

STATE OF NEW JERSEY  
BOARD OF PUBLIC UTILITIES

I/M/O THE PETITION OF NEW ) BPU Docket No. GO15040403  
JERSEY NATURAL GAS COMPANY )  
FOR A DETERMINATION )  
CONCERNING THE SOUTHERN )  
RELIABILITY LINK PURSUANT TO )  
N.J.S.A. 40:55D-19 AND 48:9-25.4 )  
)

---

DIRECT TESTIMONY OF EDWARD A. McGEE  
ON BEHALF OF THE  
DIVISION OF RATE COUNSEL

---

STEFANIE A. BRAND, ESQ.  
DIRECTOR, DIVISION OF RATE COUNSEL

DIVISION OF RATE COUNSEL  
140 East Front Street-4<sup>th</sup> Floor  
P. O. Box 003  
Trenton, New Jersey 08625  
Phone: 609-984-1460  
Email: [niratepayer@rpa.state.nj.us](mailto:niratepayer@rpa.state.nj.us)

Dated: October 23, 2015

## TABLE OF CONTENTS

I.	Introduction .....	1
II.	Summary of Recommendations.....	2
III.	Overview of Proposed Southern Reliability Link .....	3
IV.	Company’s Proposed Size and Estimated Cost of SRL Pipeline .....	4
V.	Analysis of Company’s Proposed Size and Estimated Cost of SRL Pipeline.....	5
VI.	“Used and Useful” Principle for Allocation of Size and Cost.....	8
VII.	Estimate of Size of Allocated Costs .....	8
VIII.	Conclusions and Recommendations .....	10
	Attachment I - Credentials of Edward A. McGee	
	Table of Schedules – EAM	

1 **DIRECT TESTIMONY OF**

2 **EDWARD A. McGEE**

3 **ON BEHALF OF THE**

4 **NEW JERSEY DIVISION OF RATE COUNSEL**

5 **BPU DOCKET No. G015040403**

6 **I. Introduction**

7 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

8 A. My name is Edward A. McGee. My business address is P.O. Box #1659, Bethany Beach,  
9 DE. I am Principal Consultant of McGee Consulting, LLC, and I am currently working as an  
10 Engineering Associate with the Acadian Consulting Group (“ACG”). ACG is a research and  
11 consulting firm that specializes in the analysis of regulatory, economic, financial, accounting,  
12 statistical, and public policy issues associated with regulated and energy industries. ACG is a  
13 Louisiana-registered Limited Liability Company, formed in 1995, and is located at 5800 One  
14 Perkins Place, Suite 5-F, Baton Rouge, Louisiana.

15 **Q. DO YOU HOLD ANY ACADEMIC DEGREES?**

16 A. Yes. I was graduated from the University of Notre Dame with Bachelor and Master  
17 Degrees in Chemical Engineering. I was also graduated from the University of Chicago with a  
18 Master’s Degree in Business Administration (“MBA”). Attachment 1 provides my academic  
19 vita that includes a listing of my experience as a gas practice consultant and related positions in  
20 the energy industry.

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

22 A. I have been retained by the New Jersey Division of Rate Counsel (“Rate Counsel”) to  
23 provide an expert opinion to the Board of Public Utilities (“BPU” or “Board”) on management

1 and engineering issues associated with the Amended Southern Reliability Link (“SRL”) proposal  
2 by New Jersey Natural Gas Company filed on June 5, 2015.

3 **Q. HAVE YOU PREPARED ANY EXHIBITS IN SUPPORT OF YOUR**  
4 **RECOMMENDATIONS?**

5 A. Yes. I have prepared three exhibits, Schedules EAM-1 through EAM-3, in support of my  
6 direct testimony that were prepared by me or under my direct supervision.

