

January 17, 2019

VIA HAND DELIVERY & ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Docket 4916 - National Grid's Proposed FY 2020 Gas Infrastructure, Safety, and Reliability Plan
Responses to PUC Data Requests – Set 1

Dear Ms. Massaro:

Enclosed please find 10 copies of National Grid's¹ responses to the Rhode Island Public Utilities Commission's (PUC) First Set of Data Requests in the above-referenced matter.

This filing also contains a Motion for Protective Treatment of Confidential Information in accordance with Rule 1.3(H) of the PUC's Rules of Practice and Procedure and R.I. Gen. Laws § 38-2-2(4)(B). National Grid seeks protection from public disclosure of certain confidential and privileged information, which is contained in Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), Attachment PUC 1-1-4(b), Attachment PUC 1-8-1, Attachment PUC 1-8-2, Attachment PUC 1-10-1, and Attachment PUC 1-10-2, and its responses to PUC 1-10 and PUC 1-11. In addition, certain of the information in response to Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), and Attachment PUC 1-1-4(b) contain Critical Energy Infrastructure Information (CEII). In compliance with Rule 1.3(H), National Grid has provided the PUC with one complete, unredacted copy of the confidential materials in a sealed envelope marked "**Contains Privileged and Confidential Materials – Do Not Release,**" and has included redacted copies of the materials for the public filing.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,



Robert J. Humm

Enclosures

cc: Christy Hetherington, Esq.
Al Mancini, Division
John Bell, Division
Rod Walker, Division

¹ The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



Joanne M. Scanlon

January 17, 2019

Date

Docket No. 4916 - National Grid's FY 2020 Gas Infrastructure, Safety and Reliability (ISR) Plan - Service List 1/8/2019

Name/Address	E-mail Distribution	Phone
Robert Humm, Esq. National Grid 280 Melrose St. Providence, RI 02907	robert.humm@nationalgrid.com ;	401-784-7415
	celia.obrien@nationalgrid.com ;	
	Joanne.scanlon@nationalgrid.com ;	
John Currie William Richer Melissa Little Ann Little Theresa Burns Michael Pini	John.currie@nationalgrid.com ;	
	William.richer@nationalgrid.com ;	
	Melissa.Little@nationalgrid.com ;	
	Ann.leary@nationalgrid.com ;	
	Theresa.Burns@nationalgrid.com ;	
	Michael.Pini@nationalgrid.com ;	
Christy Hetherington, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Chetherington@riag.ri.gov ;	401-274-4400
	dmacrae@riag.ri.gov ;	
	MFolcarelli@riag.ri.gov ;	
Al Mancini Division of Public Utilities	Al.mancini@dpuc.ri.gov ;	
	John.bell@dpuc.ri.gov ;	
	John.spirito@dpuc.ri.gov ;	
	Jonathan.Schrag@dpuc.ri.gov ;	
	Ronald.gerwatowski@dpuc.ri.gov ;	
	Kevin.Lynch@dpuc.ri.gov ;	
Rod Walter, CEO/President Rod Walker & Associates	Rwalker@RWalkerConsultancy.com ;	706-244-0894

Office of Energy Resources (OER) Andrew Marcaccio, Esq. Dept. of Administration Division of Legal Services One Capitol Hill, 4 th Floor Providence, RI 02908	Andrew.marcaccio@doa.ri.gov ;	
Christopher Kearns, OER Carrie Gill Nick Ucci	Christopher.Kearns@energy.ri.gov ;	
	Carrie.Gill@energy.ri.gov ;	
	Nicholas.Ucci@energy.ri.gov ;	
File an original & nine (9) copies w/: Luly E. Massaro, Commission Clerk Margaret Hogan, Commission Counsel Public Utilities Commission 89 Jefferson Blvd. Warwick RI 02888	Luly.massaro@puc.ri.gov ;	401-780-2107
	Margaret.hogan@puc.ri.gov ;	
	Cynthia.WilsonFrias@puc.ri.gov ;	
	Sharon.ColbyCamara@puc.ri.gov ;	
	Todd.bianco@puc.ri.gov ;	

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

RHODE ISLAND PUBLIC UTILITIES COMMISSION

Fiscal Year 2020 Gas Infrastructure,
Safety and Reliability Plan

)
)
)
)

Docket No. 4916

**MOTION OF THE NARRAGANSETT ELECTRIC
COMPANY D/B/A NATIONAL GRID FOR PROTECTIVE
TREATMENT OF CONFIDENTIAL INFORMATION**

National Grid¹ hereby requests that the Rhode Island Public Utilities Commission (PUC) grant protection from public disclosure of certain confidential, competitively sensitive, and proprietary information submitted in this proceeding, as permitted by PUC Rule 810-RICR-00-00-1-1.3(H)(3) (Rule 1.3(H)) and R.I. Gen. Laws § 38-2-2(4)(B). National Grid also hereby requests that, pending entry of that finding, the PUC preliminarily grant National Grid's request for confidential treatment pursuant to Rule 1.3(H)(2).

I. BACKGROUND

On December 20, 2018, National Grid submitted its Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan filing in the above-captioned docket. Thereafter, on January 17, 2019, National Grid submitted responses to the PUC's First Set of Data Requests (PUC Set 1). PUC Set 1 includes Data Request PUC 1-1, which seeks copies of all data requests issued by the Division of Public Utilities and Carriers (Division) and answered by National Grid between September 28, 2018 and December 20, 2018. Some of National Grid's responses to the Division's data requests between the requested time period includes confidential and information and/or Critical Energy Infrastructure Information (CEII). National

Grid and the Division have entered into a Confidentiality and Nondisclosure Agreement for the protection of such information. For purposes of the Company's responses to PUC Set 1, the Company is providing both redacted and un-redacted versions of Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), Attachment PUC 1-1-4(b), Attachment PUC 1-8-1, Attachment PUC 1-8-2, Attachment PUC 1-10-1, and Attachment PUC 1-10-2, as well as in the Company's responses to PUC 1-10 and PUC 1-11.

In particular, the Attachment PUC 1-1-1(b) includes the following attachments to the Division's data requests that contain confidential and proprietary information and/or CEII:

- (1) Attachment DIV 1-1-1 and Attachment DIV 1-1-1 (confidential system maps showing take stations, district regulator stations, and distribution facilities, which contains CEII); (2) Attachment DIV 1-2 (National Grid procedure ENG04030 regarding the identification, evaluation, and prioritization of distribution main segments for replacement, which includes the Company's confidential, proprietary risk ranking algorithm used to evaluate pipe segments); and
- (3) Attachment DIV 1-3 (National Grid's confidential 2017 Gas Distribution Integrity Management Plan, which contains CEII).

Attachment PUC 1-1-2(b) includes the following attachment to the Division's data requests that contains confidential information and/or CEII: Attachment DIV 1-10S-1, which is a copy of the confidential version of the Company's Siting Report for the Southern Rhode Island Gas Expansion Project filed with the Rhode Island Energy Facility Siting Board (EFSB). The Siting Report contains CEII and has been submitted to the EFSB with a Motion for Protective Treatment of Confidential Information.

¹ The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

Attachment PUC 1-1-4(b) includes the following responses to the Division's informal requests: (1) National Grid's response to Informal Request No. 1 (listing of addresses of the pressure regulator stations to be replaced and/or abandoned under the FY 2020 Gas ISR Plan, which contains CEII); and (2) National Grid's response to Informal Request No. 2 (listing of the addresses of all take stations in Rhode Island, which contains CEII).

Attachment PUC 1-8-1 and Attachment PUC 1-8-2 provides cost breakdowns for the main installation and material testing work, respectively, for the Southern Rhode Island Project in response to Data Request PUC 1-8. In addition, National Grid's responses to PUC 1-10 and PUC 1-11 include information with respect to bids received by the Company in response to Requests for Proposals (RFPs) for the Southern Rhode Island Project, which the Company is in the process of reviewing. Finally, Attachment PUC 1-10-1 is a copy of the RFP for the main installation work for the Southern Rhode Island Project, and Attachment 1-10-2 is a copy of the detail drawings submitted with the RFP.

Therefore, the Company requests that, pursuant to Rule 1.3(H), the PUC afford confidential treatment to the confidential and proprietary information and/or CEII contained in Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), Attachment PUC 1-1-4(b), Attachment PUC 1-8-1, Attachment PUC 1-8-1, Attachment PUC 1-10-1, and Attachment PUC 1-10-2, and the Company's responses to PUC 1-10 and PUC 1-11.

II. LEGAL STANDARD

Rule 1.3(H) of the PUC's Rules of Practice and Procedure provides that access to public records shall be granted in accordance with the Access to Public Records Act (APRA), R.I. Gen. Laws § 38-2-1, *et seq.* Under APRA, all documents and materials submitted in connection with

the transaction of official business by an agency is deemed to be a “public record,” unless the information contained in such documents and materials falls within one of the exceptions specifically identified in R.I. Gen. Laws § 38-2-2(4). To the extent that information provided to the PUC falls within one of the designated exceptions to the public records law, the PUC has the authority under the terms of APRA to deem such information as confidential and to protect that information from public disclosure.

In that regard, R.I. Gen. Laws § 38-2-2(4)(B) provides that the following types of records shall not be deemed public:

Trade secrets and commercial or financial information obtained from a person, firm, or corporation which is of a privileged or confidential nature.

The Rhode Island Supreme Court has held that this confidential information exemption applies where the disclosure of information would be likely either (1) to impair the government’s ability to obtain necessary information in the future; or (2) to cause substantial harm to the competitive position of the person from whom the information was obtained. *Providence Journal Company v. Convention Center Authority*, 774 A.2d 40 (R.I. 2001).

The first prong of the test is satisfied when information is voluntarily provided to the governmental agency and that information is of a kind that would customarily not be released to the public by the person from whom it was obtained. *Providence Journal*, 774 A.2d at 47.

III. BASIS FOR CONFIDENTIALITY

The information contained in Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), Attachment PUC 1-1-4(b), Attachment PUC 1-8-1, Attachment PUC 1-8-2, Attachment PUC 1-10-1, and Attachment PUC 1-10-2, and the Company’s responses to PUC 1-10 and PUC 1-11

should be protected from public disclosure. The information provided in these attachments and responses is confidential and privileged information of the type that National Grid does not ordinarily make public. With respect to Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), and Attachment 1-1-4(b), the confidential information includes (1) detailed system maps containing CEII, National Grid's proprietary risk ranking algorithm, and Gas Distribution Integrity Management Plan containing CEII provided as part of Attachment PUC 1-1-1(b); (2) the confidential version of National Grid's Siting Report filed with the EFSB, containing CEII, as part of Attachment PUC 1-1-2(b); and (3) the specific addresses of National Grid's pressure regulator stations and take stations, which are deemed CEII, as part of Attachment PUC 1-1-4(b). Public disclosure of the information identified as CEII in Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), and Attachment PUC 1-1-4(b) to PUC Set 1 would negatively impact National Grid's ability to effectively operate to provide safe and reliable service to its customers.

The confidential information provided in Attachment PUC 1-8-1 and Attachment PUC 1-8-2 includes specific cost breakdowns for the estimates for the Southern Rhode Island Project, which could influence third parties' bidding on the project. Attachment PUC 1-10-1 and Attachment PUC 1-10-2 include the RFP for the main installation work for the Southern Rhode Island Project and detail drawings submitted with the RFP, respectively, which are currently being reviewed by the Company during the RFP bidding process under nondisclosure agreements with the bidders. The information provided in the Company's responses to PUC 1-10 and PUC 1-11 includes the number of bidders who have responded to the RFPs, which National Grid is in the process of reviewing and could also influence third parties' bidding on the project. Public disclosure of the information in these attachments and responses could impair

National Grid's ability to obtain advantageous pricing or other terms in the future, thereby causing substantial competitive harm.

Accordingly, National Grid is providing Attachment PUC 1-1-1(b), Attachment PUC 1-1-2(b), Attachment PUC 1-1-4(b), Attachment PUC 1-8-1, Attachment PUC 1-8-2, Attachment PUC 1-10-1, and Attachment 1-10-2, and its responses to PUC 1-10 and PUC 1-11 on a voluntary basis to assist the PUC with its decision-making in this proceeding, but respectfully requests that the PUC provide confidential treatment to the information.

IV. CONCLUSION

For the foregoing reasons, National Grid respectfully requests that the PUC grant its Motion for Protective Treatment of Confidential Information.

Respectfully submitted,

**THE NARRAGANSETT ELECTRIC
COMPANY d/b/a NATIONAL GRID**
By its attorney,

A handwritten signature in blue ink, appearing to be "RH", with a long horizontal flourish extending to the right.

Robert J. Humm, Esq. (#7920)
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-7415
Dated: January 17, 2019

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 2, 2019

PUC 1-1

Request:

Please provide copies of all Data Requests issued by the Division of Public Utilities & Carriers and answered by the Company between September 28, 2018 and December 20, 2018.

Response:

The requested information is provided in the attachments listed below.

Attachment	Description
Attachment PUC 1-1-1(a) (Redacted)	Division Set 1 (Redacted)
Attachment PUC 1-1-1(b) (Confidential)	Division Set 1 (Confidential – contains CEII) ¹
Attachment PUC 1-1-2(a) (Redacted)	Supplemental Response Division 1-10 (Redacted)
Attachment PUC 1-1-2(b) (Confidential)	Supplemental Response Division 1-10 (Confidential – contains CEII) ²
Attachment PUC 1-1-3	Division Set 2
Attachment PUC 1-1-4(a) (Redacted)	Responses to informal requests from Division at meeting held on November 7, 2018 (Redacted)
Attachment PUC 1-1-4(b) (Confidential)	Responses to informal requests from Division at meeting held on November 7, 2018 (Confidential – contains CEII) ³
Attachment PUC 1-1-5	Supplemental response to Division Informal Request No. 3

¹ Contains Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy Attachment PUC 1-1-1(b) (Confidential). The Company is seeking confidential treatment of Attachment PUC 1-1-1(b) (Confidential) in accordance with PUC Rule 810-RICR-00-00-1.3(H).

² Contains CEII. As such, please do not distribute or copy Attachment PUC 1-1-2(b) (Confidential). Please see Attachment PUC 1-1-2(b) (Confidential) for a copy of the Company's Supplemental response and attachment to Division 1-10, which was submitted to the Division of Public Utilities and Carriers (Division) and its consultant on December 5, 2018, and further supplemented on December 14, 2018. The Company is seeking confidential treatment of Attachment PUC 1-1-2(b) (Confidential) in accordance with PUC Rule 810-RICR-00-00-1.3(H).

³ Contains CEII. As such, please do not distribute or copy Attachment PUC 1-1-4(b)(Confidential). The Company is seeking confidential treatment of Attachment PUC 1-1-4(b) (Confidential) in accordance with PUC Rule 810-RICR-00-00-1.3(H).



Robert J. Humm
Senior Counsel

November 16, 2018

VIA HAND DELIVERY

Rhode Island Division of Public Utilities and Carriers
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

**RE: National Grid's Proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan
Responses to Division Data Requests – Set 1**

Dear Ms. Massaro:

Enclosed please find one copy of National Grid's¹ responses to the Division of Public Utilities and Carriers' (Division) First Set of Data Requests in the above-referenced matter.

The enclosed responses are being produced subject to the Confidentiality and Nondisclosure Agreement (NDA) between National Grid and the Division with respect to National Grid's proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan. In particular, the documents provided at Attachment DIV 1-1-1, Attachment DIV 1-1-2, Attachment DIV 1-2, and Attachment DIV 1-3 include confidential and/or proprietary information. Additionally, the system maps showing National Grid's natural gas distribution facilities provided at Attachment DIV 1-1-1 and Attachment DIV 1-1-2, and National Grid's Gas Distribution Integrity Management Plan (DIMP) provided at Attachment DIV 1-3, contain Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy the system maps of the Company's distribution facilities and the DIMP to anyone who has not signed the Certificate of Acknowledgement to the NDA with the express consent of National Grid. Finally, please note that National Grid provided confidential oversized maps of its distribution facilities at Attachment DIV 1-1-1 and Attachment DIV 1-1-2 to the Division's consultant during the November 7, 2018 meeting between National Grid and the Division.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to be "RJH", followed by a horizontal line.

Robert J. Humm

Enclosures

¹ The Narragansett Electric Company d/b/a National Grid.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-1

Request:

Please provide overall system map showing natural gas distribution facilities i.e. tap stations, district regulator stations and mains by material type, pressure and size.

Response:

The attached confidential system maps show take, district regulator stations, and distribution facilities by material, pressure, and size. Attachment DIV 1-1-1 shows the distribution facilities by material view, and Attachment DIV 1-1-2 shows the distribution facilities by pressure view.

Please note that the system maps contain Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy the system maps.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Attachments DIV 1-1-1 and DIV 1-1-2

Redacted

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-2

Request:

Please discuss methodology/details used to identify highest risk "worst offenders" gas infrastructure (below and above ground) for:

- a. repair/replacement;
- b. the overall plan to replace the 1125 miles of cast iron and unprotected bare steel leak prone main and the unprotected steel, cast iron and copper services.

Response:

- a. Please see confidential Attachment DIV 1-2 for National Grid procedure ENG04030 regarding the identification, evaluation, and prioritization of distribution main segments for replacement. ENG04030 includes the Company's confidential, proprietary risk ranking algorithm used to evaluate pipe segments.
- b. Please refer to the table below for the replacement forecast of all leak-prone pipe inventory:

Leak Prone Pipe Replacement																			
		2017 LPP	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
RI	All Programs	1,140	60	55	55	70	70	70	70	70	70	69	69	69	69	69	69	68	68
	Proactive		50	42	42	49	49	53	54	59	59	59	60	61	61	62	62	63	63

The Company does not have a proactive replacement program for unprotected steel, cast iron, or copper services. However, the majority of these services will be replaced as part of the Proactive Main Replacement program.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Attachment DIV 1-2

Redacted

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-3

Request:

Please provide a copy of the Company's latest TIMP/DIMP plans.

Response:

See Attachment DIV 1-3 for the Company's confidential 2017 Gas Distribution Integrity management Plan (DIMP). The Company does not have gas transmission assets in Rhode Island.

Please note that the DIMP contains Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy the DIMP.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Attachment DIV 1-3

Redacted

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-4

Request:

Referencing the 2017 System Integrity Report, Page 3 of 74, please explain the increase in leak receipts, workable leak backlog, steel main corrosion leak rate and service leak rate.

