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BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

**IN THE MATTER OF THE APPLICATION)
OF BLACK HILLS NEBRASKA GAS, LLC,)
D/B/A BLACK HILLS ENERGY, RAPID) Docket No. NG-109
CITY, SOUTH DAKOTA SEEKING)
APPROVAL OF A GENERAL RATE)
INCREASE)**

DIRECT TESTIMONY AND EXHIBITS OF

CHARLES A. FIJNVANDRAAT, PE

ON BEHALF OF

THE NEBRASKA PUBLIC ADVOCATE

September 14, 2020

TABLE OF CONTENTS

I. INTRODUCTION 3
II. STATEMENT OF QUALIFICATIONS 3
III. PURPOSE OF TESTIMONY 4
IV. REDEFINING EXISTING SSIR CATEGORIES..... 5
V. ADDITIONAL PROJECT CATEGORIES 8
VI. 2021 FORECASTED PROJECTS 9
VII. CONCLUSION 10

LIST OF ATTACHMENTS

Attachment-1 Professional Experience and Qualifications of Charles A. Fijnvandraat, PE

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Charles A. Fijnvandraat. My business address is 94 Elm Street, Andover, Massachusetts, 01810.

Q. BY WHOM ARE YOU EMPLOYED?

A. I am the principal of Fijnvandraat Consulting Group, Inc. (fcgEnergy). I am performing this work as a subcontractor to Blue Ridge Consulting Services, Inc (“Blue Ridge”).

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the Nebraska Public Advocate.

II. STATEMENT OF QUALIFICATIONS

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Science in Electrical Engineering from the University of Hartford and a Master of Business Administration from Western New England University.

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL QUALIFICATIONS.

A. I have been actively engaged in the utility industry for over 30 years. I have held electric utility management positions ranging from field operations to engineering and as a consultant supported various electric and gas utilities in developing operational improvement initiatives, defining best in class engineering design and material standards while supporting regulatory strategies for rate cases and targeted capital trackers.

- 1 2. Additional Project Categories, including Data Integrity Improvement Program
- 2 (DIIP) projects and Reliability-defined projects
- 3 3. 2021 Forecasted Projects

4 **IV. REDEFINING EXISTING SSIR CATEGORIES**

5 **Q. PLEASE SUMMARIZE THE CATEGORY REDEFINITION ISSUE.**

6 A. On November 7, 2014, SourceGas Distribution LLC, the predecessor company acquired
7 by Black Hills, received authorization for an SSIR to recover prudent investment in
8 qualified safety projects without having to file a general rate case application. A provision
9 of the approved SSIR is that the Company would file a general rate case at least every sixty
10 months. The current case meets this criterion. Eligible projects would include those
11 meeting one of these criteria: Transmission Integrity Management Program (TIMP),
12 Distribution Integrity Management Program (DIMP), Pipeline and Hazardous Materials
13 Safety Administration (PHMSA), and Relocations.

14 Projects that meet the above criteria could fall into one of nine major categories:

- 15 1. Replacement of Bare Steel Distribution Main
- 16 2. Replacement of Transmission Pipeline
- 17 3. Barricades
- 18 4. Cathodic Protection and Corrosion Prevention
- 19 5. Town Border Stations
- 20 6. Top of Ground (TOG) Replacement
- 21 7. Meter Relocations
- 22 8. PVC Pipe Replacement
- 23 9. Facility Relocation

24 In its application, the Company proposes redefining three of these major categories
25 to include additional project types: (1) Top of Ground (TOG) projects may include the
26 length of pipe (Span), Shallow, and Exposed Pipeline Replacement; (2) Meter Relocations
27 may include meters located near highways, streets, alleys, or inside structures; and (3) PVC

1 Pipe Replacement may include additional gas pipe material of copper, Aldyl-A, and
2 Orangeburg, as well as others.

3 **Q. DO YOU AGREE WITH THE THREE CATEGORICAL REDEFINITIONS**
4 **PROPOSED?**

5 A. While I generally agree with expanding the categories to include the additional project
6 types, I believe certain ambiguities should be addressed by the Company for each of these
7 categories to support both the approval of forecasted projects and the facilitation of future
8 prudency audits of the SSIR projects.