7 **Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?**

8 A. In addition to this Introductory section, my testimony is organized into the following  
9 sections:

- 10 • Section II. Summary of Recommendations
- 11 • Section III. Overview of Proposed Southern Reliability Link Program
- 12 • Section IV. Company’s Proposed Size and Estimated Cost of SRL Pipeline
- 13 • Section V. Analysis of Proposed Size and Estimated Cost of SRL Pipeline
- 14 • Section VI. “Used and Useful” Principle for Allocation of Size and Cost
- 15 • Section VII. Estimate of Size of Allocated Costs
- 16 • Section VIII. Conclusions and Recommendations

17 **II. Summary of Recommendations**

18 **Q. WOULD YOU PLEASE SUMMARIZE YOUR PRIMARY RECOMMENDATION**  
19 **REGARDING THE PROPOSED SOUTHERN RELIABILITY LINK?**

20 A. My primary recommendation is that only a portion of the cost of the proposed line should  
21 be borne by ratepayers. The proposed line has been oversized for the current Firm Transportation  
22 (FT) contract (precedent agreement) that was negotiated with the Interstate Pipeline which would  
23 transport the gas to the Southern Reliability Link. The entire amount of natural gas that is

1 permitted to be transported through the current contract could be supplied to NJNG's system  
2 through a smaller-diameter line. Therefore, only the cost of a smaller-diameter line should be  
3 borne by the ratepayers.

4 **III. Overview of Proposed Southern Reliability Link**

5 **Q. PLEASE DESCRIBE THE COMPANY'S SRL PROPOSAL.**

6 A. Under the proposal, New Jersey Natural Gas Company requests that the New Jersey  
7 Board of Public Utilities grant approval to install and operate approximately 30 miles of 30-  
8 inch-diameter transmission pipeline that will be constructed in Central New Jersey.<sup>1</sup> The line  
9 will be constructed of steel. It will be cathodically protected and all joints will be welded and  
10 tested non-destructively at a minimum of 1,500 psig of hydrostatic test pressure for 24 hours.  
11 The Maximum Allowable Operating Pressure (MAOP) of this pipeline will be rated at 722 psig,  
12 an equivalent MAOP to that of NJNG's existing transmission system.<sup>2</sup> It is designed  
13 for a Class 4 Location (capable of operating in the highest housing density) and will be able to  
14 accommodate future in-line inspection ("ILI") devices.<sup>3</sup>

15 **Q. WHAT IS THE PURPOSE OF THE COMPANY'S PROPOSED SOUTHERN**  
16 **RELIABILITY LINK PROGRAM?**

17 A. The purpose of the pipeline is to bring additional gas to NJNG's transmission system near  
18 its southern end. The line is designed to bring gas from an Interstate Pipeline in the Township of  
19 Chesterfield in Burlington County on the western side of New Jersey to the Township of  
20 Manchester in Ocean County in Eastern New Jersey where it would join the Company's existing  
21 transmission system. The Company justifies this investment based on its belief that it will

---

<sup>1</sup> Company Amended Petition, Sections 12, 13.

<sup>2</sup> Company Original Petition, Section 12.

<sup>3</sup> Company Amended Petition, Sections 12, 13.

1 improve the reliability of gas supplies in the southern portion of its system (Ocean, Burlington,  
2 and Monmouth Counties). The southern portion of its system is currently supplied from interstate  
3 pipelines to the north of its system where supplies to its southern customers must first travel  
4 through much of NJNG's transmission system. The Company is seeking to improve the  
5 reliability of its gas distribution system by having an alternate supply point for its southern  
6 customers in case of potential interruptions of supply from its northern receipt points as well as  
7 potential emergency restrictions in its transmission system anywhere north of these southern  
8 customers.

9 **IV. Company's Proposed Size and Estimated Cost of SRL Pipeline**

10 **Q. PLEASE DESCRIBE IN MORE DETAIL THE SIZE OF THE COMPANY'S**  
11 **PROPOSED SRL PIPELINE.**

12 A. The Company proposes to construct a nominal 30-inch-diameter pipeline (the actual  
13 inside diameter of a nominal 30-inch pipe is 29 inches).<sup>4</sup> The proposed wall thickness is one-  
14 half inch on both sides of the annulus, giving an outside diameter of 30 inches for the line.