Response:

Leak receipts:

The Company experienced an increase in leak receipts in 2017. The following factors may have contributed to the increase:

- 1) Weather – please refer to Attachment DIV 1-4, the revised 2017 System Integrity Report, at page 5 of 71, which illustrates the correlation between Heating Degree Days (HDD) and leak receipts; and
- 2) In 2017, the ratio of Company detected leaks compared to public odor calls increased from 2016, which reveals that the 2017 leak survey areas were comprised of high leak facilities.

The overall 10 year trend shows that leak receipts have been declining. Please refer to Attachment DIV 1-4 at page 13 of 71 for the 10 year trend line.

Workable leak backlog (Attachment DIV 1-4 at page 16 of 71):

The workable leak backlog increased slightly in 2017 due to the higher volume of Grade 1 leaks, which require remediation when found. This diverted resources from Grade 2 leaks, which need to be remediated within 12 months. Timing of leak receipts was another contributing factor, as 24 percent of the workable leaks were received at the end of the year.

Steel main corrosion leaks (Attachment DIV 1-4 at page 42 of 71):

The Company experienced a slight increase in the corrosion leak rate in 2017 compared to 2016. Also, please see the information provided regarding Leak Receipts above.

Service leak rate (Attachment DIV 1-4 at page 51 of 71):

The Company experienced a slight increase in corrosion leak rate of services in 2017 compared to 2016. Also, please see the information provided regarding Leak Receipts above.

2017 SYSTEM INTEGRITY REPORT



Enterprise Gas Distribution Systems Trend-Based Integrity Analysis

RI

**Gas Distribution Engineering
Gas Asset Management– Gas Process & Engineering**



Saadat Khan (631) 710-3510 Director – Gas Distribution Engineering
Leomary Bader (781) 907-2785 Manager- Gas Distribution Engineering
Aamir Khizar (631) 770-3511 Senior Engineer – Gas Distribution Engineering
Madeline Blaisdell (781) 907-4164 Assoc. Engineer – Gas Distribution Engineering

2017 SYSTEM INTEGRITY REPORT

Overall Regional Gas Distribution Integrity Assessment Summary

2017 SYSTEM INTEGRITY REPORT

Overall Regional Distribution Integrity Assessment Summary

Distribution Engineering has reviewed all of the findings in the annual Trend-Based Distribution System Integrity Analysis (*System Integrity Report*) in accordance with our Distribution Integrity Management Plan (DIMP).

Below is a summary of the individual key integrity measure results for Rhode Island.

NATIONAL GRID	
2017 System Integrity Report Summary	
REGIONS	RI
ITEMS	
• Leak Receipts	↑
• Workable Leak Backlog	↑
• LPP Main and Service Inventories	↓
• Overall Main Leak Rate	↓
• Cast Iron Main Break Rate	↓
• Steel Main Corrosion Leak Rate	↑
• Service Leak Rate	↑

2017 SYSTEM INTEGRITY REPORT

LEAK RECEIPTS, REPAIRS AND BACKLOG BY HDD TREND (Main & Service)

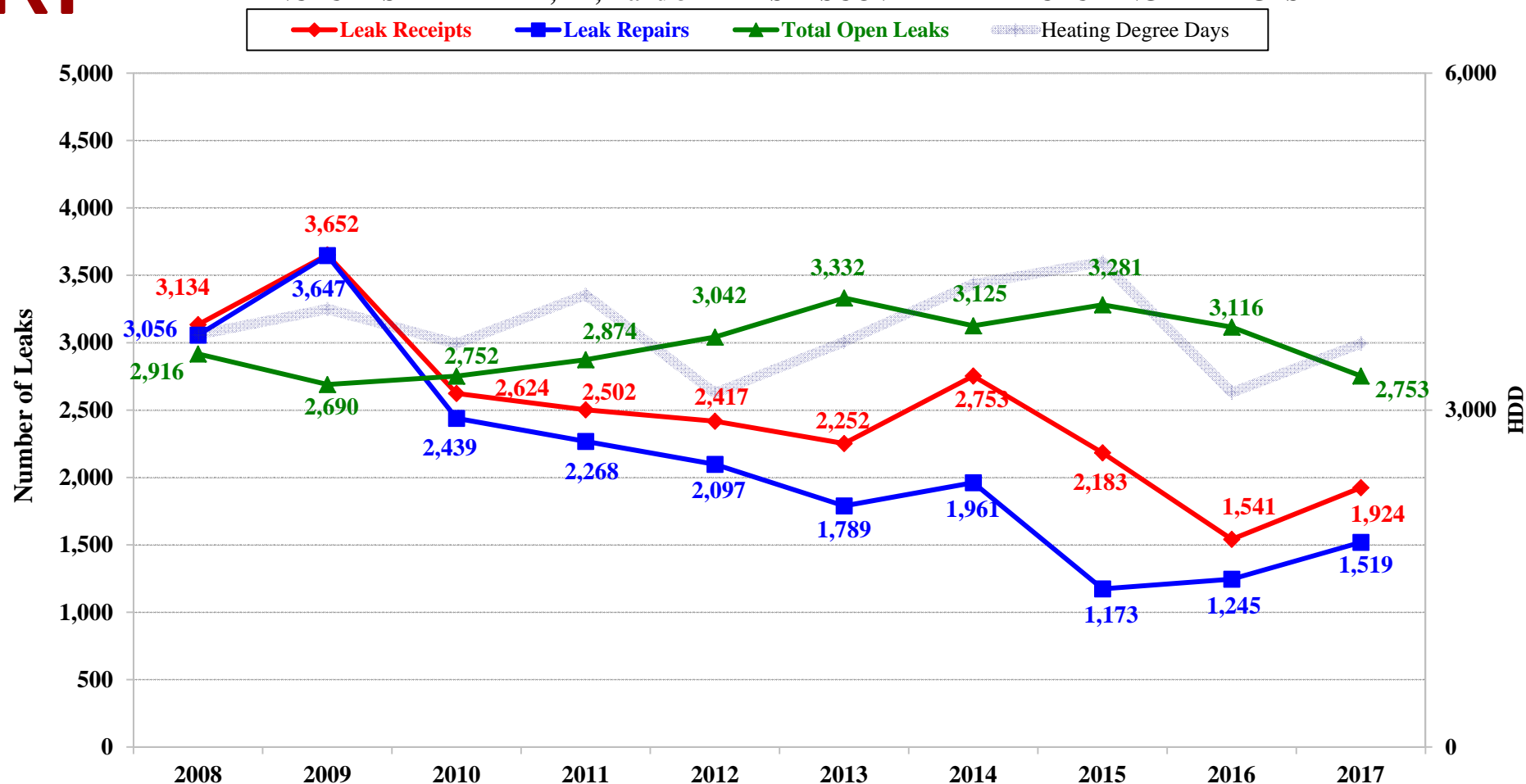
NOTE: Heating Degree Day (HDD)

2017 SYSTEM INTEGRITY REPORT

RI

TOTAL LEAK RECEIPTS, REPAIRS & BACKLOG

INCLUDES ALL TYPE 1, 2A, 2 and 3 LEAKS DISCOVERED - EXCLUDING DAMAGES



Leak Receipts and Repairs and Backlog:

nationalgrid

2017 RI Leak Repairs =  2017 RI Leak Receipts =  2017 RI Leak Backlogs = 

2017 SYSTEM INTEGRITY REPORT

Overall Regional Distribution Integrity Assessment Summary

RI

Rhode Island (RI)

- Leak receipts increased.
- Workable leak backlog increased.
- Leak prone main and service inventories continue to decline steadily.
- Overall main leak rate, Cast iron main break rate, and Steel main corrosion rate decreased.
- Service leak rate increased.

2017 SYSTEM INTEGRITY REPORT

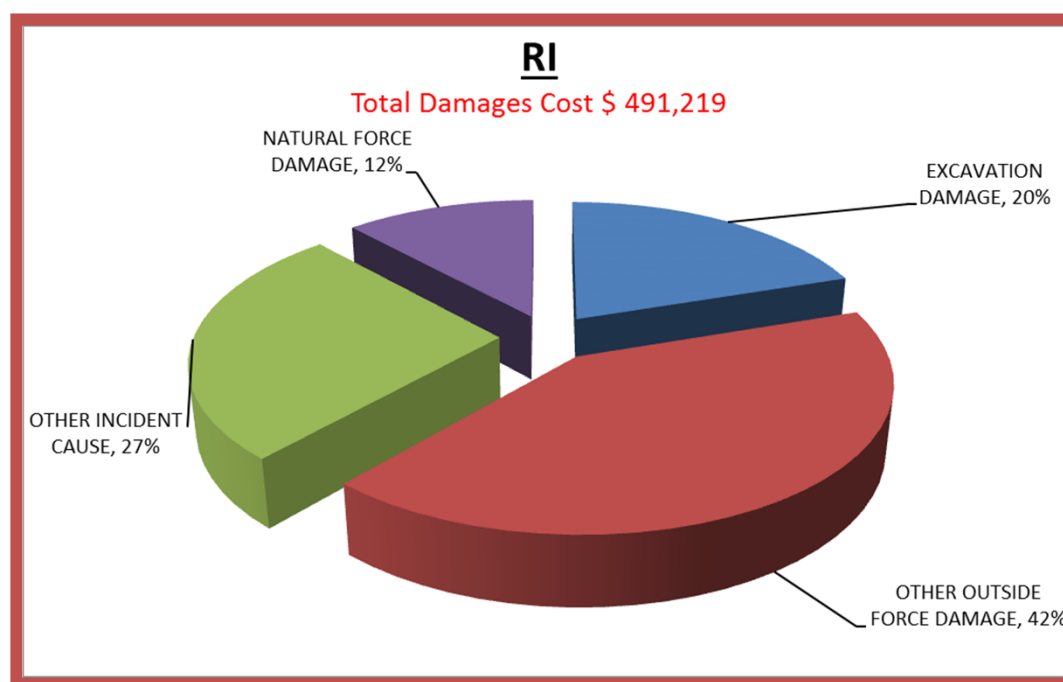
PHMSA Reported Incidents Cost

2017 SYSTEM INTEGRITY REPORT

RI

TOTAL PROPERTY DAMAGES

PHMSA Incident data from 2010 to 2017



2017 SYSTEM INTEGRITY REPORT

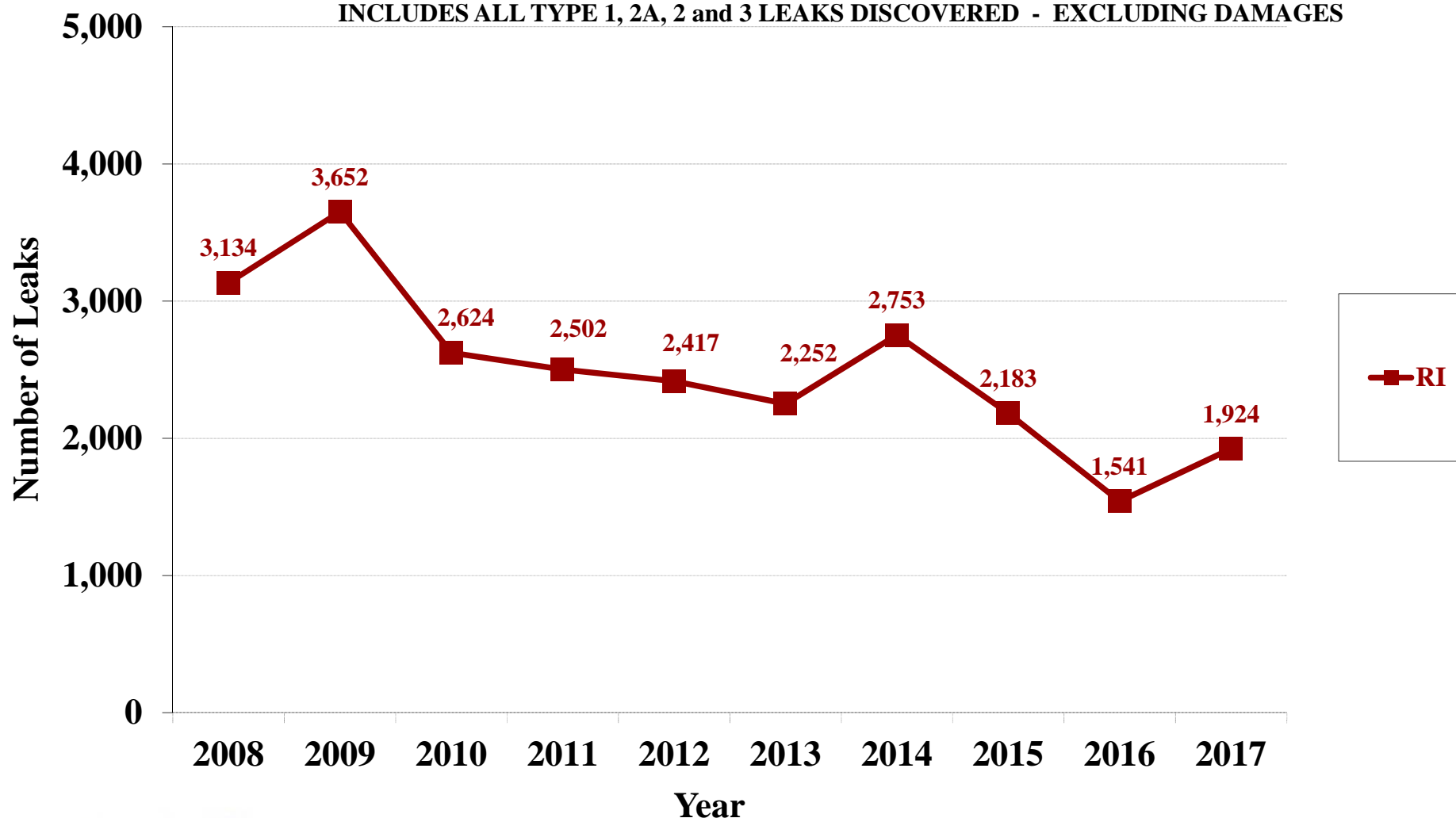
LEAK MANAGEMENT ANALYSIS (Mains & Services)

2017 SYSTEM INTEGRITY REPORT

RI

TOTAL LEAK RECEIPTS

INCLUDES ALL TYPE 1, 2A, 2 and 3 LEAKS DISCOVERED - EXCLUDING DAMAGES



2017 SYSTEM INTEGRITY REPORT

2017 LEAK RECEIPTS

RI

1,924 Leak Receipts

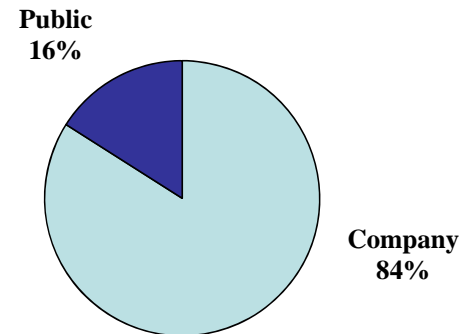
3,205 miles of Main
196,505 #'s of Services
(2,754 miles)

