DIMP and the At-Risk Meter Relocation (“ARMR”) Program. All three models shall use objective and external factors and provide scores that correlate to proactive analysis of system risk.

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