15 **Q. PLEASE DESCRIBE THE COST ESTIMATES FOR THE COMPANY'S**  
16 **PROPOSED SRL PIPELINE.**

17 A. The Company's most recently (2014) approved SRL budget totals \$147.6 Million.<sup>5</sup> More  
18 recently the Company has stated, "A general estimate was developed using comparisons of  
19 recent 20-inch and 24-inch projects. The costs of those projects were then prorated for 30-inch.  
20 Based on our prior experience an initial budget estimate for the project was determined to be in

---

<sup>4</sup> Company Original Petition, Exhibit C.

<sup>5</sup> Company Response to RCR-ENG-15c.

1 the range of \$130 to \$160 Million. A new estimate is being developed by our engineering  
2 consultant, but it has not been completed at this time.”<sup>6</sup>

3 **Q. DO YOU FEEL THE COMPANY’S RESPONSES CONCERNING THE**  
4 **ESTIMATED COST OF THE SRL PIPELINE ARE SATISFACTORY?**

5 A. No. I’m not sure how the Company’s regulators can be expected to approve this project  
6 and authorize the construction and operation of the SRL pipeline without having a more detailed,  
7 up-to-date, and preferably independent estimate of its cost.

8 **V. Analysis of Company’s Proposed Size and Estimated Cost of SRL Pipeline**

9 **Q. IS A 30-INCH-DIAMETER PIPELINE REQUIRED FOR THE SRL LINE?**

10 A. No. The Company’s calculations indicate that a smaller-diameter pipeline would be  
11 sufficient.<sup>7</sup> Specifically, a 24-inch-diameter line would be able to move the maximum amount  
12 of gas permitted by the FT contract with the connecting Interstate Pipeline, and deliver it to the  
13 Company’s existing transmission system at the planned juncture at a sufficiently high pressure.  
14 As shown in Schedule EAM-1, the expected pressure at the delivery juncture would be 647 psia  
15 for a 24-inch SRL line flowing the Company’s maximum FT contract gas volume of 180,000  
16 Dth/Day.

17 The Company’s existing transmission system is designed and built for peak weather  
18 design parameters.<sup>8</sup> The system pressure at its junction with the proposed SRL pipeline varies  
19 with ambient temperature and load conditions. The pressure varies between 497 psia and a  
20 maximum pressure of 618 psia on key design days. The 24-inch SRL line’s delivery pressure of  
21 647 psia would exceed the existing pressure at that juncture by a minimum of 29 psia on any day

---

<sup>6</sup> Company Response to RCR-ENG-7b.

<sup>7</sup> Company Responses to RCR-ENG-21, 22.

<sup>8</sup> Company Response to Discovery RCR-ENG-21c.

1 of the year as shown in Schedule EAM-1, verifying that all the gas transported through the SRL  
2 pipeline (up to the maximum FT quantity of 180,000 Dth/Day) would successfully flow into the  
3 Company's existing transmission system.

4 **Q. IF A SMALLER LINE WOULD BE SUFFICIENT, WHY DID THE COMPANY**  
5 **SELECT A LARGER-DIAMETER LINE?**

6 A. The Company has expressed a number of reasons for their selection of a 30-inch-diameter  
7 SRL pipeline:

8 1. The Company's first reason is: "The diameter of the SRL was selected by performing  
9 iterative flow modeling of our existing system with various demand and supply  
10 configurations under design day conditions with the SRL in place."<sup>9</sup>

11 2. The Company's second reason is: "This diameter also is equal to NJNG's existing  
12 backbone system beginning at our Texas Eastern supply in Middlesex County and  
13 running into northern Ocean County, as well as other existing segments that have  
14 been more recently installed."<sup>10</sup>