5,959 total miles of
pipe

*0.29 Leak Receipts
per Mile of Pipe*

2017 LEAK RECEIPTS BY DISCOVERY SOURCE (EXCLUDING DAMAGES)

RI

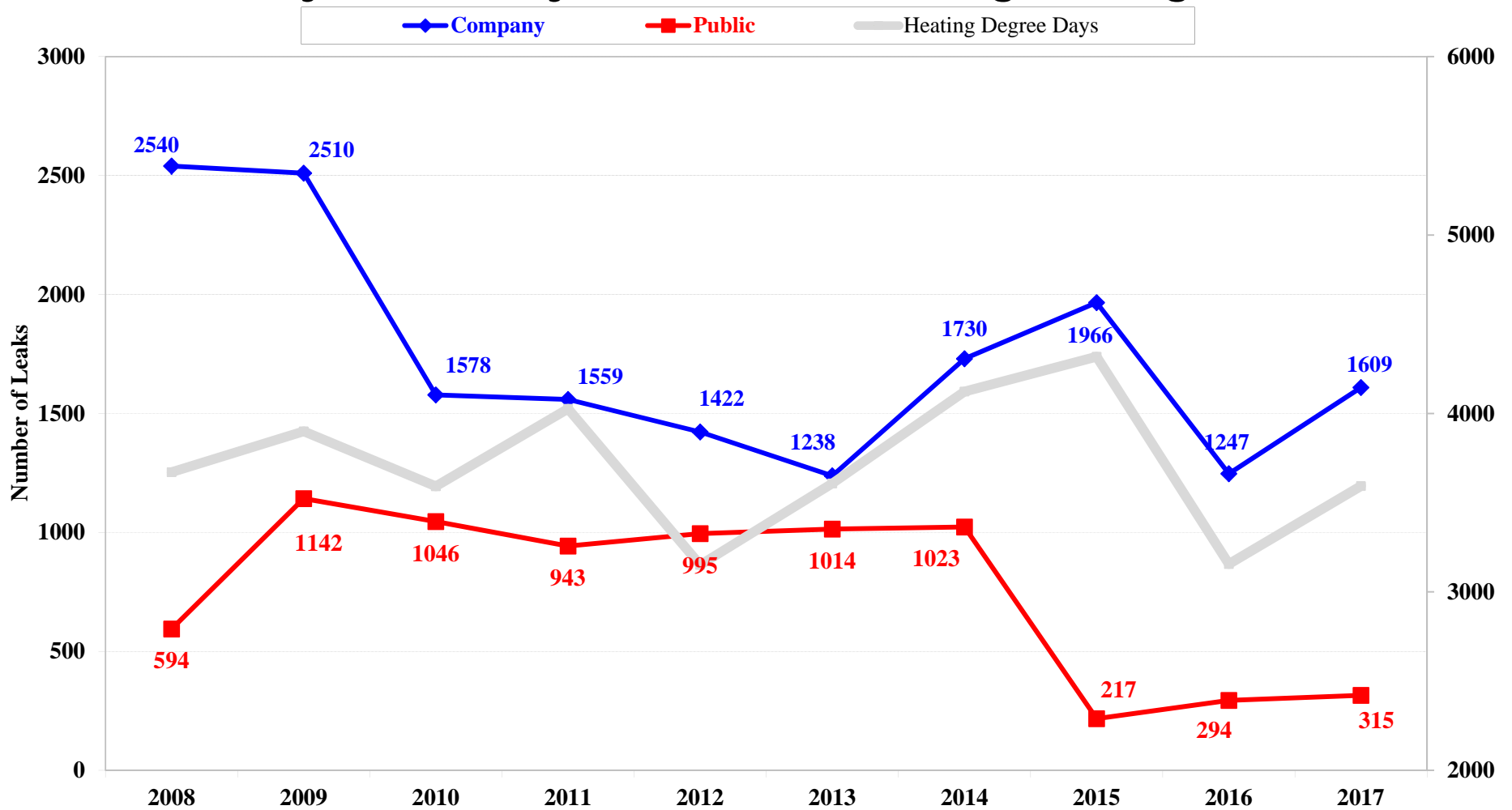


2017 SYSTEM INTEGRITY REPORT

RI

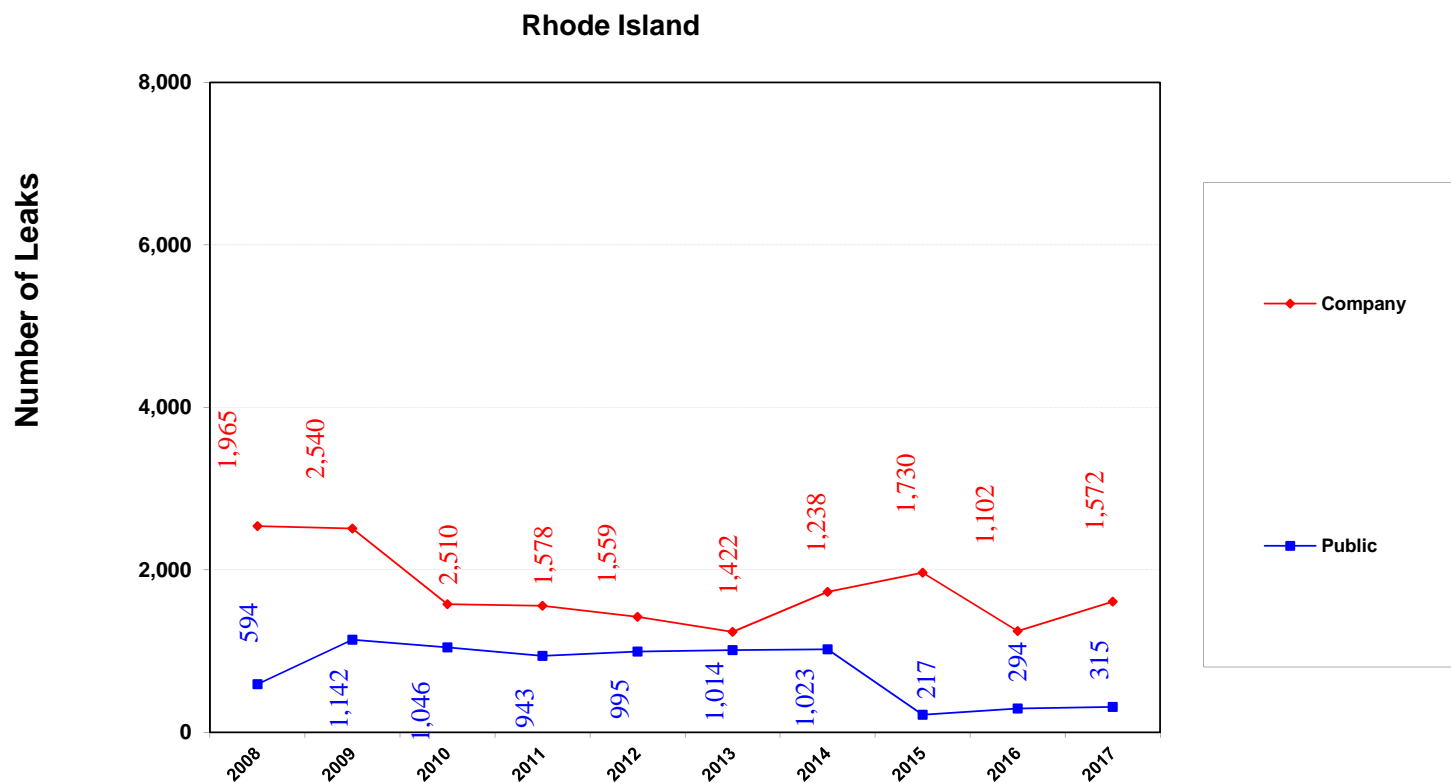
2008 - 2017 LEAK RECEIPTS

By Discovery Source (Excluding damages)



2017 SYSTEM INTEGRITY REPORT

RI 2007 - 2017 LEAK RECEIPTS By Discovery Source (Excluding damages)

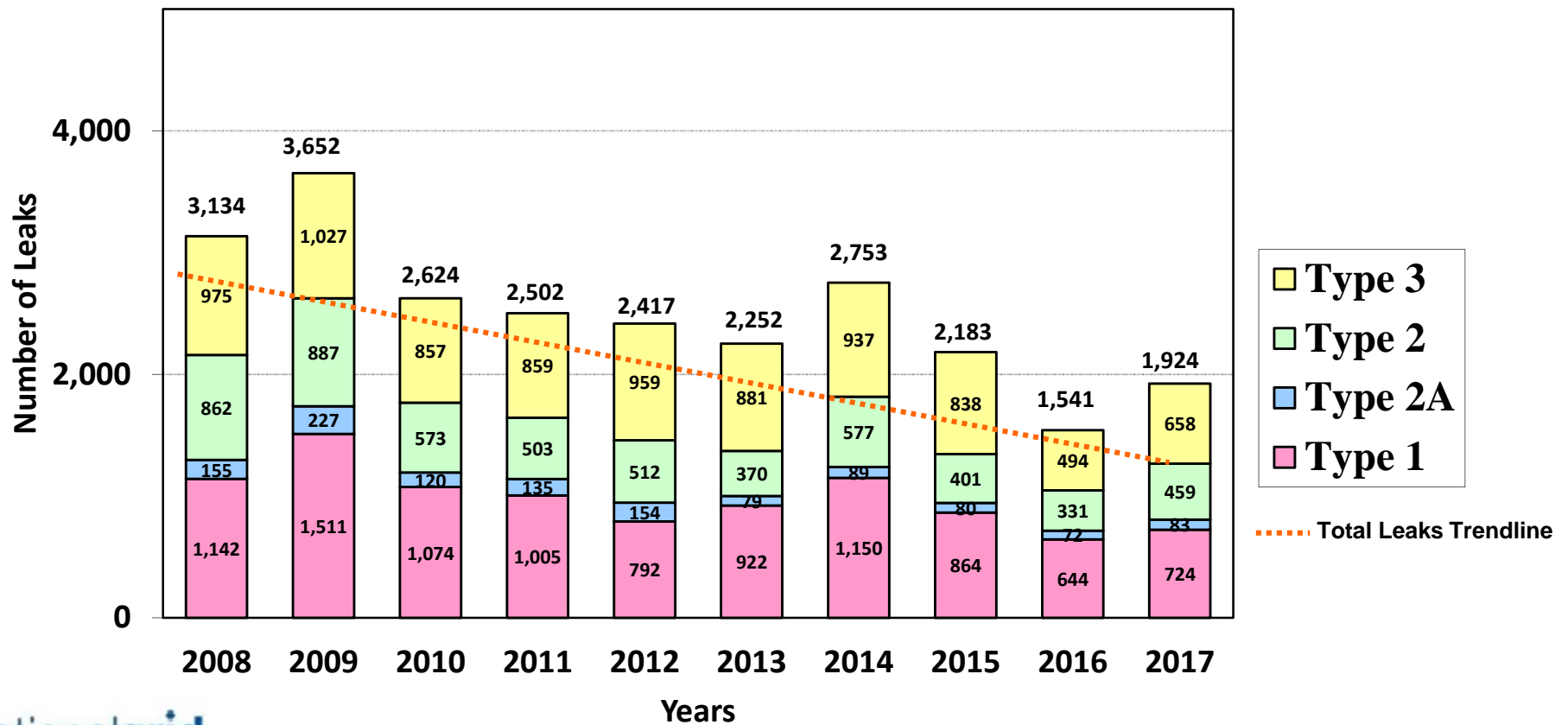


2017 SYSTEM INTEGRITY REPORT

RI

LEAK RECEIPTS By ORIGINAL Type

(Excluding Damages)

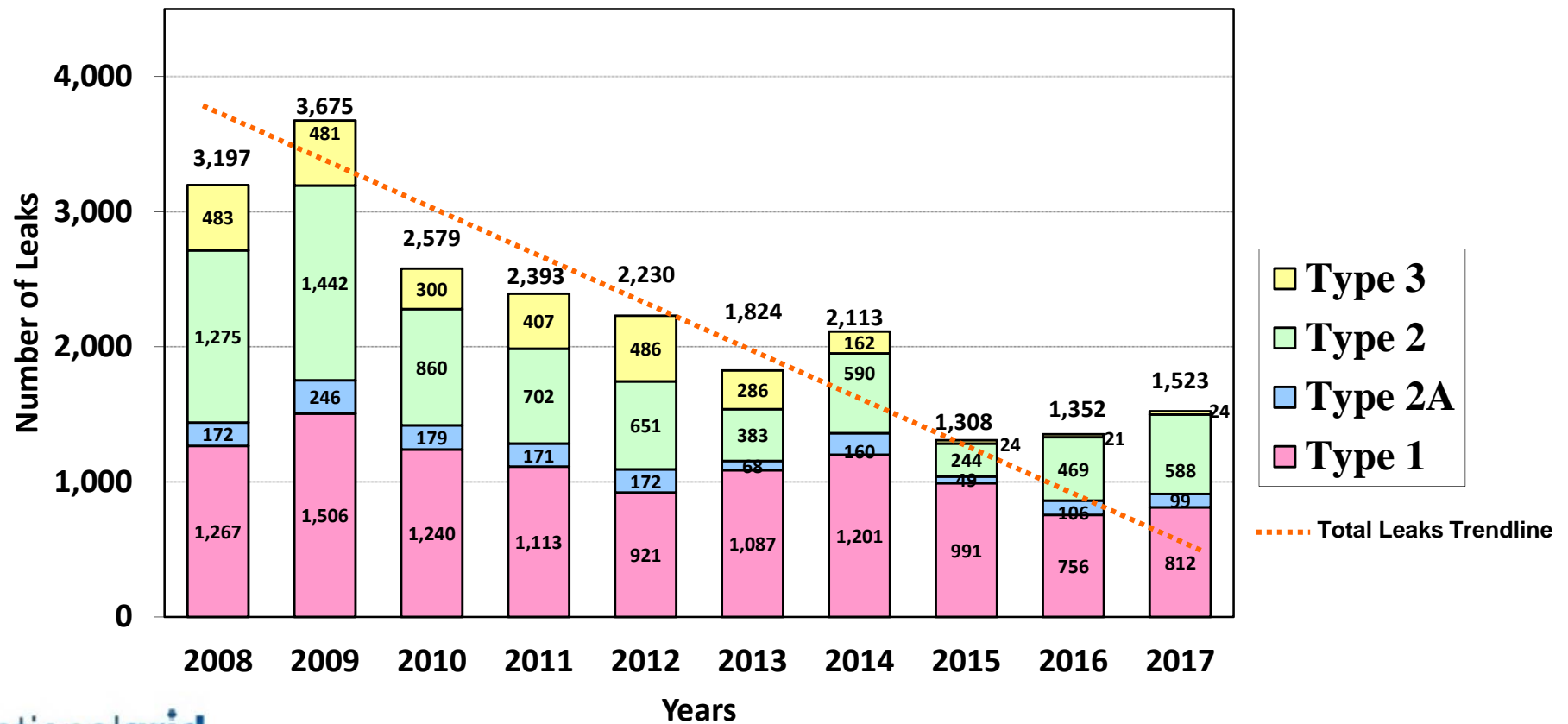


2017 SYSTEM INTEGRITY REPORT

RI

LEAKS REPAIRED By REPAIRED Type

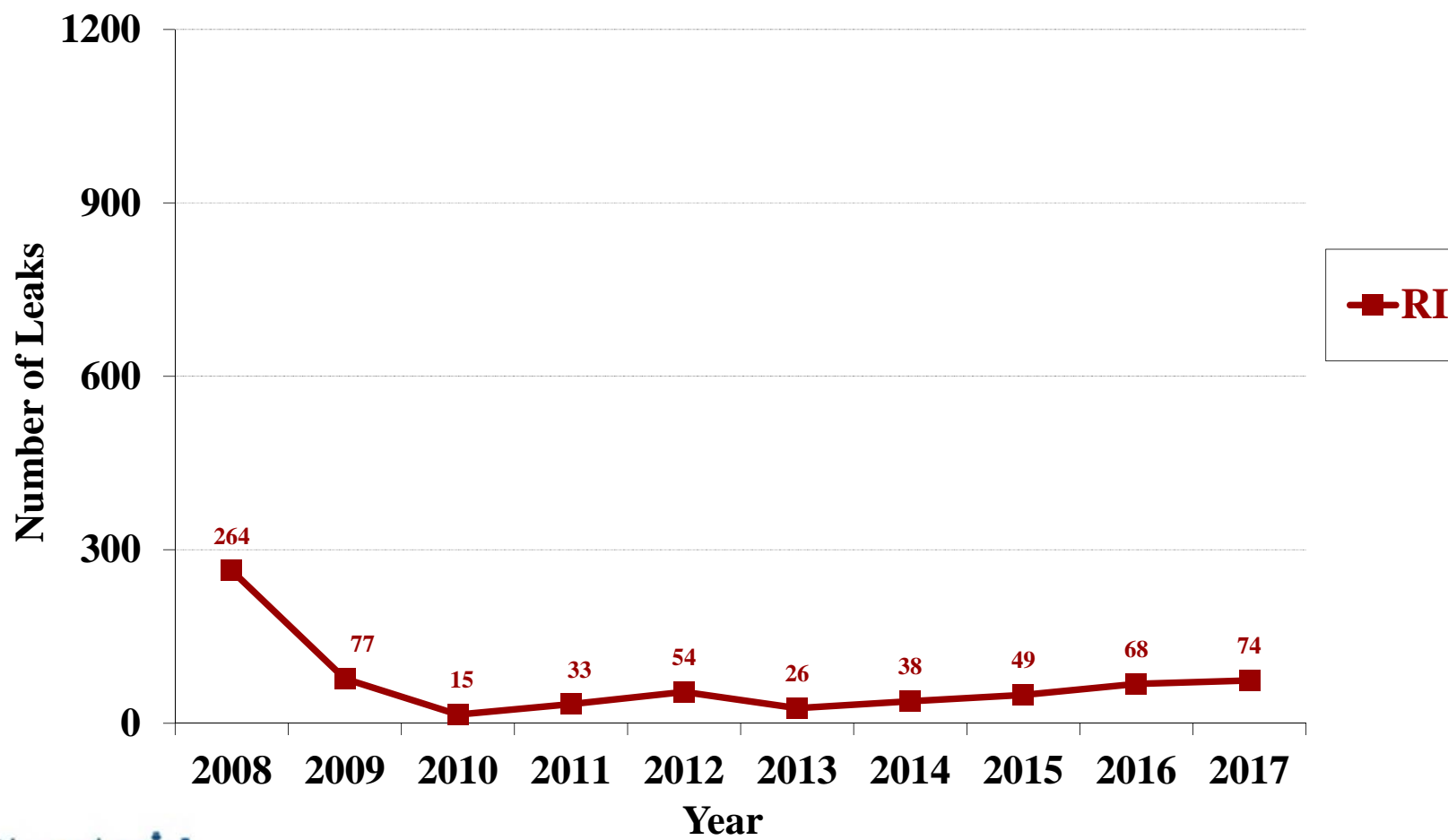
(Including Damages)