9 **Q. PLEASE EXPLAIN YOUR CONCERN WITH THE TOG CATEGORY.**

10 A. The testimony of Black Hills witness Kevin Jarosz defines the exposed and span pipe types
11 to be included. However, the shallow pipe is only partially defined as not as deep as pipe
12 generally installed today that is “below grade with a minimum cover of three feet.”¹ While
13 Witness Jarosz’s testimony does present a photo example of shallow pipe that is about six
14 inches below the land surface, there is no firm definition of shallow pipe that can guide
15 auditors of future SSIR years in evaluating whether projects are indeed eligible based on
16 categorical criteria. Thus, it is unclear whether all pipe currently installed without a
17 minimum cover of three feet would be considered eligible or if other attributes can more
18 precise definition, such as failure risk and consequence.

19 **Q. PLEASE EXPLAIN YOUR CONCERN WITH THE METER RELOCATION**
20 **CATEGORY.**

¹ BHE Jarosz Direct at 24:3–4.

1 A. My concern with the At-Risk Meter Relocation (ARMR) program is similar to that of the
2 TOG as it involves ambiguity of definition. While Black Hills witness Marc Lewis
3 specifies the types of at-risk meters and explains that the relocation would place the meters
4 outside but close to customer facilities,² he does not address the question of whether the
5 same meter would simply be relocated or if the current meter would be retired and replaced
6 with a new meter. If a meter is simply moved, it is not a capital activity and, therefore,
7 should not be included in the SSIR. If a meter is retired and replaced, it is a capital activity.
8 Also, within the context of risk (failure and consequence), it is unclear if additional assets
9 will be included, e.g. service lines. Therefore, the ambiguity is that the Company has not
10 identified with specificity the replacement-only nature of this capital activity.

11 **Q. PLEASE EXPLAIN YOUR CONCERN WITH THE PVC PIPE REPLACEMENT**
12 **CATEGORY.**

13 A. The concern in this category is of the risk ranking for certain pipe made of a material that
14 is no longer the industry standard but may not necessarily be considered a significant high
15 risk in the context of failure and consequence but has ancillary benefits of addressing
16 operational limitations of pipe locating and making field connections and leak repairs.
17 Again, I recommend that the Company should ensure defensible analysis is assembled to
18 be supplied to future SSIR auditors who are evaluating the Company's inclusion of those
19 projects in the SSIR.

20

² BHE Lewis Direct at 31:21–32:7.

1 **Q. DO YOU AGREE WITH INCLUDING RELIABILITY AS AN ADDITIONAL**
2 **CATEGORY?**

3 Yes; however, this category is only generally defined in Company testimony. While I agree
4 that the SSIR is the place to include projects of safety and reliability, a case could be made
5 that safety and/or reliability are somehow involved in any utility project. This category
6 could almost be labeled “Miscellaneous” to include anything that doesn’t fit in the other
7 categories. While I do believe this Reliability category could be used for projects whose
8 overall justification is predominately safety and reliability, the Company should have some
9 measurable criteria so as to ensure the category is not being too broadly interpreted and
10 that the projects selected are chosen and prioritized based on a defensible approach

11 **VII. 2021 FORECASTED PROJECTS**

12 **Q. HAVE YOU REVIEWED THE 2021 FORECASTED PROJECTS, AND DO YOU**
13 **AGREE WITH THEIR INCLUSION IN THE 2021 SSIR?**

14 A. I have reviewed the forecasted projects as presented in Exhibit JLB-5 of Black Hills
15 witness Bennett. For reasons I have explained earlier in my testimony, I cannot recommend
16 approval of all these projects. The new category of reliability has ambiguities of criteria
17 for inclusion. Additionally, the redefinition to include shallow pipe has ambiguity.
18 Therefore, I cannot recommend the forecasted projects in those categories that do not have
19 the necessary specificity of criteria for inclusion in the 2021 SSIR.