15 3. The Company's third reason is: "This diameter will also allow greater capacity to be  
16 delivered into NJNG's system from the new Transco supply in the future."<sup>11</sup>

17 **Q. IS THE COMPANY'S FIRST REASON VALID THAT A 30-INCH-DIAMETER**  
18 **PIPELINE IS REQUIRED FOR THE SRL LINE DUE TO THE MODELING OF**  
19 **DESIGN-DAY CONDITIONS?**

20 A. No. The Company's response to discovery indicates that its transmission system has a  
21 Design-Day pressure of only 497 psia at the point where the SRL line will join it in Manchester,

---

<sup>9</sup> Company Response to Discovery RCR-ENG-19a.

<sup>10</sup> Company Response to Discovery RCR-ENG-21a.

<sup>11</sup> Company Response to Discovery RCR-ENG-21a.



1 New Jersey. The Company has also indicated that a 24-inch SRL would provide a pressure of  
2 647 psia, which is more than sufficient to deliver the entire 180,000 Dth/Day of gas required.

3 **Q. IS THE COMPANY'S SECOND REASON VALID THAT A 30-INCH-**  
4 **DIAMETER PIPELINE IS JUSTIFIED SINCE THIS DIAMETER IS EQUAL TO**  
5 **PORTIONS OF ITS EXISTING BACKBONE SYSTEM?**

6 A. No. Pipelines should be sized to handle the flows that they will transport. If a Company  
7 has other objectives, such as standardization of size, it is their prerogative to build the size they  
8 desire, but ratepayers should only have to pay for the minimum size pipeline that is required to  
9 serve their interests. Oversizing a pipeline is not in the interests of ratepayers.

10 **Q. IS THE COMPANY'S THIRD REASON VALID THAT A 30-INCH-DIAMETER**  
11 **PIPELINE WILL ALLOW GREATER CAPACITY TO BE DELIVERED INTO NJNG'S**  
12 **SYSTEM FROM THE NEW TRANSCO SUPPLY IN THE FUTURE?**

13 A. NJRC disagrees and reiterates that ratepayers should not bear the entire cost of the line at  
14 this time as a smaller size line would be satisfactory. As the Company has stated in its Original  
15 Petition, "The Southern Reliability Link Project was developed as a redundant supply line to an  
16 existing system in which additional growth of the system was not taken into account during its  
17 design."<sup>12</sup> Therefore, future supplies and growth cannot be part of the decision to size and  
18 allocate costs of the proposed pipeline in the most economical manner for ratepayers.

---

<sup>12</sup> Company Original Petition Section 14.

1 VI. “Used and Useful” Principle for Allocation of Size and Cost

2 Q. WHAT ACCOUNTING AND REGULATION PRINCIPLE JUSTIFIES NON-  
3 ALLOWANCE OF THE ENTIRE PIPELINE COST IF A SMALLER, LESS-  
4 EXPENSIVE PIPELINE WOULD DELIVER THE SAME AMOUNT OF GAS?

5 A. The principle of “Used and Useful” applies to this case, since only a portion of the larger  
6 pipeline would be effectively used to deliver gas. A smaller, less-costly line that can deliver the  
7 same amount of gas to current ratepayers would be better used. Typically, Rate Base excludes  
8 plant held for future use.<sup>13</sup>

9 Q. ARE YOU SUGGESTING THAT THE COMPANY SHOULD INSTALL A 24-  
10 INCH DIAMETER LINE AT THIS TIME INSTEAD OF ITS PLANNED 30-INCH-  
11 DIAMETER PIPELINE?

12 A. No. While the Company should choose the size of the line, ratepayers should not be  
13 expected to pay the cost of an oversized line. We are not commenting on the size to be installed;  
14 only on the size that should be costed for fair rate treatment.