2017 SYSTEM INTEGRITY REPORT

RI

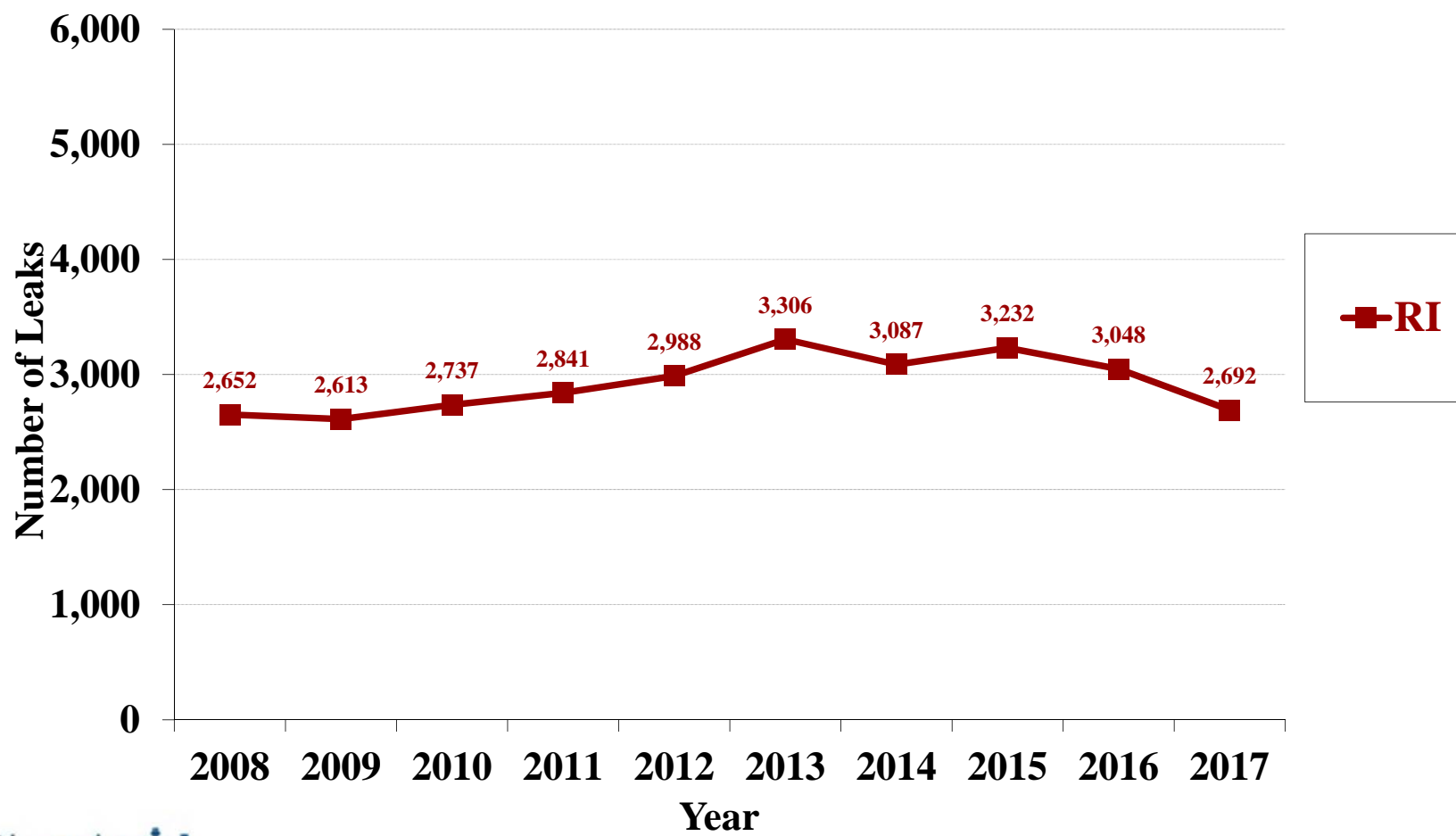
YEAR-END WORKABLE LEAK BACKLOGS



2017 SYSTEM INTEGRITY REPORT

RI

YEAR-END OPEN TYPE 3



2017 SYSTEM INTEGRITY REPORT

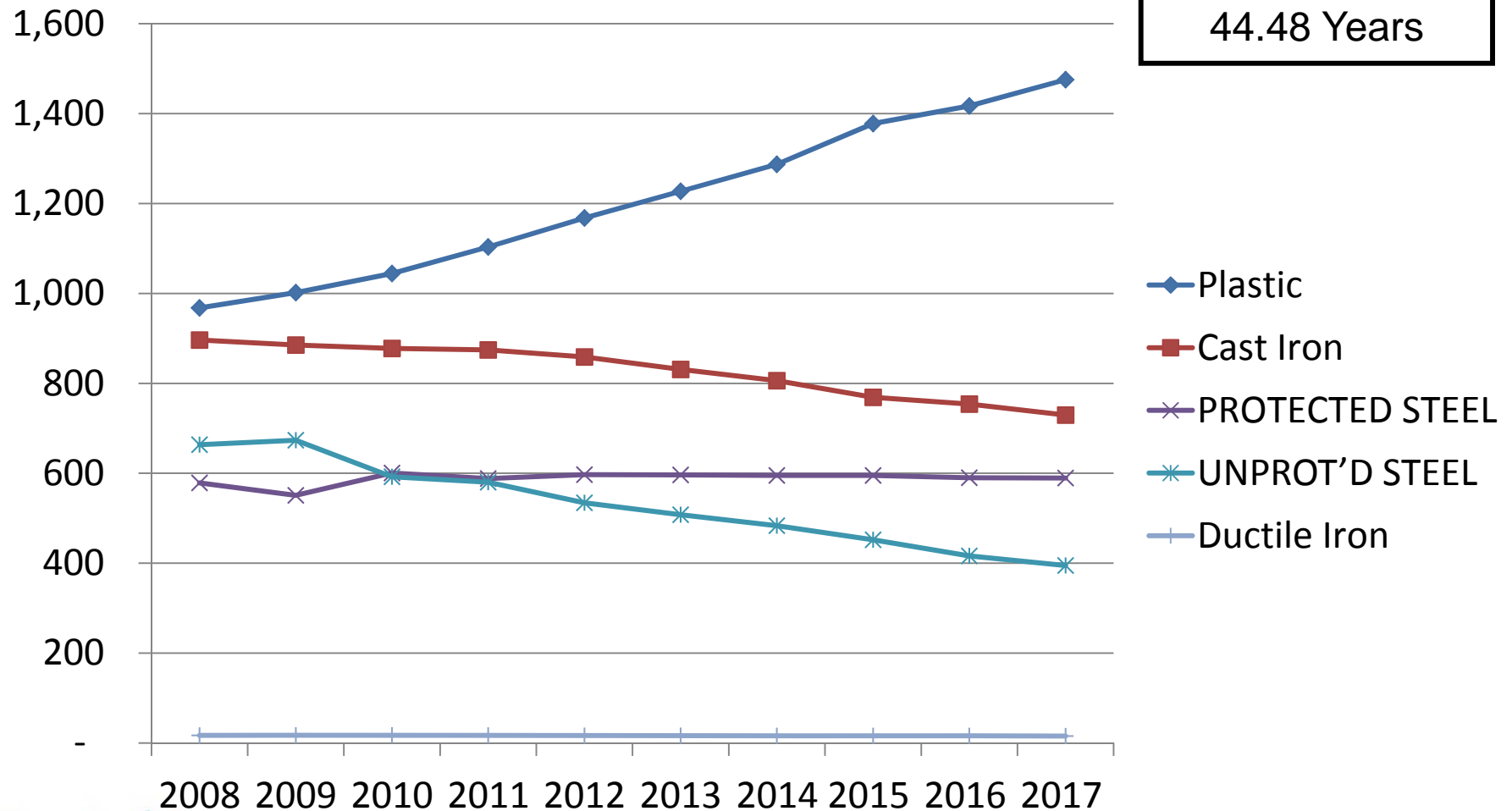
MAIN INVENTORY ANALYSIS

2017 SYSTEM INTEGRITY REPORT

RI

MAIN INVENTORY TREND (MILES)

Average Age
Of All RI
Distribution Main:
44.48 Years

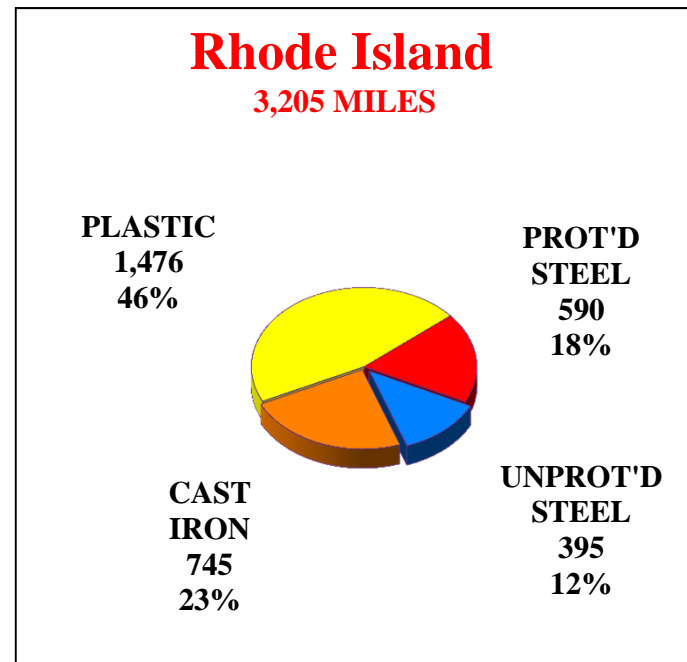


2017 SYSTEM INTEGRITY REPORT

MAIN INVENTORY

RI

RI

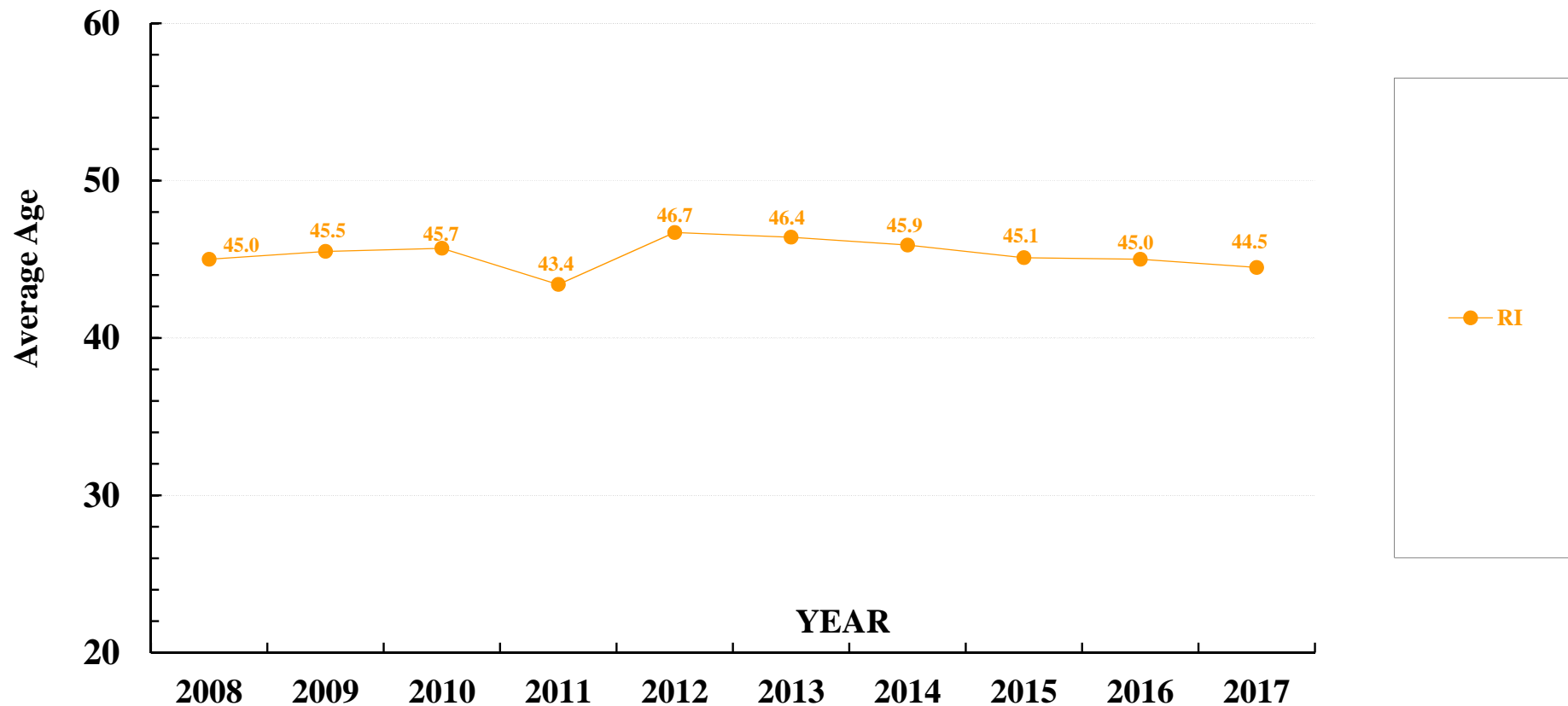


2017 SYSTEM INTEGRITY REPORT

RI

National Grid Gas Distribution System Average Age of Main by Legacy NG Company Reflects Expected Northeast Pattern(i.e., old civilization areas and cast iron)

Average Main System Age



2017 SYSTEM INTEGRITY REPORT

RI NATIONAL GRID MAIN REPLACEMENT

Rate Case Supported "Leak-Prone" Main Replacement Levels										
Region	2017 Total Main (Miles)	2017 Leak Prone Main (Miles)	Leaks/Miles of Total Main (Repair rate)	Leaks/Miles of Leak Prone Main (Repair rate)	(5)2017 Annual "Planned" Replacement (Miles)	Planned Replacement % of Leak prone system	(5)2017 Annual "Actual" Replacement (Miles)	Actual Replacement % of Leak prone system	(5)2018 Annual "Planned" Replacement (Miles)	Years to LPP Main Elimination based on "Current" annual plan
RI	3,205	1,124	0.26	0.73	53.7	4.8%	53.6	4.8%	60.0	18

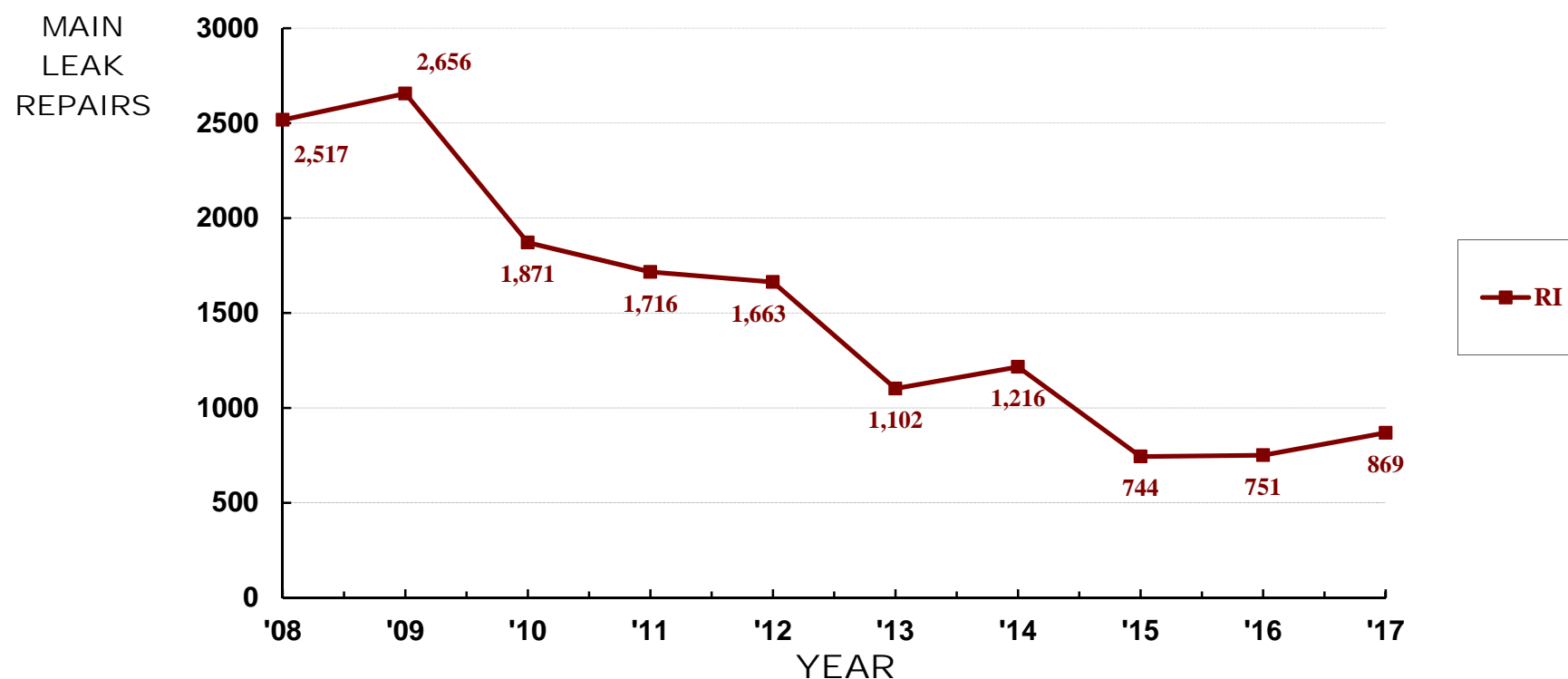
- Note:
1. Leaks per mile of total main excludes Excavation leaks.
 2. Leaks per mile of Leak-Prone main (LPP) excludes Excavation leaks and Plastic leaks.
 3. Leak-Prone Pipe = Unprotected steel (Bare & Coated) + CI/WI + Aldyl-A (MD, 1985 and prior) + Other.
 4. Miles of Leak-Prone main replaced includes all Proactive programs (Main Replacement program & System Reinforcement) and all Reactive programs (Public Works, Water Intrusion & Leak/reactive).
 5. Annual planned and actual replacement miles are CY.
 6. Data sources are 2016 & 2017 US Gas Leak Prone Pipe Replacement Programs monthly reports from Gas Resource Management CMS.