20 **Q. PLEASE IDENTIFY THE SPECIFIC FORECASTED PROJECTS FOR WHICH**
21 **YOU DO NOT RECOMMEND APPROVAL AT THIS TIME.**

1 A. Using the information as presented on Exhibit JLB-5, the following table includes the four
2 “Shallow” projects and seven “Reliability” projects for which I am withholding
3 recommendation of approval at this time.

4 **Table 1: Black Hills 2021 SSIR Forecasted Projects of PA Concern⁴**

Line No.	Project #	Project Name	Criteria	Project Category/ Account Allocator	In Service Date	Total Company Project Amount
49	FP.10075072	10075072 - Shallow Main - SUTTON 68332.92	TIMP	TOG/Shallow/Expo	Nov-21	\$ 108,379
51	FP.10075074	10075074 - Shallow Main - KEARNEY 1498.52	TIMP	TOG/Shallow/Expo	Nov-21	\$ 147,720
53	FP.10075169	10075169 - Shallow Main - ALBION 20122.78	TIMP	TOG/Shallow/Expo	Nov-21	\$ 3,003,281
54	FP.10075170	10075170 - Shallow Main - ALBION 31129.47	TIMP	TOG/Shallow/Expo	Nov-21	\$ 3,252,650
87	FP.10063929	10063929-Giles to Valaretta Drive (system loop)	Reliability	Loops	Aug-21	\$ 127,760
88	FP.10064514	10064514-Hwy 31 & Giles DRS (system loop/bolste	Reliability	Loops	Aug-21	\$ 120,000
89	FP.10072085	10072085-Columbus Capacity Loop	Reliability	Loops	Aug-21	\$ 40,600
90	FP.10072131	10072131-David City Capacity Loop	Reliability	Loops	Aug-21	\$ 121,000
91	FP.10075287	10075287 - Chart Replacements - Scottsbluff	Reliability	Charts	Aug-21	\$ 13,500
92	FP.10075277	10075277 - LSG ERT Upgrade - KEARNEY	Reliability	Meter Install	Aug-21	\$ 2,333,185
93	FP.10075278	10075278 - LSG ERT Upgrade - HOLDREGE	Reliability	Meter Install	Aug-21	\$ 1,458,867
						\$10,726,942

5

6 **Q. WOULD YOU BE WILLING TO REVIEW THESE PROJECTS AGAIN FOR**
7 **APPROVAL IF ADEQUATE CRITERIA IS PROVIDED?**

8 A. Yes, I would.

9

VIII. CONCLUSION

10 **Q. WHAT DO YOU RECOMMEND REGARDING THE THREE SSIR CATEGORY**
11 **REDEFINITIONS AND THE TWO ADDITIONAL SSIR CATEGORIES?**

12 A. I submit these recommendations:

13 1. Regarding the redefinition of the TOG category, I recommend that a firm definition
14 of shallow pipe be provided to guide auditors of future SSIR years in evaluating
15 whether projects are indeed eligible based on categorical criteria.

⁴ Excerpted from Exhibit JLB-5 (Jason Bennett Direct).

- 1 2. Regarding meter relocations, I recommend identifying with specificity the
2 replacement-only nature of this capital activity.
- 3 3. Regarding PVC Pipe Replacement, I recommend the Company be prepared to
4 provide a defensible analysis for each pipe replacement project considered as
5 having obsolete pipe.
- 6 4. Regarding the DIIP category, I recommend that risk-ranking changes occurring
7 based on development of DIIP have their reasons recorded for audit defense.
- 8 5. Regarding the Reliability category, I recommend the Company develop measurable
9 safety and reliability threshold criteria and descriptions for projects included in this
10 category to facilitate future auditing.
- 11 6. Regarding the 2021 Forecasted Projects, I recommend not approving the 11
12 projects listed in Table 1 of my testimony (the seven projects in the Reliability
13 category and the four projects with the “shallow” designation in their project
14 names) until the ambiguous criteria is adequately defined.