15 VII. Estimate of Size of Allocated Costs

16 Q. IS IT POSSIBLE TO ADJUST THE CONSTRUCTION COST OF THE SRL LINE  
17 FOR A DIFFERENT DIAMETER?

18 A. Yes. There are costing techniques to estimate the variance in installation costs of a  
19 pipeline for a range of sizes close to its actual size. One common technique is based on the  
20 principle that pipeline installation costs are constant when they are measured as cost per inch-  
21 mile. As shown in Schedule EAM-2, this relationship affords a method of adjusting estimated

---

<sup>13</sup> <http://www.naruc.org/international/Documents/Tariff%20Development%201--Basic%20Ratemaking%20Process%20-%20final%20draft%20ver%201%200.pdf>

1 installed costs for other pipe diameters. Specifically, a range of estimated costs for the proposed  
2 30-inch line are adjusted to derive costs for a 24-inch pipeline.

3 **Q. ARE THE COSTS SHOWN IN SCHEDULE EAM-2 FOR THE PROPOSED SRL**  
4 **PIPELINE IN LINE WITH OTHER NEW JERSEY PIPELINE COSTS IN YOUR**  
5 **EXPERIENCE?**

6 A. As recently as 2012, there was an estimate for a proposed 22-mile, 24-inch transmission  
7 line in Southern New Jersey, not far from the location of the SRL line.<sup>14</sup> The cost was estimated  
8 at \$90.984 Million, which was equivalent to \$4.06 Million per mile or \$169 Thousand per inch-  
9 mile. Factoring up these costs to \$2016 (at 3 percent per year) is equivalent to a current cost of  
10 \$4.57 Million per mile and \$190 Thousand per inch-mile. The construction cost of \$4.57 Million  
11 per mile is for a 24-inch pipeline; therefore, the estimated cost in this case would be raised (by  
12 (30/24)) to an equivalent \$5.71 Million per mile for a 30-inch pipeline.

13 Comparing these costs to the costs shown in Figure EAM-2, indicates a close comparison  
14 to the estimated SRL construction cost (range of \$4.7 to \$6.0 Million per mile and range of \$156  
15 to \$200 Thousand per inch-mile). These cost ranges correspond to estimates of \$140 to \$180  
16 Million, so if the estimated cost for the SRL pipeline stays within this range, it would be  
17 comparable to the cost of the line in Southern New Jersey.

18 **Q. CAN YOU SHOW THE RECOMMENDED ALLOCATION OF**  
19 **CONSTRUCTION COST FOR THE PROPOSED 30-INCH SRL PIPELINE, SHOWING**  
20 **THE PROPORTION OF THE COST OF THE LINE THAT SHOULD BE BORNE BY**  
21 **RATEPAYERS AND WHAT PORTION SHOULD BE BORNE BY THE COMPANY?**

---

<sup>14</sup> In the Matter of the Petition of South Jersey Gas Company for Authorization to Construct a 24" Pipeline Through Maurice River Township in Cumberland County, the City of Estell Manor in Atlantic County, and Upper Township in Cape May County New Jersey, Docket Number GO13030202.

1 A. Yes. Schedule EAM-3 shows the recommended allocation of costs between the Company  
2 and the ratepayers. Ratepayers should be allocated 80 percent of the cost of the 30-inch line –  
3 equivalent to the cost of a 24-inch pipeline that can carry the total amount of gas. The  
4 Company’s share is the difference between the cost of a 30-inch line and a 24-inch line, or 20  
5 percent of the cost of the 30-inch line.

6 **VIII. Conclusions and Recommendations**

7 **Q. WHAT ARE YOUR MAJOR CONCLUSIONS AND RECOMMENDATIONS**  
8 **REGARDING THE COMPANY’S PLAN TO INSTALL A 30-INCH-DIAMETER SRL**  
9 **PIPELINE?**

10 A. My primary recommendation is that only a portion of the cost of the proposed line should  
11 be borne by ratepayers. The proposed line has been oversized for the current Firm Transportation  
12 (FT) contract (precedent agreement) that was negotiated with the Interstate Pipeline that would  
13 transport the gas to the Southern Reliability Link. The entire amount of natural gas that is  
14 permitted to be transported through the current contract could be supplied to NJNG’s system  
15 through a smaller-diameter line. Therefore, only the cost of the smaller-diameter line should be  
16 borne by ratepayers.