2017 SYSTEM INTEGRITY REPORT

MAIN LEAK REPAIR ANALYSIS

2017 SYSTEM INTEGRITY REPORT

RI TOTAL MAIN LEAK REPAIRS INCLUDING Damages



2017 SYSTEM INTEGRITY REPORT

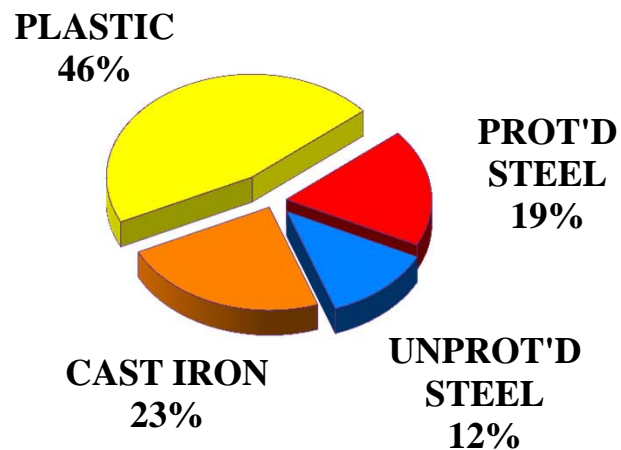
RI

TOTAL MAIN INVENTORY COMPARED TO LEAK REPAIRS

TOTAL MAIN INVENTORY

BY MATERIAL

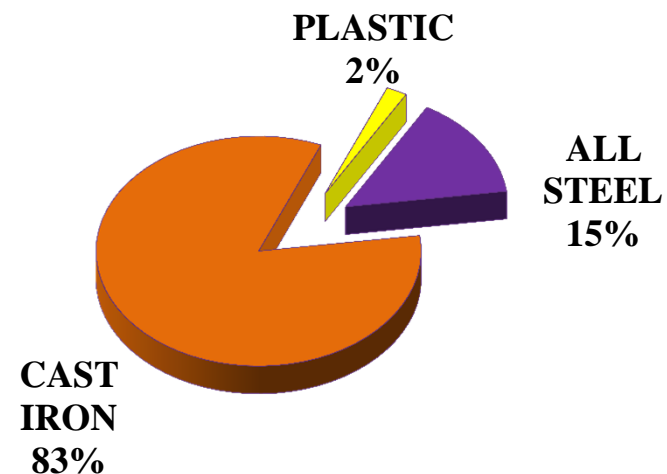
3,205 MILES



TOTAL MAIN LEAK REPAIRS

BY MATERIAL

751 LEAKS (including damages)



**NOTE: (*) CI Leaks include Other material Leaks.
Leak Count Totals Individual Repairs.**

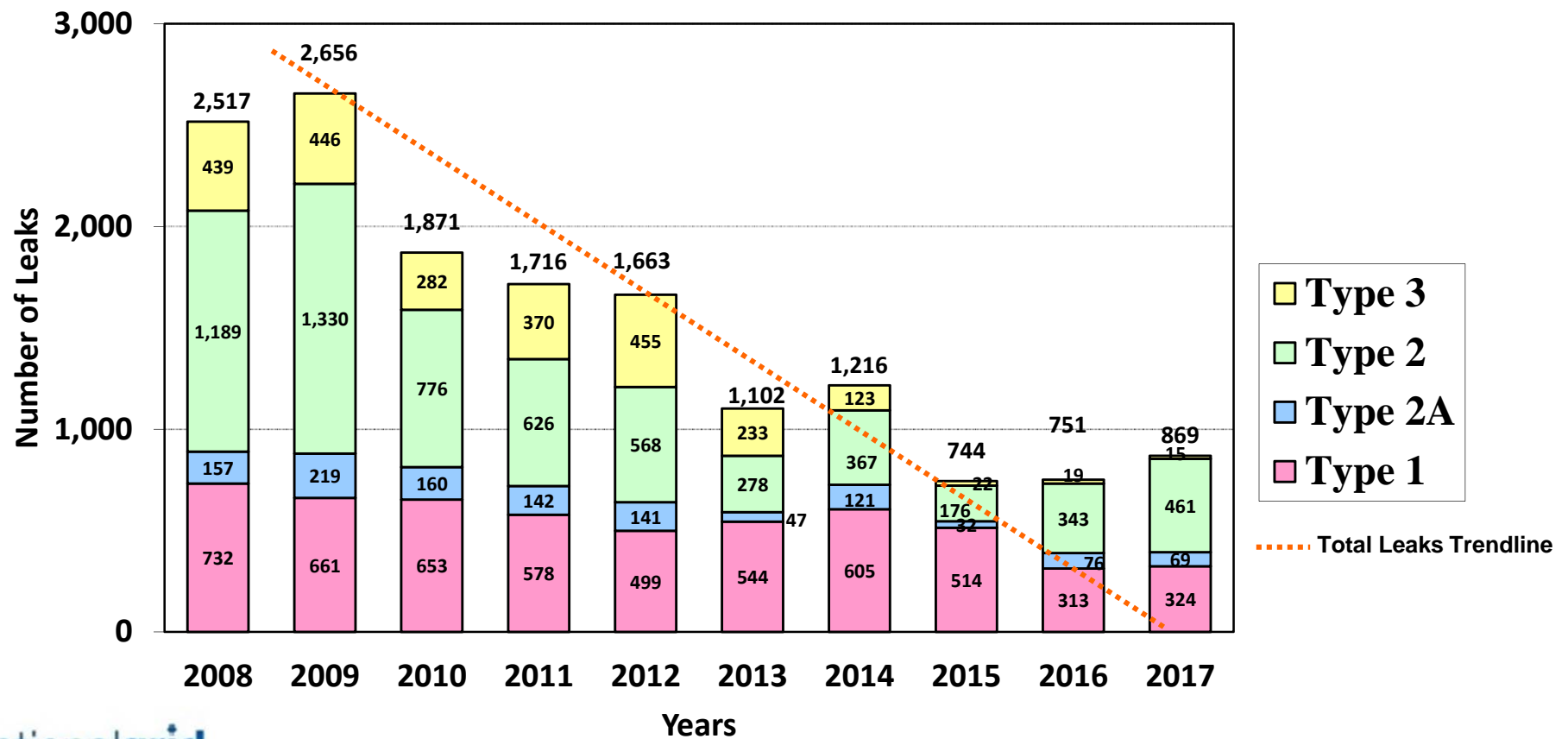
2017 SYSTEM INTEGRITY REPORT

RI

LEAKS REPAIRED By Type

MAIN

(Including Damages)



2017 SYSTEM INTEGRITY REPORT

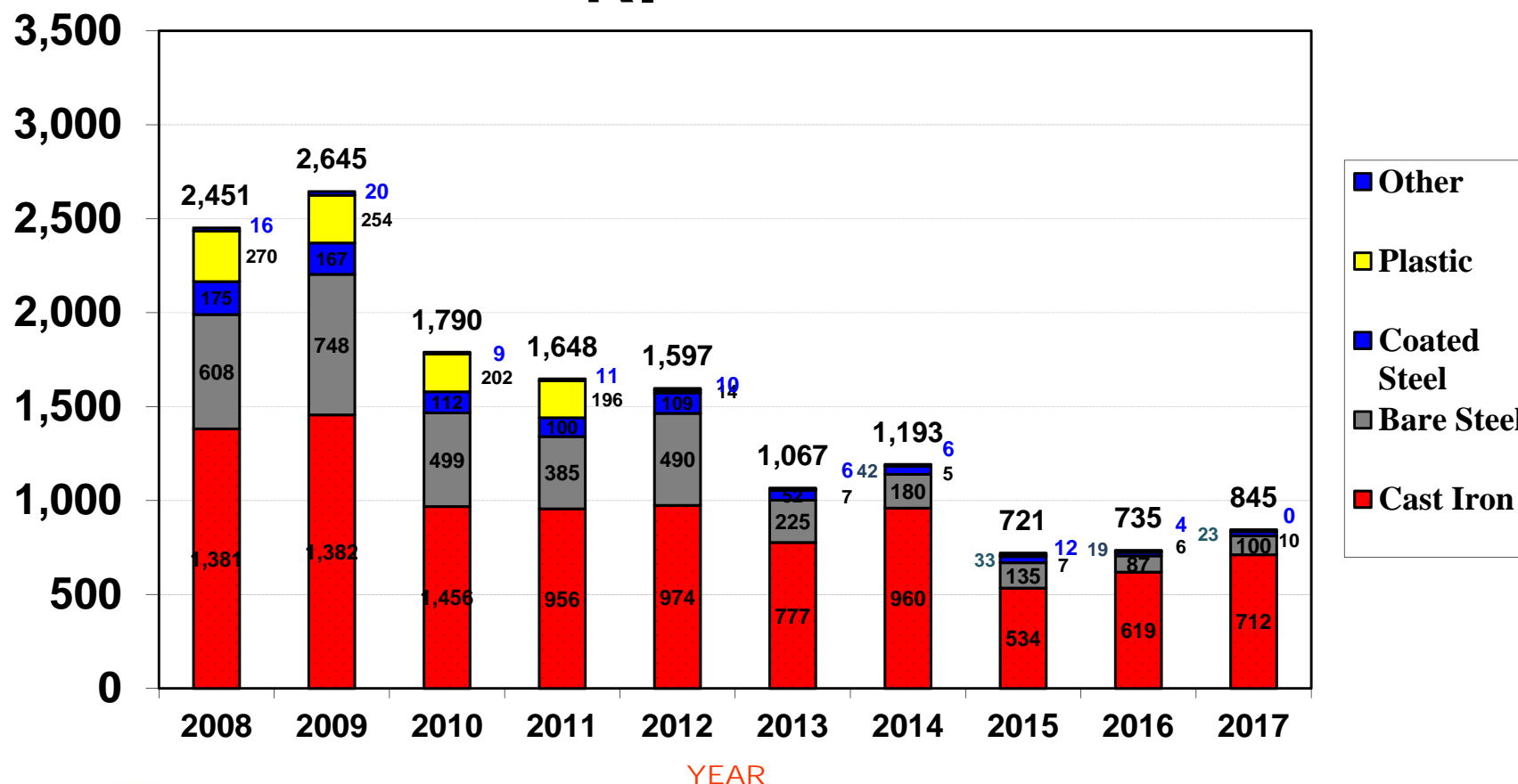
2008 - 2017 MAIN LEAK REPAIRS

All Main Leak Repairs by Material
 (Excluding Damages)

RI

NUMBER OF MAIN
 LEAK REPAIRS

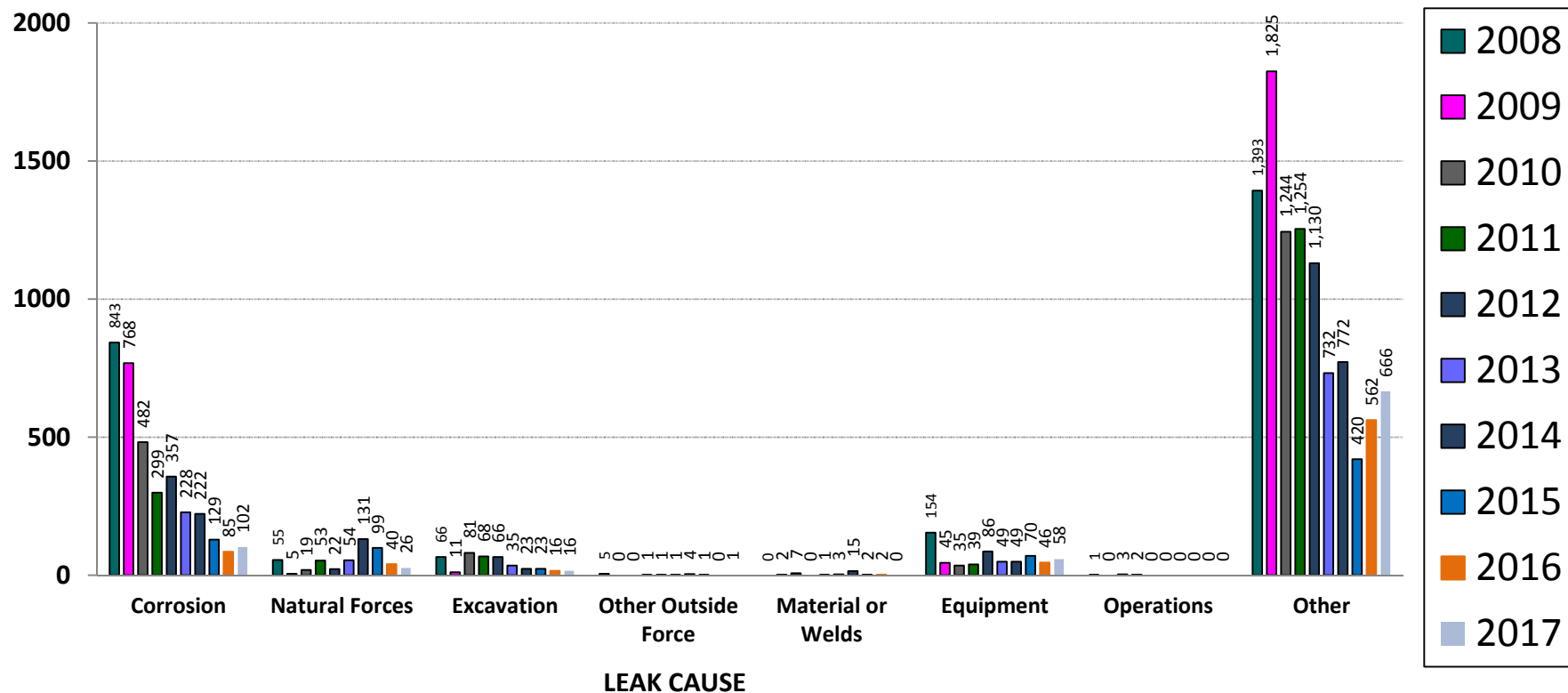
RI



2017 SYSTEM INTEGRITY REPORT

RI MAIN LEAKS REPAIRED COMPARISON BY LEAK CAUSES

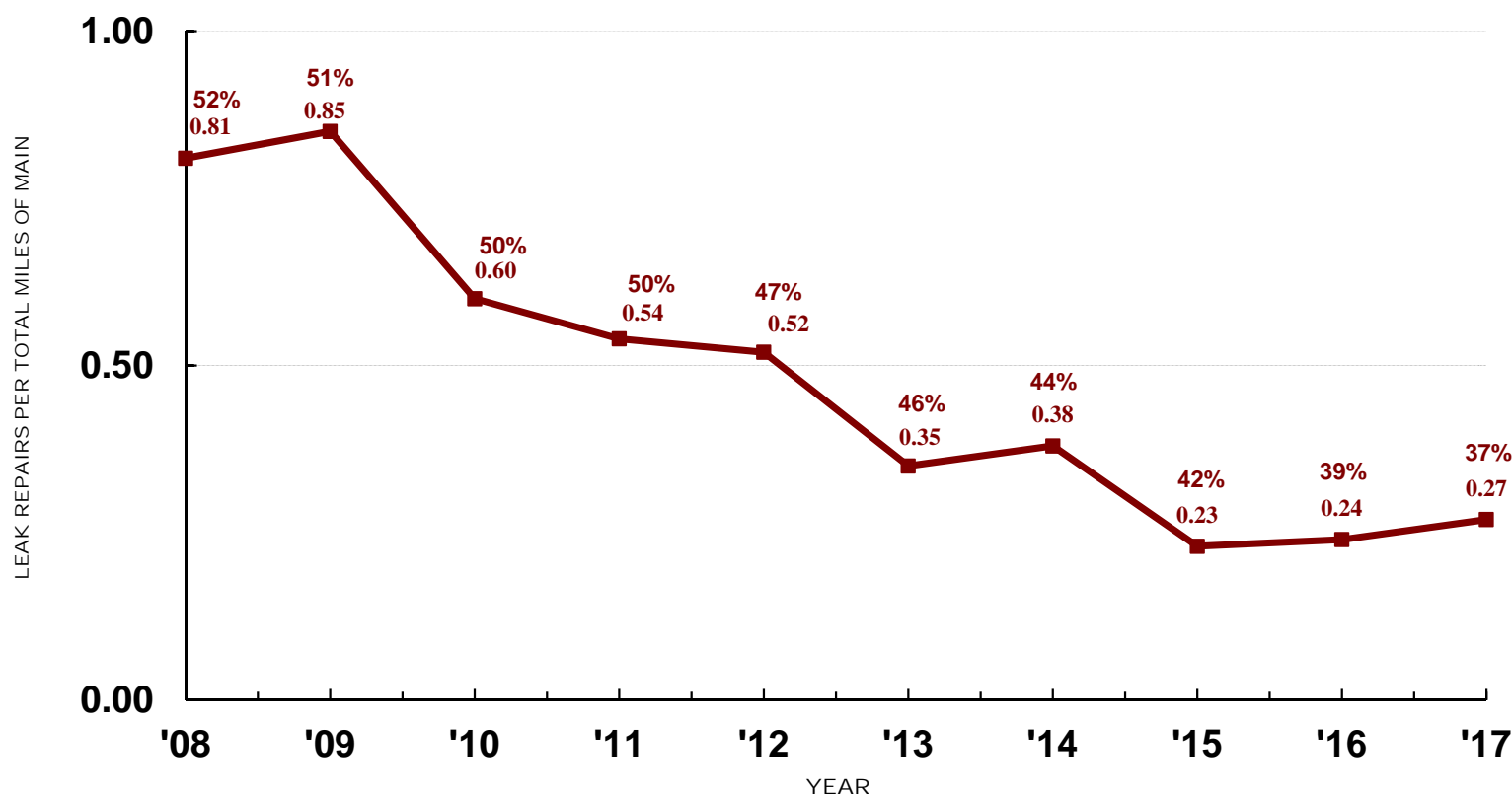
LEAK REPAIRS



2017 SYSTEM INTEGRITY REPORT

RI TOTAL MAIN LEAK "RATES" INCLUDING Damages

PERCENTAGES SHOWN ARE PERCENT OF LEAK-PRONE PIPE

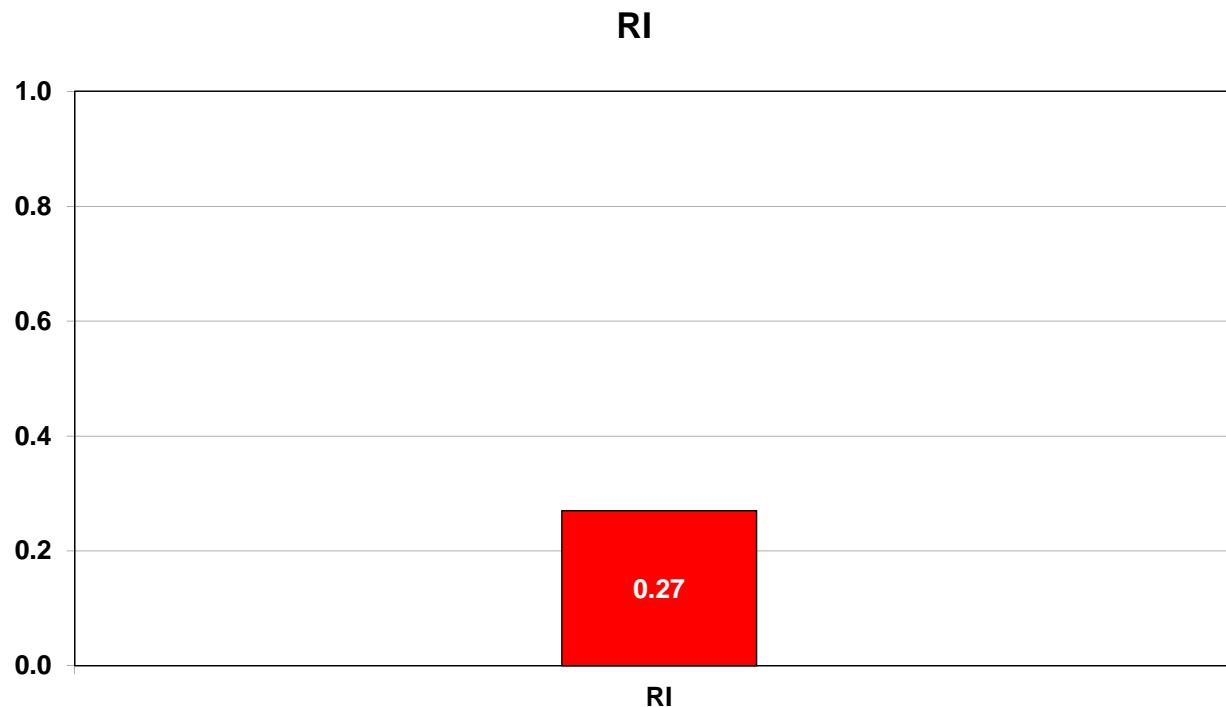


2017 SYSTEM INTEGRITY REPORT

RI

MAIN LEAK "RATES"