15 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

16 A. Yes.

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NEBRASKA GAS, LLC d/b/a)
BLACK HILLS ENERGY, RAPID CITY,)
SOUTH DAKOTA, SEEKING)
APPROVAL OF A GENERAL RATE)
INCREASE.)

Application No. NG-109


AFFIDAVIT OF WITNESS

STATE OF Massachusetts)
) ss.
COUNTY OF Essex)

I, Charles Fijnvandraat, being first duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony filed in the above-captioned action and I am familiar with its contents, and that the facts set forth therein are true to the best of my knowledge, information, and belief.

Charles A. Fijnvandraat

SUBSCRIBED and sworn to before me this 11 day of September, 2020.

 (SEAL) **MICHAEL MELO**
Notary Public
Commonwealth of Massachusetts
My Commission Expires
September 26, 2025

Michael Melo
Notary Public

My Commission Expires:

September 26, 2025

Professional Experience and Education Charles A. Fijnvandraat

Summary

Electric Transmission and Distribution consultant with proven leadership and experience in asset based condition and risk, business strategy and development, growth initiatives and implementing work process improvements and metrics in a bargaining unit environment.

Highlights include

- 30 years' experience as a management consultant (14 years) and utility manager at NSTAR and Northeast Utilities (16 years)
- Significant T&D emergency management, asset condition, smart grid, regulatory compliance, large capital project prioritization, expense reduction, work force optimization, storm management, and enhancing customer satisfaction
- Working member of the IEEE committees on "Distribution System Design" and "Distribution Networks Task Force". Including contributing member for writing and publication of P1366 Guide for Electric Power Distribution Reliability Indices, and the Underground Network Tutorial
- Former Executive Board Member, Edison Electric Institute (EEI) Transmission/Substation Group
- Published author and speaker at various IEEE, EEI and other industry sponsored forums
- Registered Professional Engineer in Connecticut and Hawaii

Key Qualifications and Selected Professional Experience

Relevant Experience – as a utility consultant

Plant in Service and Capital Spending Prudence Audits

Columbia Gas of Ohio

- Case No. 17-2202-GA-ALT, May 2018–October 2018
- Case No. 19-0438-GA-RDR, April 2019–August 2019

Dominion Energy Ohio

- Case No. 19-468-GA-ALT, October 2019-August 2020

Duke Energy Ohio

- Case No. 19-664-GA-RDR, March 2020-August 2020

Vectren Energy Delivery of Ohio

- Case No. 20-0099-GA-RDR and Case No. 20-0101-GA-RDR, March 2020-September 2020

Distribution Infrastructure Rider Compliance Audits

First Energy

- Case No. 19-1887-EL-RDR, January 2020-August 2020

AEP-Ohio

- Case No. 20-0169-EL-RDR, May 2020-present

- For the Ohio Consumers Counsel intervenor status in “Case No. 15-0362-GA-ALT in the matter of East Ohio Gas Company d/b/a/ Dominion East Ohio for Approval of an Alternative form of Regulation” (accelerated distribution pipe line replacement)
- For a Private Equity Investment firm, due diligence involving work practices and equipment condition for possible investment in a T&D Electric Maintenance firm specializing in substation assets
- For several Electric Utility clients, development of a formalized Root Cause Process for recent T&D failures
- Technical subject matter for the State of Massachusetts Attorney General’s office, under Docket 10-79 NGRID 2009 Distribution Capital Tracker filing, Docket 11-01 Unutil Electric Rate Case asking for increased Vegetation budget levels along with 2008 Storm Cost recovery, Docket 11-02 Unutil Gas Rate Case for Cast Iron Main and Bare Steel accelerated replacement, and Docket 11-03 NGRID December 26, 2010 Storm Performance audit, 11-36 NGRID (Boston Gas) TIRF, 11-60 NGRID 2010 Distribution Capital Tracker Filing. Deliverables included writing information requests, pre-filed testimony, testifying at evidentiary hearings, and supporting initial and final briefs.
- Technical expert for a review of storm restoration best practices and helped develop a storm mobilization model for a major utility operating in both the Mid-Atlantic and the Midwest. The model allows the company to use weather forecasts to more accurately and quantitatively predict damage and resource requirements to mobilize more effectively in the early stages of a storm.
- Technical and Regulatory subject matter expert to support a client to develop organizational changes and enhanced work processes to improve storm emergency response times and measure and manage community and regulatory communication
- Technical subject matter expert for several clients, responsible to implement a decision-analytic model for prioritizing core Transmission/Distribution capital and maintenance expenditures, including load relief, reliability, service connections, relocations, failures, preventive maintenance and information technology
- Served on the Senior Executive team supporting the Long Island Power Authority’s Management Outsourcing Agreement (MSA) with KeySpan Energy (annual capital budget of \$299 million). Deliverables include defining systems and performance metrics to optimize and measure expense and capital investment rates of return and ensure compliance to contractual agreements.
- Transmission/Distribution Operations subject matter expert on the team that was tasked with reviewing a multi-state utility accounting practices for compliance to GAAP and FERC regulations. Led teams that created programs and linked scorecards to define and manage business compliance risk