17 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

18 A. Yes it does. However, I reserve the right to supplement my testimony if any updated or  
19 additional information becomes available during the course of this proceeding.

**ATTACHMENT I**  
**Credentials of Edward A. McGee**

**CREDENTIALS OF EDWARD A. McGEE**

**PROFESSIONAL CAREER**

2012 – Present      **Acadian Consulting Group**  
Engineering Associate

As Engineering Associate for Acadian Consulting Group, I am responsible for assisting in studies performed for Public Utility Commissions.

1999 – Present      **McGee Consulting**  
Principal Consultant and Engineer – Energy Industry

As Principal Consultant and Engineer, I am responsible for assisting larger consulting firms in their studies performed for utility companies and Public Utility Commissions.

1985 - 1999      **Stone & Webster Management Consultants, Inc.**  
Vice President/Director

As Vice President of Stone & Webster Management Consultants, I was responsible for consulting studies in the Gas Practice area, where I performed consulting analyses in the gas planning and gas operations areas for gas utility companies and public utility commissions.

1982 - 1985      **Stone & Webster Engineering Corporation**  
Business Development Manager

As Business Development Manager at Stone & Webster Engineering Corp., I was responsible for the construction of investment models for feasibility studies on large-scale chemical and refining complexes.

1982 & earlier      **W. R. Grace & Co.**  
Director of Energy Resources  
Manager of Chemical Development

As Director of Energy Resources for W. R. Grace, I advised the Chief Operating Officer on corporate energy consumption and production. I also assisted operating divisions in securing long-term energy resources.

As Manager of Chemical Development at W. R. Grace, I analyzed potential acquisition targets in specialty chemical and high technology fields, developing corporate strategies for selected expansions.

1 **AMOCO Oil**

2 Supervisor of Technical Computer Programming  
3 Internal Operations Research Consultant  
4

5 In a variety of engineering and computer modeling capacities at AMOCO Oil directed a staff  
6 of professionals in the development of technical programs in the refining,  
7 distribution and marketing areas.  
8

9 **EDUCATION**

10 **University of Chicago**, Master of Business Administration, Quantitative Analysis and  
11 Computers  
12

13 **University of Notre Dame**, Master of Science in Chemical Engineering  
14

15 **University of Notre Dame**, Bachelor of Science in Chemical Engineering  
16  
17

18 **LICENSES & CERTIFICATES**

19  
20 Licensed Professional Engineer (License Currently Retired) -- State of Indiana  
21 U.S. Patent Holder -- Refinery Treating Process  
22

23 **PROFESSIONAL AFFILIATIONS**

24  
25 American Institute of Chemical Engineers  
26 The Institute of Management Sciences  
27

28 **SAMPLE PUBLICATIONS AND PAPERS**

29  
30 "Using a Personal Computer as a Gas Supply Planning Tool." Gas Industries lead article.  
31

32 "Personal Computers and the Natural Gas Industry." Public Utilities Fortnightly.  
33

34 "Personal Computer-Based Long-Range Planning for Natural Gas Development and  
35 Supply Management." Presented at the International Gas Union's 18th World Gas  
36 Conference, Berlin, Germany.  
37

38 "Role of Optimization Models in Dispatching Gas Supplies." Presented at AGA  
39 Distribution/Transmission Conference, Toronto, Canada.  
40

41 "Experience With Gas Supply Optimization Models at Inland Natural Gas." Presented  
42 at IGT symposium on Personal Computers in the Gas Industry, Chicago, Illinois.  
43