Total Main Leak Repairs (incl. damages)
/ Mile of Total Main



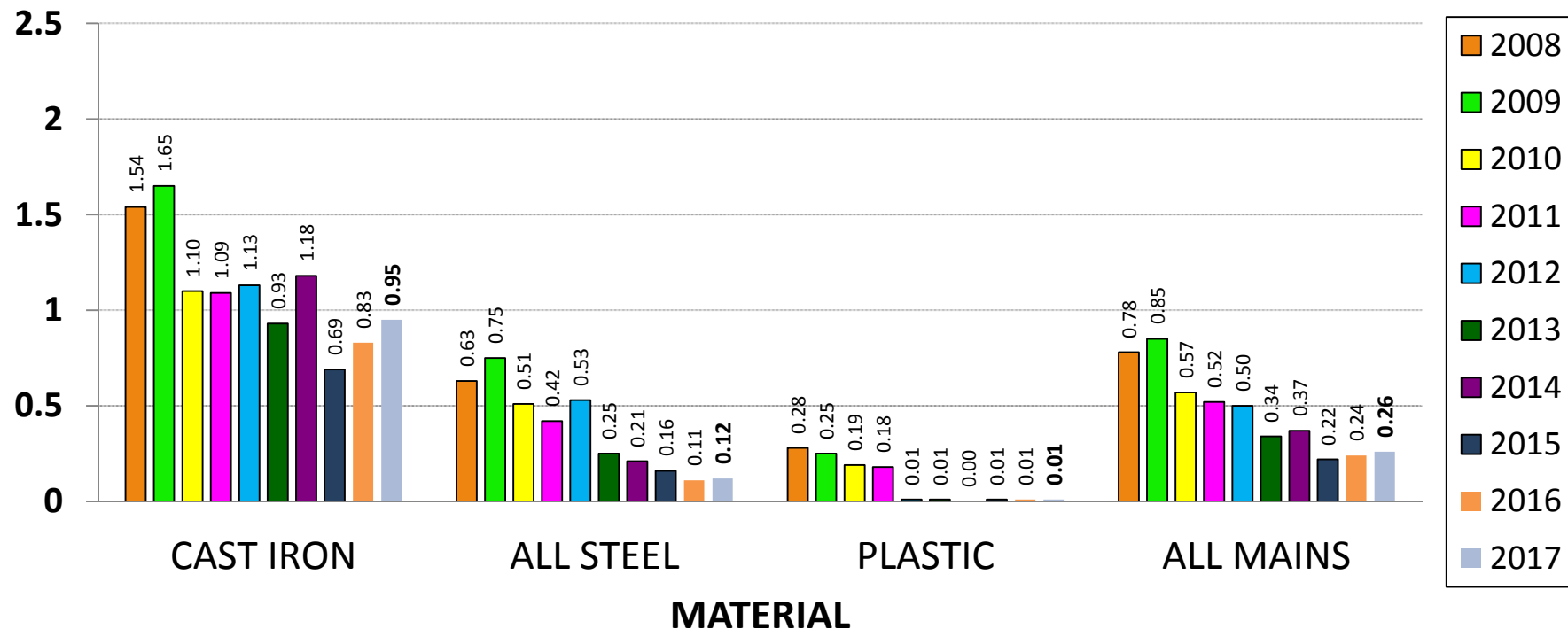
2017 SYSTEM INTEGRITY REPORT

RI

MAIN LEAK "RATES" COMPARISON BY MATERIAL

EXCLUDING Damages

LEAK REPAIRS
 PER MILE OF MAIN



COUNTING EACH INDIVIDUAL REPAIR AS A LEAK

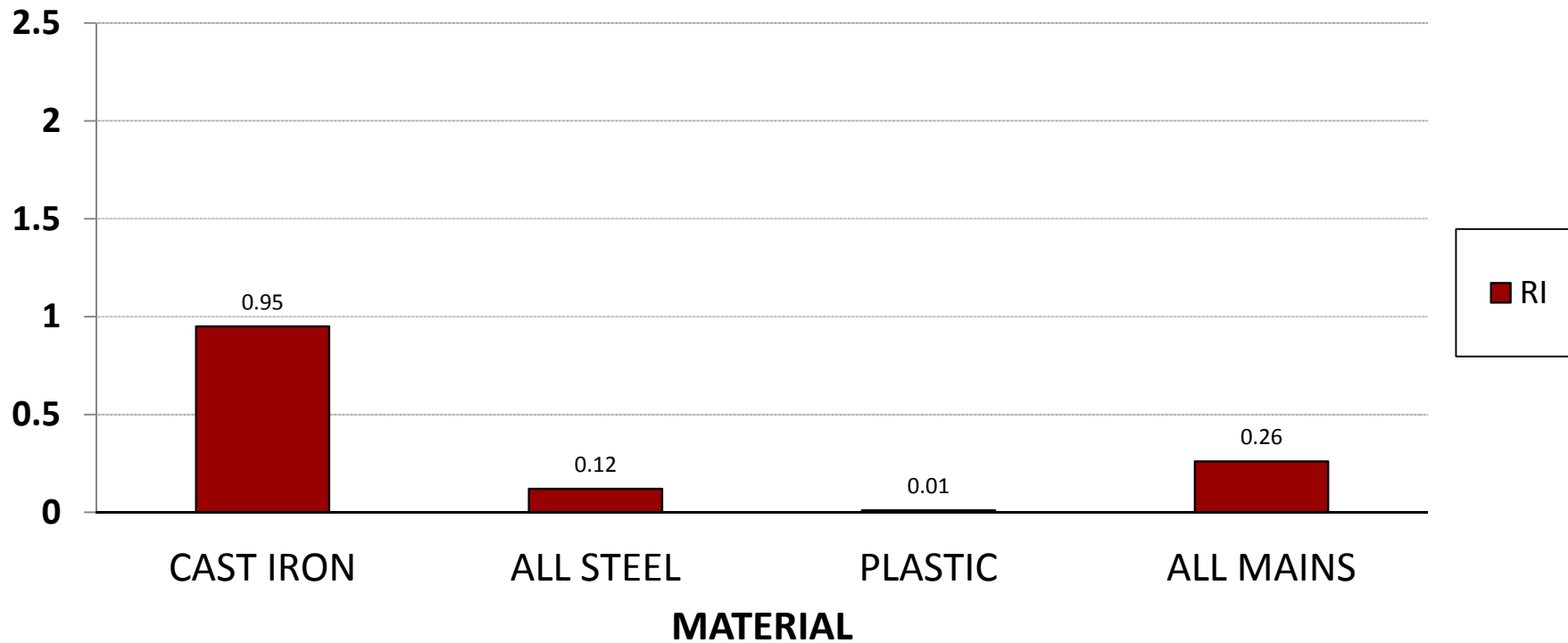
2017 SYSTEM INTEGRITY REPORT

RI

MAIN LEAK "RATES" COMPARISON BY MATERIAL

EXCLUDING Damages

LEAK REPAIRS
PER MILE OF MAIN



2017 SYSTEM INTEGRITY REPORT

2017 DETAILS OF MAIN LEAK REPAIRS



2017 SYSTEM INTEGRITY REPORT

RI

MAIN LEAK REPAIRS MATERIAL-CAUSE MATRIX

	<u>CORROSION</u>	<u>MATL/WELD</u>	<u>NAT FORCE</u>	<u>OTH OS FRC</u>	<u>EQUIPMENT</u>	<u>OPERATIONS</u>	<u>CI JT/OTHER</u>	<u>DAMAGES</u>	<u>ALL CAUSES</u>
CAST IRON	4	0	26	0	27	0	663	5	725
STEEL	98	0	0	0	22	0	3	3	126
BARE	85	0	0	0	12	0	3	2	0
COATED	13	0	0	0	10	0	0	1	24
<u>PLASTIC</u>	0	0	0	1	9	0	0	8	18
<u>OTHER</u>	0	0	0	0	0	0	0	0	0
ALL MAINS	102	0	26	1	58	0	666	16	869

COUNTING EACH INDIVIDUAL REPAIR AS A LEAK

2017 SYSTEM INTEGRITY REPORT

A CLOSER LOOK AT CAST IRON MAINS

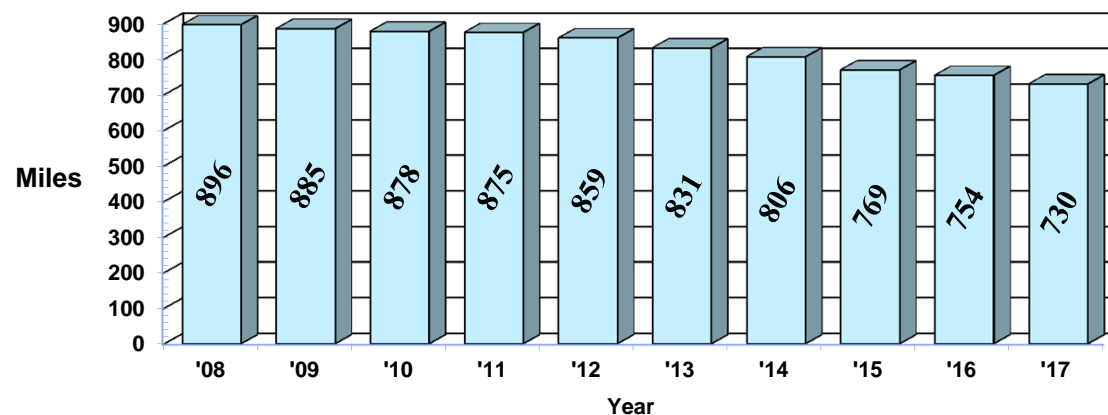


2017 SYSTEM INTEGRITY REPORT

RI

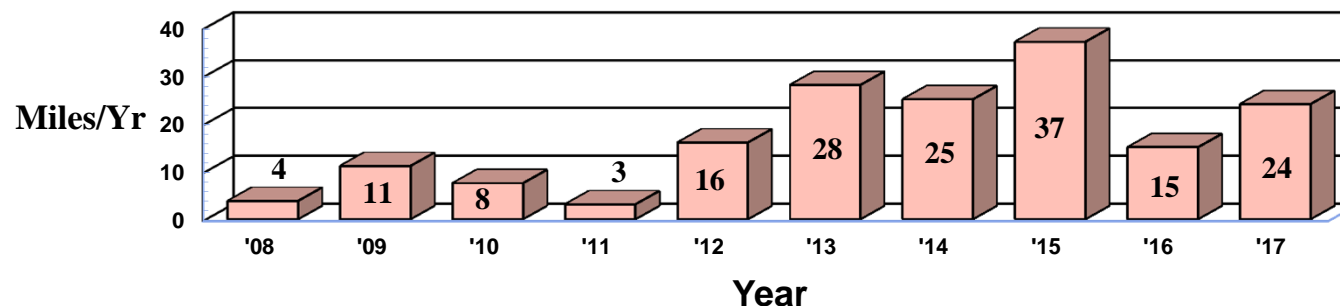
DOT-
 Reported
 Pipe
 Inventories

CAST IRON MAIN INVENTORY



CAST IRON ATTRITION RATE

Avg 10-Yr Attrition Rate: 17.05 Miles/Year (2.34%)

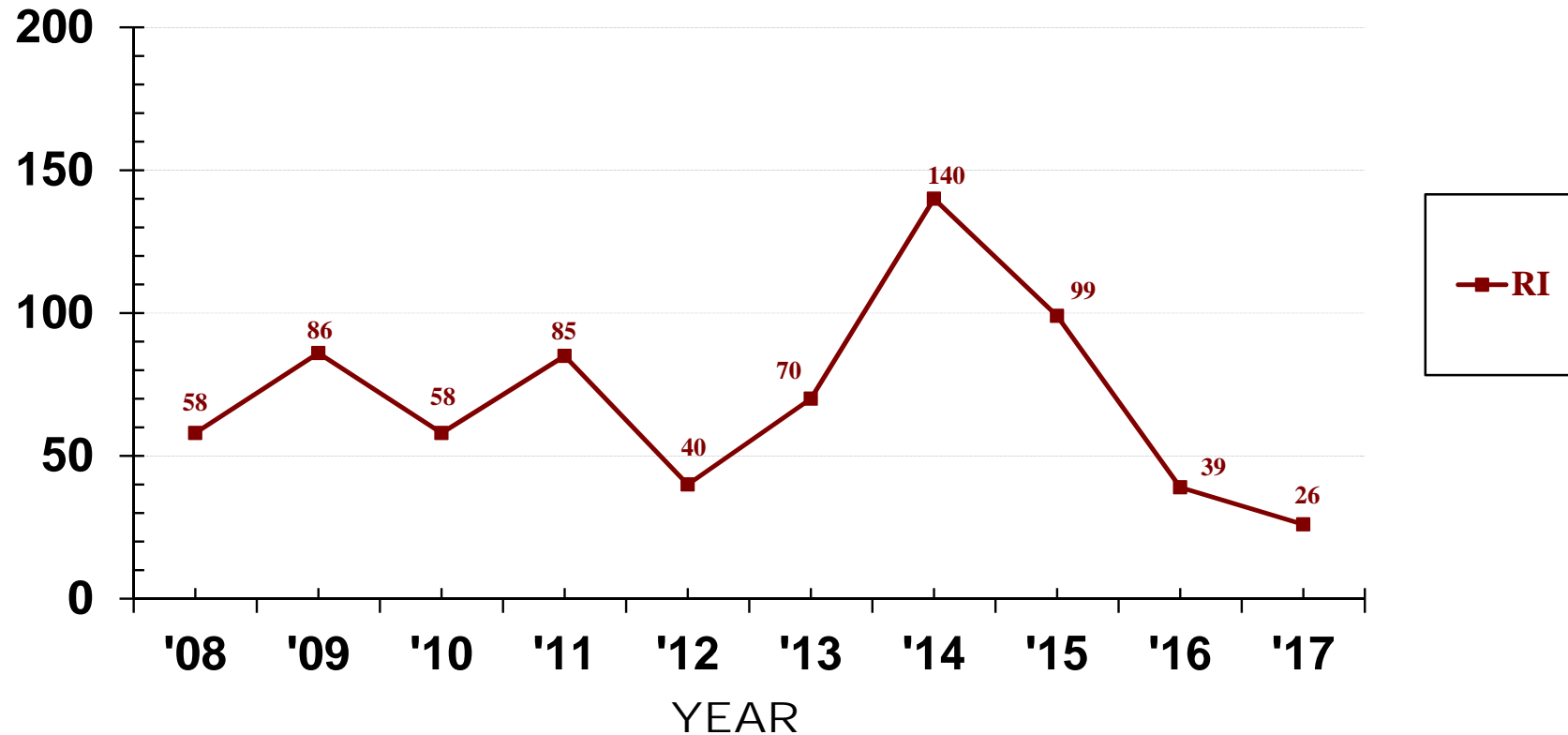


2017 SYSTEM INTEGRITY REPORT

RI

TOTAL CAST IRON MAIN BREAKS

BREAKS

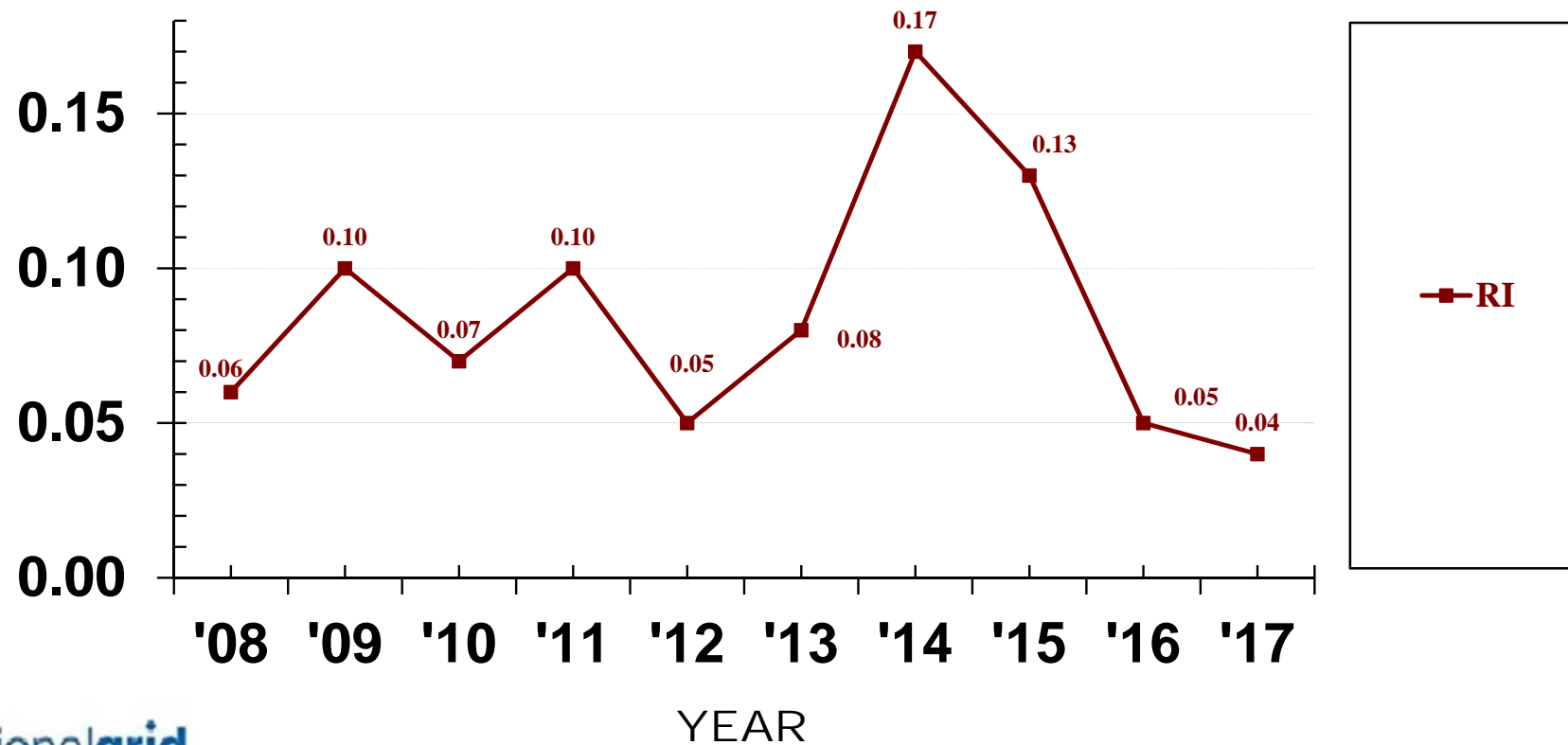


2017 SYSTEM INTEGRITY REPORT

RI

CAST IRON MAIN BREAK "RATES"