Relevant Experience – as a utility manager

- Defined and staffed a new Substation Performance and Reliability department. Created and sponsored cross organizational performance goals and scorecards
- Led cross organization teams to define, measure and implement, targeted 4kV substation expense and prioritized capital investments, resulting in stepwise improvements in 4kV substation performance
- Key sponsor and team leader responsible for leading cross organizational teams to define and implement the Substation long range reliability plan. Deliverables include top down analysis of historical expense and capital investments in the context of cost, performance and best in class practices,

- Served as the Division Operations Manager responsible for overall substation performance and reliability, supporting the Overhead and Transmission construction plan and regional wide environmental compliance

Publications and Presentations

- 2015 ENSC (March 2015), Tempe AZ – presentation “Should you expand, shrink or retire your Network?”
- 2014 ENSC in Indianapolis IN – presentation “Best practices in Underground Network Operations and Design”
- 2011 ENSC in Savannah GA – presentation “How to survive a Regulatory Underground Network Get Well Program”
- “Achieving Customer Satisfaction with Outage Communication – Getting Your Estimated Time of Restoration Right” , 6th Annual Emergency Preparedness and Service Restoration Conference, Hosted by O’Neill Management Consulting, Memphis TN, March 2011
- “Underground Network Tutorial”, Pre-conference workshop at the IEEE T&D conference Calgary, October 2009 and New Orleans, April 2010
- “Life Cycle Costs of High Pressure Fluid Filled (HPFF) Transmission U.G. Cable at NSTAR Electric”, EEI T&D Conference April 2008
- “Asset Management – Spending Prioritization for the T&D system”, Pre-conference workshop at the T&D World Conference, Indianapolis IN., May 2004
- “Risk and Return on Investment at LIPA”, EPRI Asset Management Conference, June 2003, co-presented with LIPA.
- “LIPA Advances to the Next Level”, Transmission & Distribution World Magazine, March 2002, co-authored with LIPA and KeySpan.
- “T&D Outsourcing Issues at Long Island Power Authority”, T&D World Magazine Outsourcing Conference, December 2001, co-presented with LIPA.
- “Taking Utility Maintenance to the Next Level”, EPRI Substation Diagnostics Conference, February 2001, co-presented with LIPA.

Professional Experience

NSTAR

Manager Substation Performance & Reliability; and Manager Distribution Underground Network, Engineering Projects (2006-2010)

Navigant Consulting, Inc.

Management Consultant (1999-2005)

Northeast Utilities – (WMECO)

Springfield District Manager for Substations and Equipment; Engineer, in Electric Operations, Distribution Planning, and Demand Side Management (1986-1998)

Professional Activities

- Professional Engineer in CT & HI
- Working member of IEEE groups on Distribution System Design and on Distribution Networks
- Edison Electric Institute (EEI) –Executive Board Member Transmission/Substation Group

- Papers presented at conferences

Education

MBA, Western New England

BSEE, Electrical Engineering, University of Hartford