## **TABLE OF SCHEDULES**



## Table of Schedules

Witness: McGee  
GO15040403  
Page 1 of 1

Title	Exhibit
Comparison of Pressure Profile of 24-Inch SRL and System Pressures at Junction	Schedule EAM-1
Adjustment of Construction Cost of SRL Pipeline to Other Diameters	Schedule EAM-2
Allocation of Construction Costs to Ratepayers and to the Company	Schedule EAM-3

## Comparison of Pressure Profile of 24-Inch SRL and System Pressures at Junction

Witness: McGee  
 GO15040403  
 Schedule EAM-1  
 Page 1 of 2

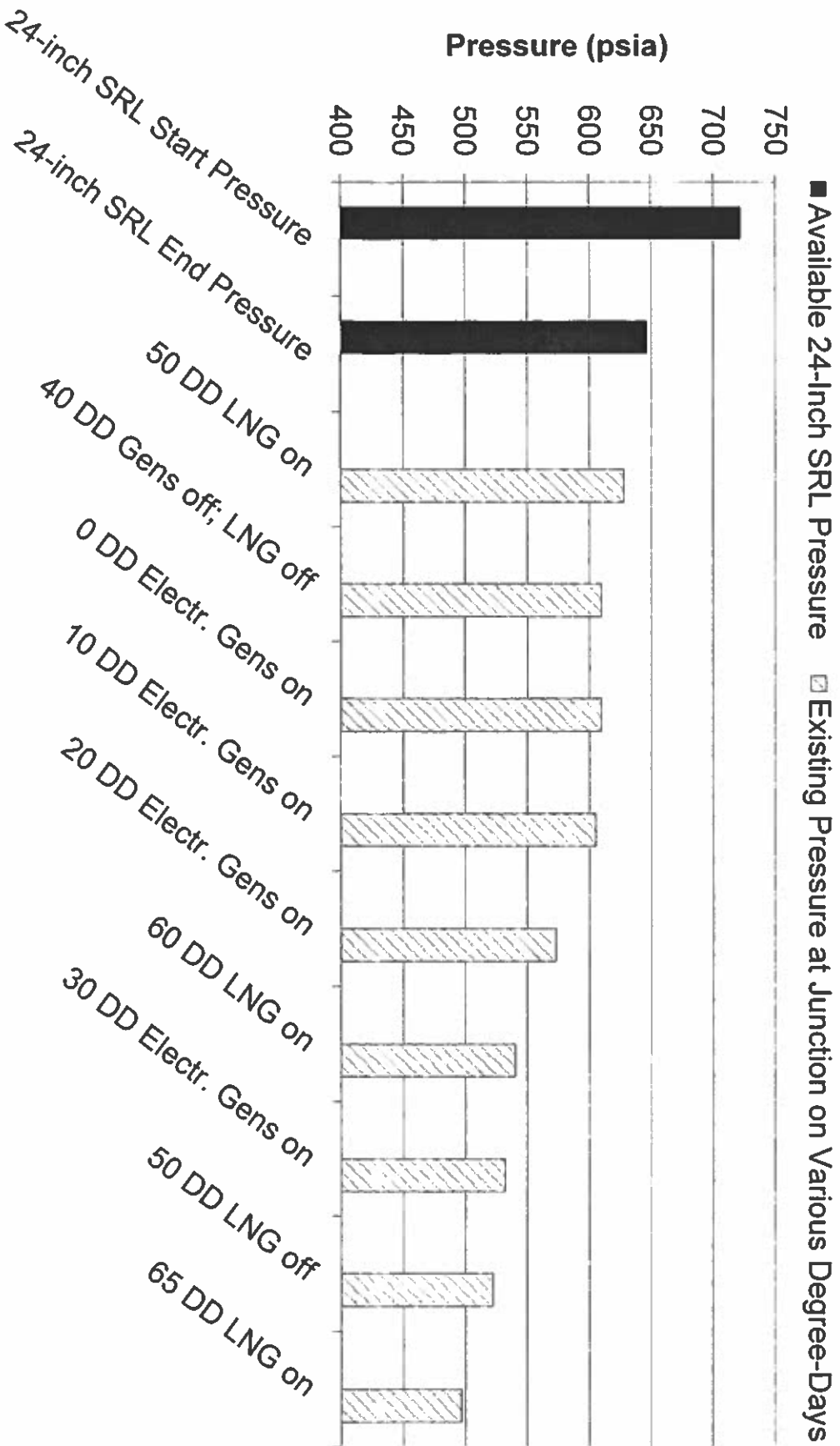
Pipe	Available 24-Inch SRL Pressure (psia) <sup>1</sup>	Existing Pressure at Junction on Various Degree-Days (psia)
24-inch SRL Start Pressure	722	
24-inch SRL End Pressure	647	
50 DD LNG on		628
40 DD Gens off, LNG off		610
0 DD Electr. Gens on		610
10 DD Electr. Gens on		605
20 DD Electr. Gens on		573
60 DD LNG on		540
30 DD Electr. Gens on		532
50 DD LNG off		522
65 DD LNG on		497