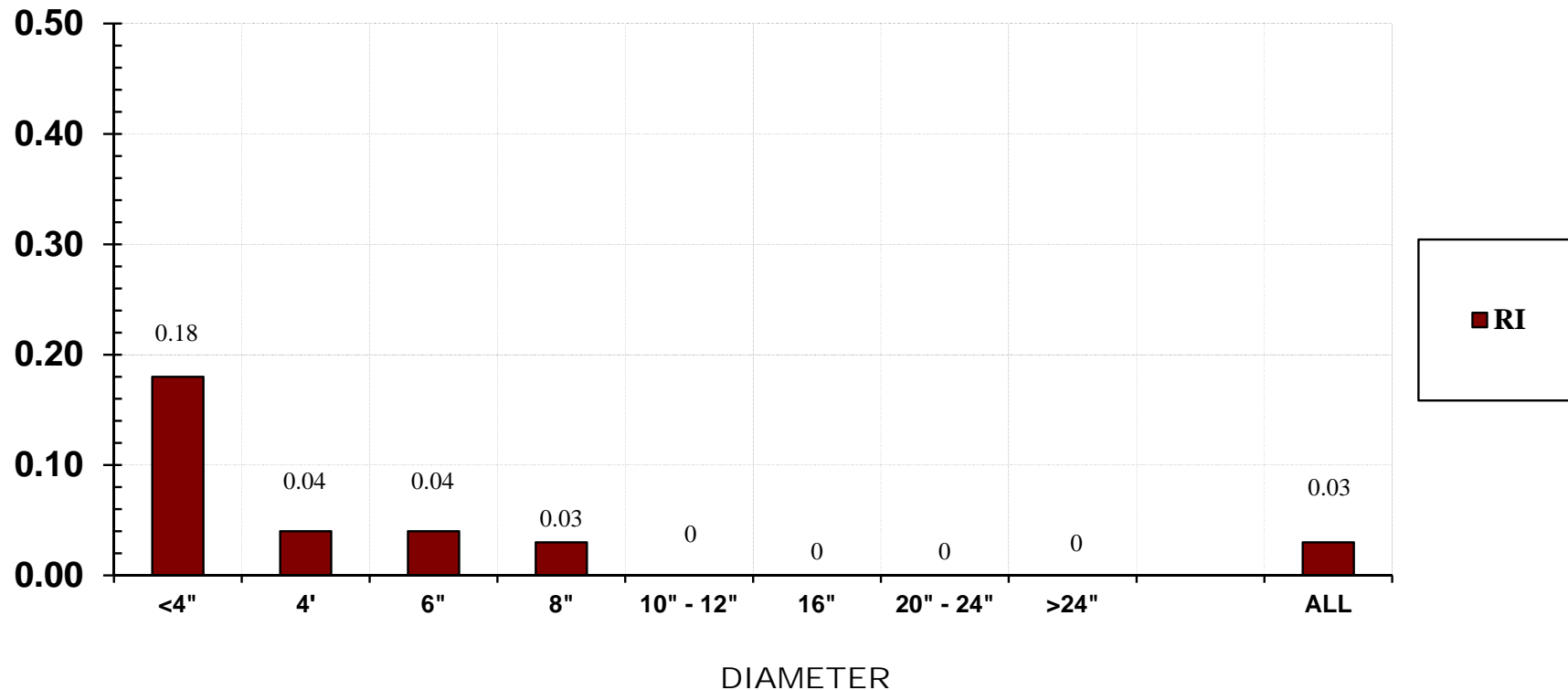
BREAKS
PER MILE



2017 SYSTEM INTEGRITY REPORT

RI CAST IRON MAIN BREAK "RATES" "RI REGION" COMPARISON BY DIAMETER

CAST IRON BREAKS
 PER MILE OF CI MAIN



nationalgrid

CI Inventory		
Size	2016	2017
< 4"	6	5
4"	302	281

CI Inventory		
Size	2016	2017
6"	319	303
8"	32	30

CI Inventory		
Size	2016	2017
10" - 12"	73	71
16"	18	17

CI Inventory		
Size	2016	2017
20" - 24"	14	13
24"	5	5

2017 SYSTEM INTEGRITY REPORT

A CLOSER LOOK AT STEEL MAINS

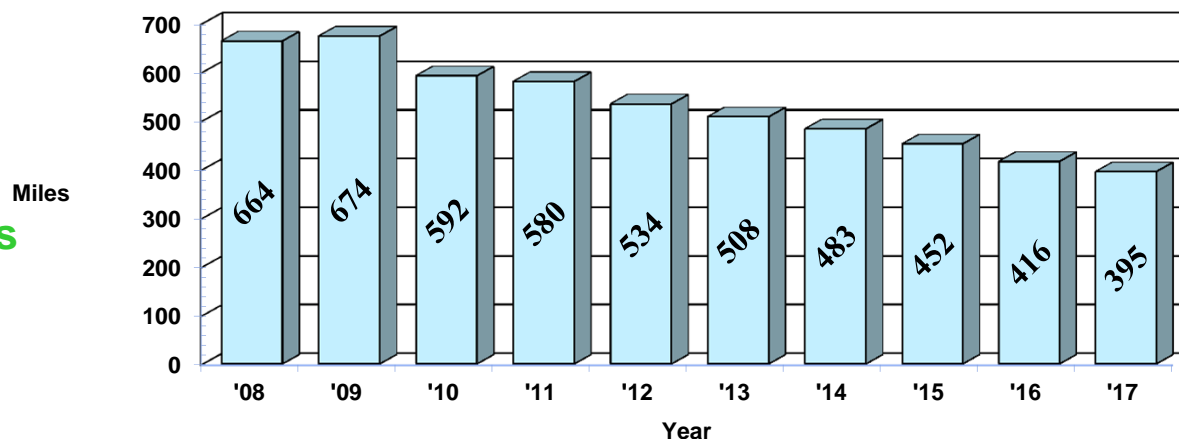


2017 SYSTEM INTEGRITY REPORT

RI

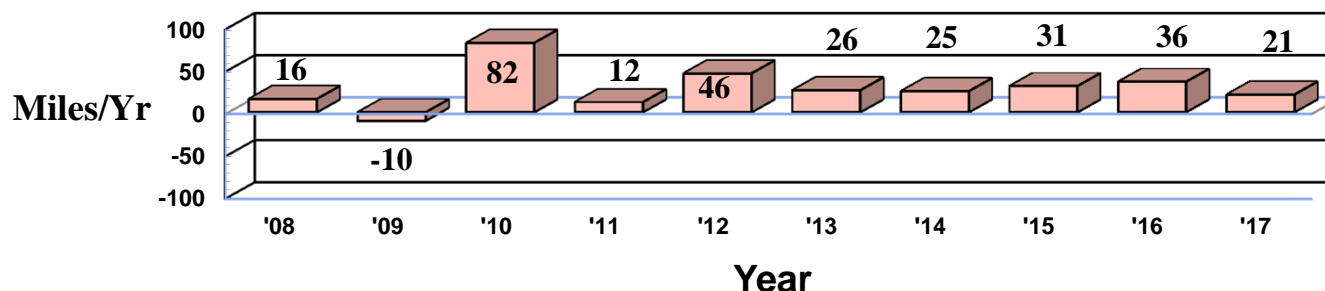
UNPROTECTED STEEL MAIN INVENTORY

DOT-
Reported
Pipe
Inventories



UNPROTECTED STEEL ATTRITION RATE

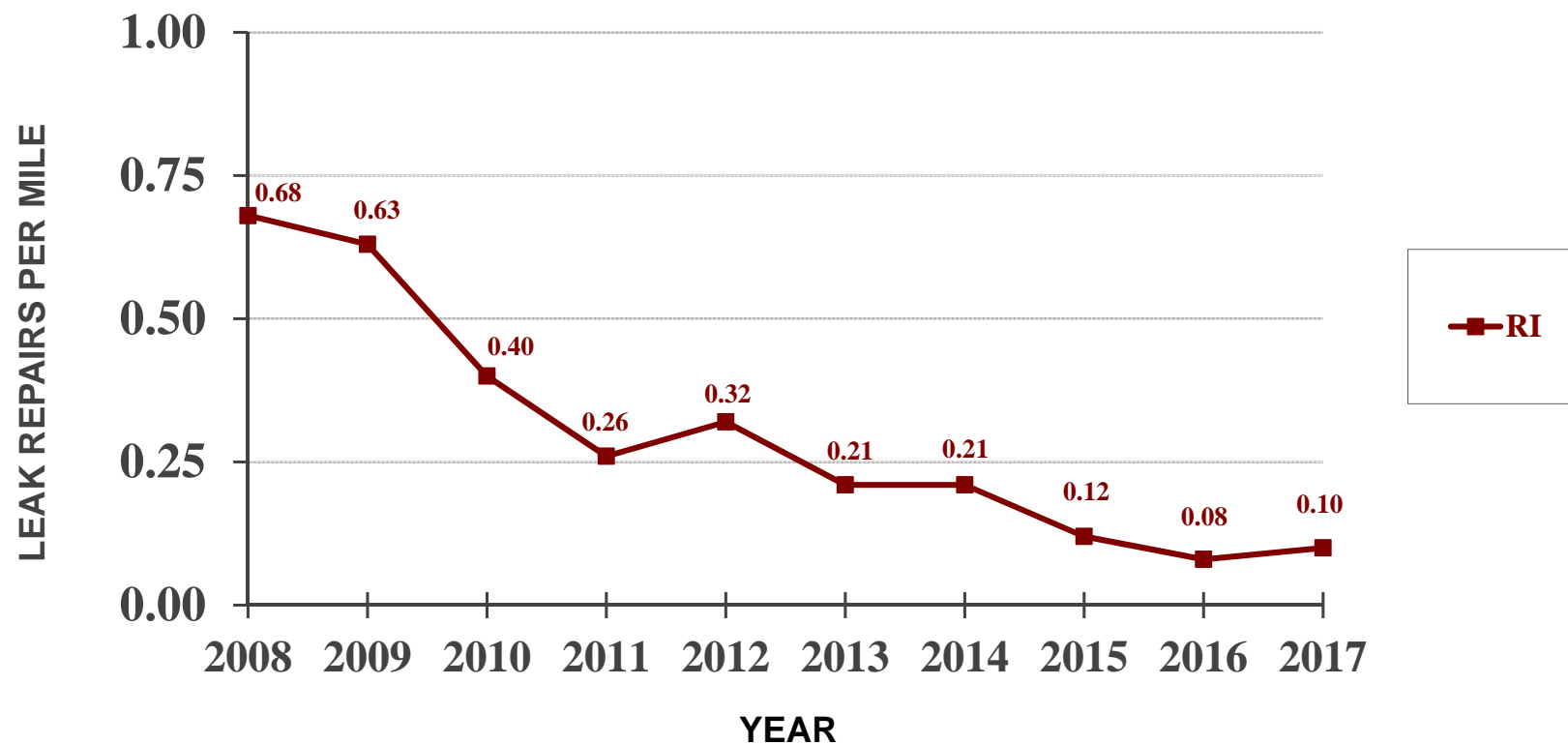
Avg 10 -Yr Attrition Rate: 28.43 Miles/Year (7.20%)



2017 SYSTEM INTEGRITY REPORT

RI MAIN CORROSION LEAK "RATES" CORROSION Leak Repairs Per Mile of "TOTAL" Steel

INCLUDES ALL CORROSION LEAKS, REGARDLESS OF MAIN MATERIAL

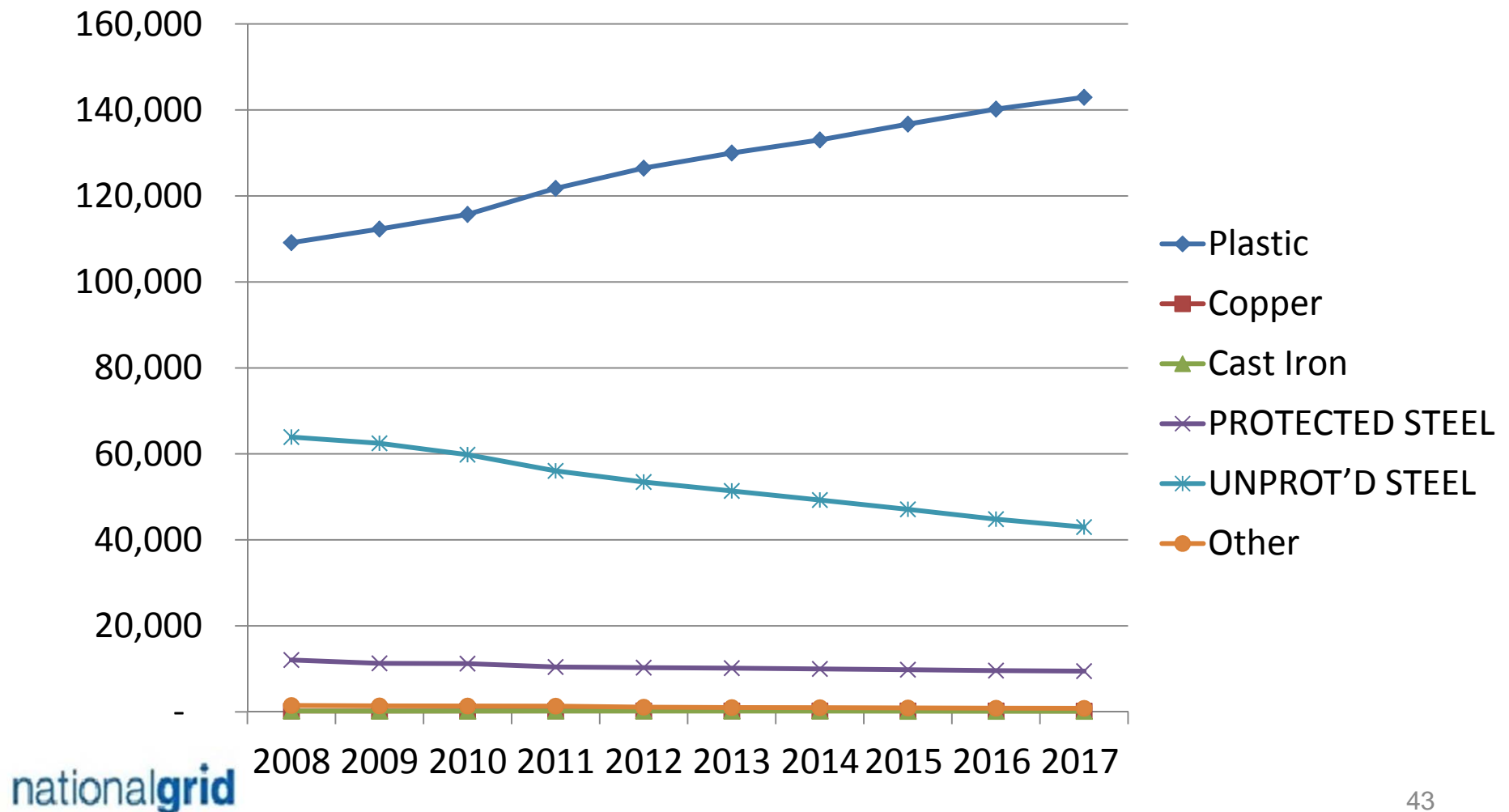


2017 SYSTEM INTEGRITY REPORT

SERVICE INVENTORY ANALYSIS

2017 SYSTEM INTEGRITY REPORT

RI SERVICE INVENTORY TREND

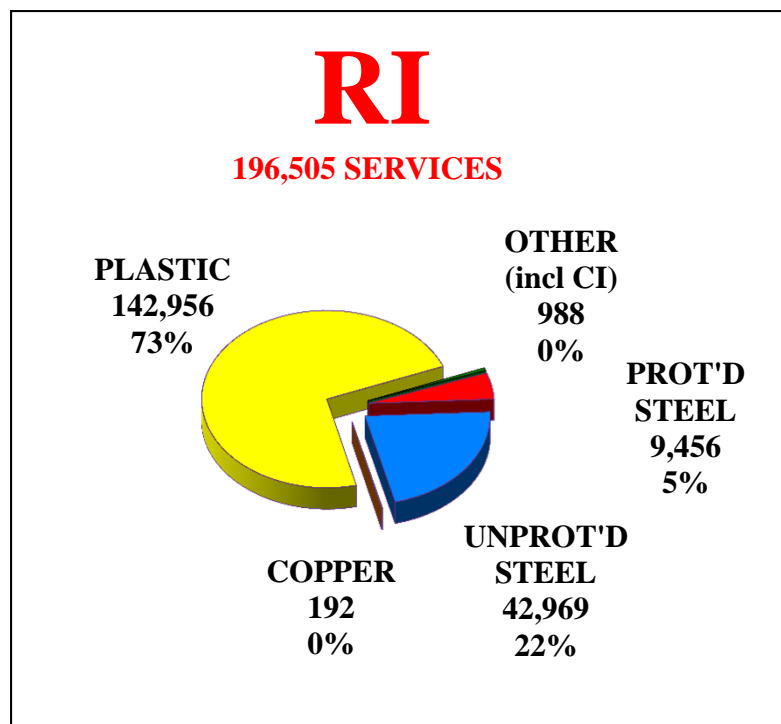


Note: See number of services breakdown in appendix (start from slide 318)

2017 SYSTEM INTEGRITY REPORT

SERVICE INVENTORY

RI



2017 SYSTEM INTEGRITY REPORT

SERVICE LEAK REPAIR ANALYSIS

NOTE: Above Ground Leaks, which are included in the DOT Reports (beginning in 2012), are excluded from this report in order to maintain the integrity of our trend analyses for distribution (not CMS) piping.