<sup>1</sup> psia = pressure in pounds per square inch, absolute.

Source: Company's response to RCR-ENG-21 and RCR-ENG-22.

# Comparison of Pressure Profile of 24-Inch SRL and System Pressures at Junction

Witness: McGee  
 GO15040403  
 Schedule EAM-1  
 Page 2 of 2



Source: Company's response to RCR-ENG-21 and RCR-ENG-22.

# Adjustment of Construction Cost of SRL Pipeline to Other Diameters

Witness: McGee  
GO15040403  
Schedule EAM-2  
Page 1 of 1

	Pipe Diameter (Inches)	Length of Line (Miles)	Company Estimated Construction Cost of 30-Inch SRL Line (\$Millions) <sup>1</sup>	Equivalent Cost per Mile (\$Millions)	Equivalent Cost per Inch-Mile (\$Thousands)	Estimated Construction Cost of 24-Inch SRL Line (\$Millions)	
	(A)	(B)	(C)	(D)	(E)	(F)	
				= (C)/(A)	= (C)/(A)/(B)*1,000	= (A)*(B)*(E)/1,000	
<b>1) For \$140M Estimated Cost of 30-Inch SRL Line</b>							
	30	30	\$ 140	\$ 4.7	\$ 155.6	\$ -	
	24	30	\$ -	\$ -	\$ 155.6	\$ 112.0	
<b>2) For \$160M Estimated Cost of 30-Inch SRL Line</b>							
	30	30	\$ 160	\$ 5.3	\$ 177.8	\$ -	
	24	30	\$ -	\$ -	\$ 177.8	\$ 128.0	
<b>3) For \$180M Estimated Cost of 30-Inch SRL Line</b>							
	30	30	\$ 180	\$ 6.0	\$ 200.0	\$ -	
	24	30	\$ -	\$ -	\$ 200.0	\$ 144.0	

<sup>1</sup> Column C represents a range of potential construction costs varying between \$140 Million and \$180 Million which is used to illustrate 24-inch construction costs as a function of the estimated cost of a 30-inch line.

**Allocation of Construction Costs to Ratepayers and to the Company**

Witness: McGee  
 GO15040403  
 Schedule EAM-3  
 Page 1 of 2

	Company Estimated Construction Cost of 30-Inch SRL Line (\$Millions)	Estimated Construction Cost of 24-Inch SRL Line (\$Millions)	Remaining Amount of Construction Cost Allocated to Company (\$Millions)
Range of Construction Costs <sup>1</sup>	\$140	\$112	\$28
	\$160	\$128	\$32
	\$180	\$144	\$36

<sup>1</sup> This column represents a range of potential construction costs varying between \$140 Million and \$180 Million which is used to illustrate the allocation of costs as a function of the estimated cost of a 30-inch line.

# Allocation of Construction Costs to Ratepayers and to the Company

Witness: McGee  
 GO15040403  
 Schedule EAM-3  
 Page 2 of 2