2017 SYSTEM INTEGRITY REPORT

RI

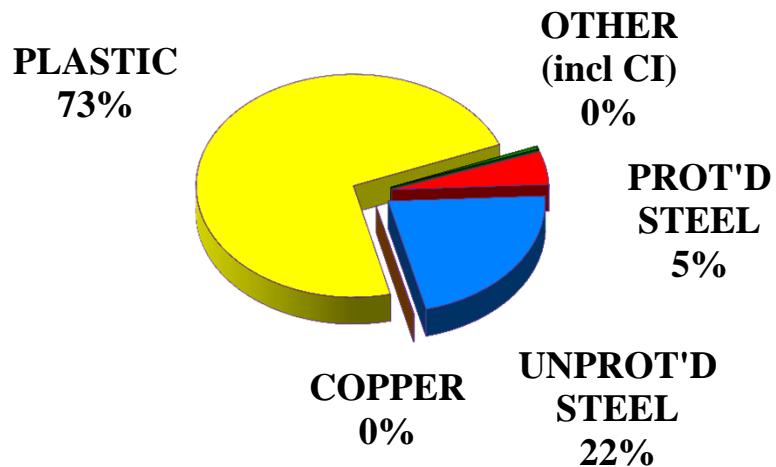
TOTAL SERVICE LEAK REPAIRS

INCLUDING Damages

TOTAL SERVICE INVENTORY

BY MATERIAL

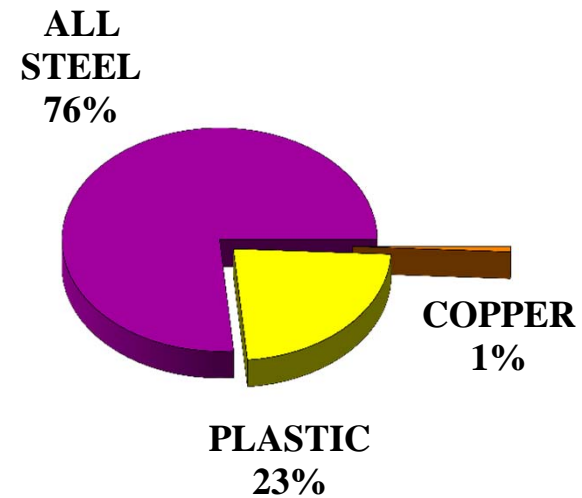
196,505 SERVICES



TOTAL SERVICE LEAK REPAIRS

BY MATERIAL

654 LEAKS

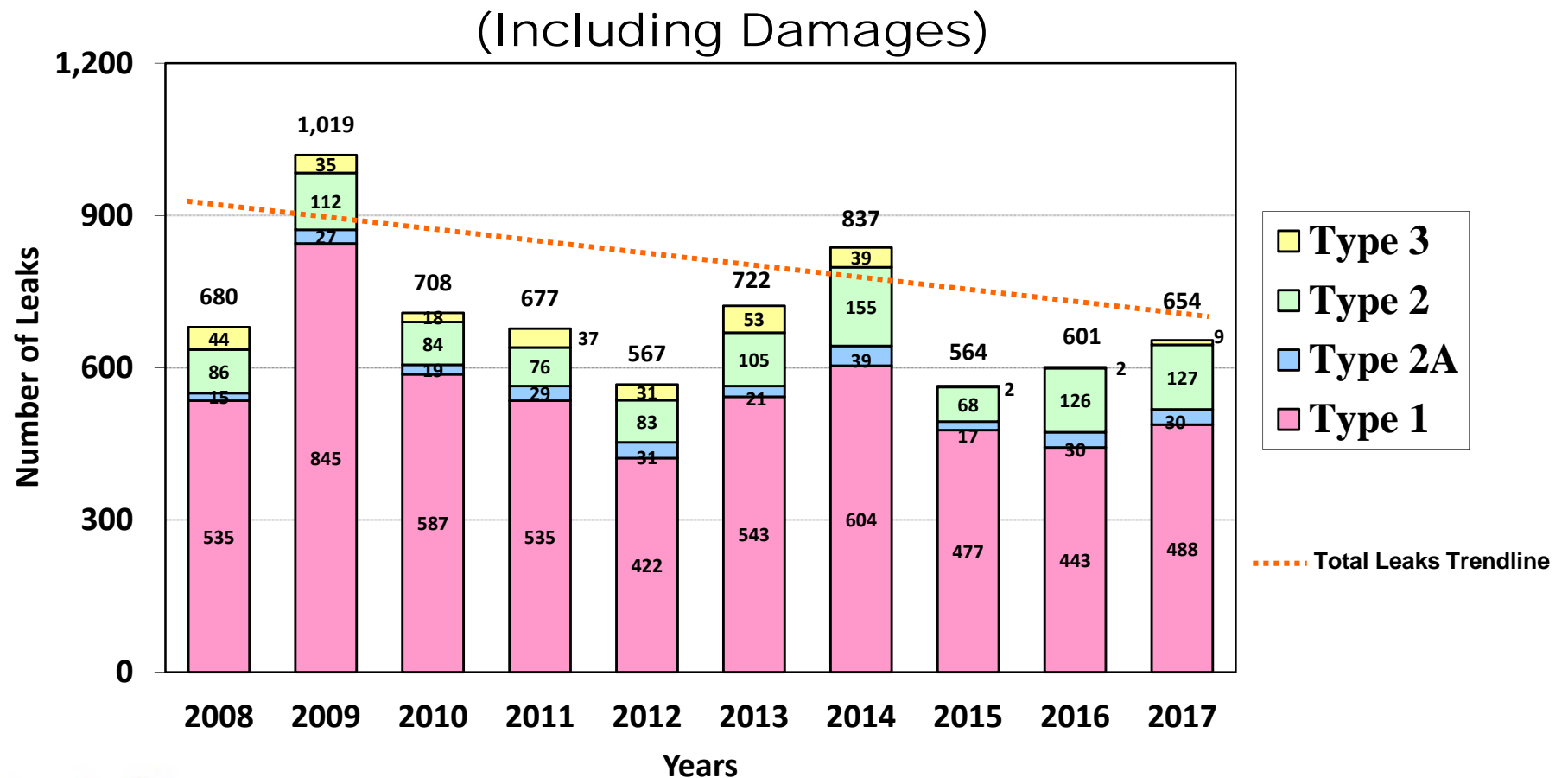


2017 SYSTEM INTEGRITY REPORT

RI

LEAKS REPAIRED By REPAIRED Type

SERVICE



2017 SYSTEM INTEGRITY REPORT

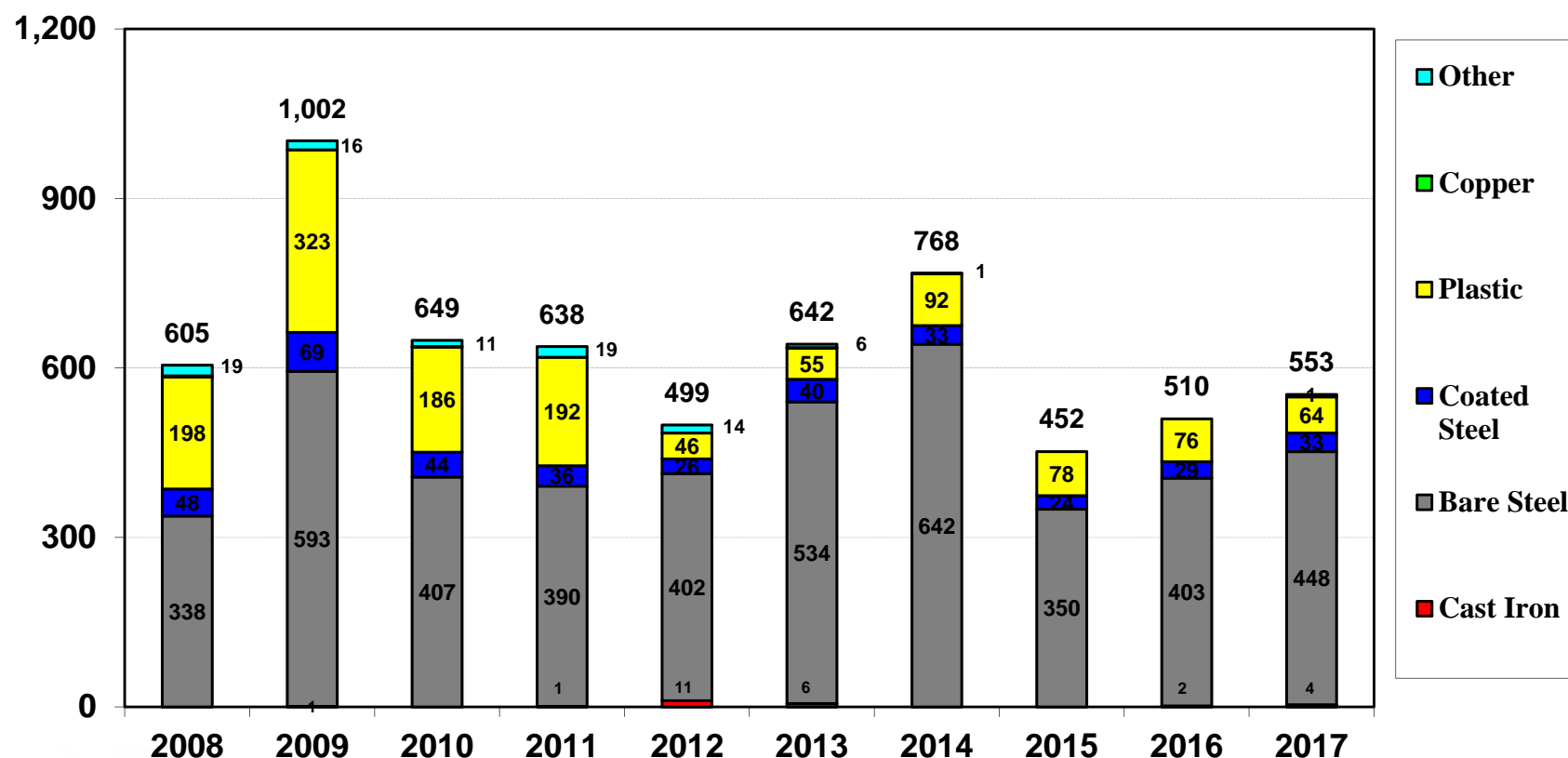
2008 -2017 SERVICE LEAK REPAIRS

All Service Leak Repairs by Material
 (Excluding Damages)

RI

NUMBER OF SVC
 LEAK REPAIRS

RI

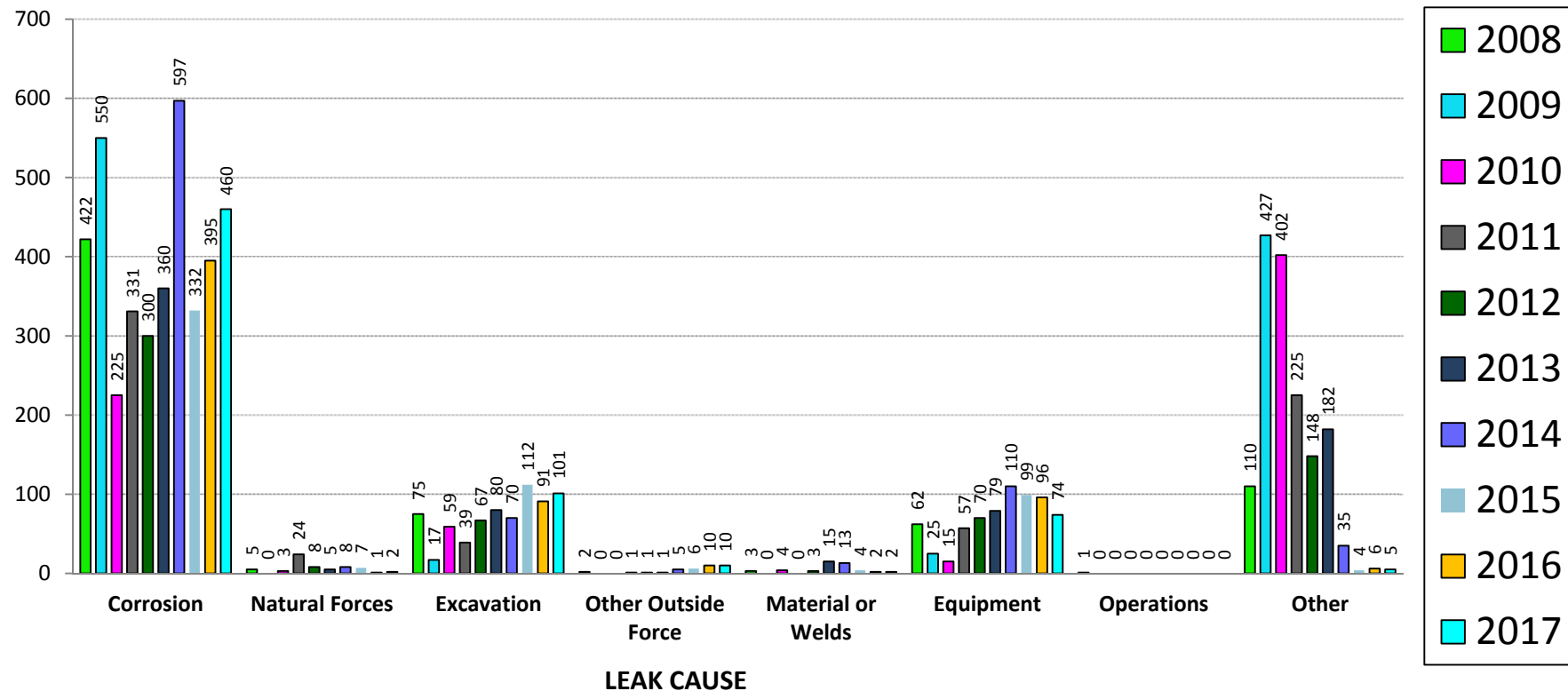


2017 SYSTEM INTEGRITY REPORT

RI

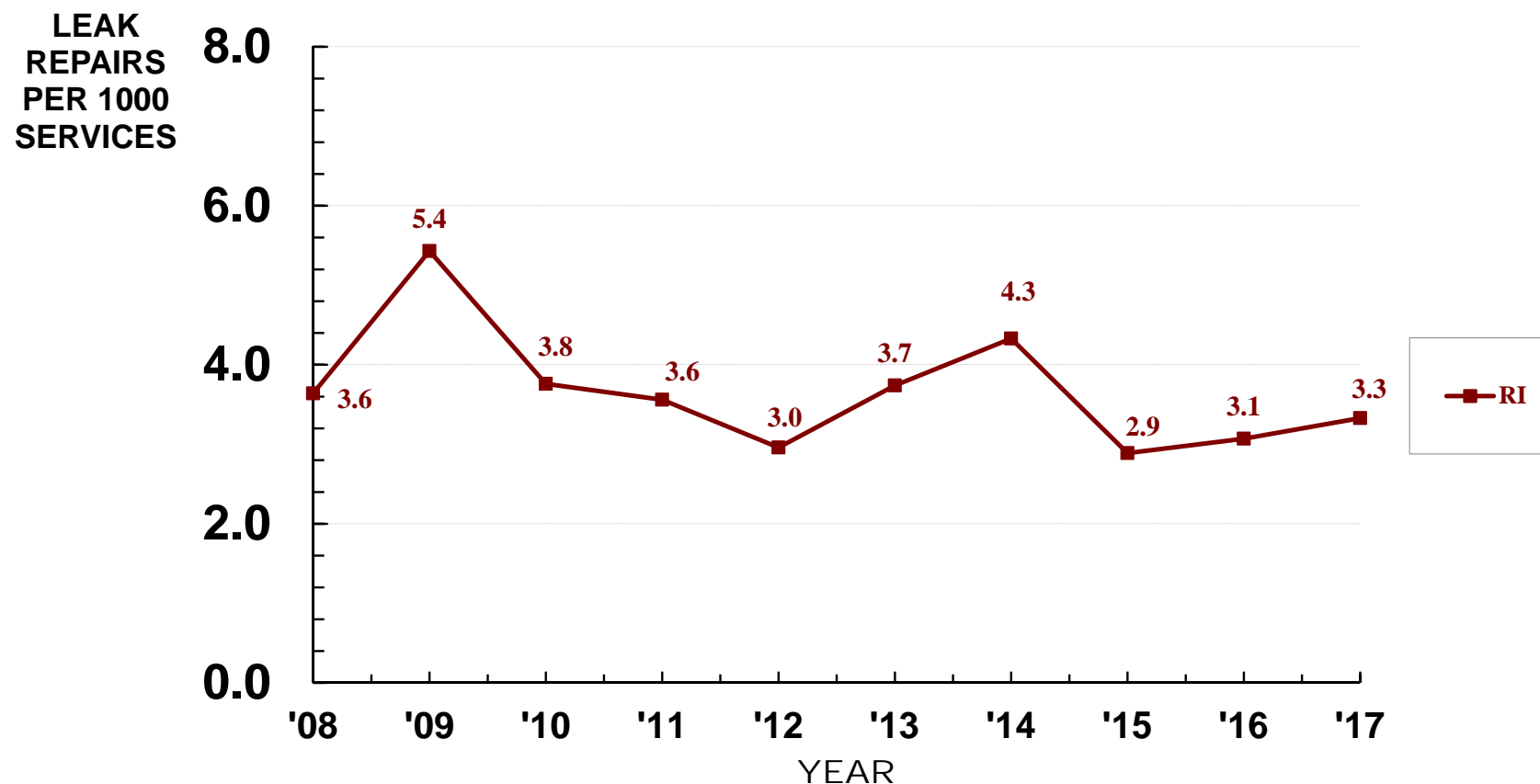
SERVICE LEAKS REPAIRED COMPARISON BY LEAK CAUSES

LEAK REPAIRS



2017 SYSTEM INTEGRITY REPORT

RI TOTAL SERVICE LEAK "RATES" INCLUDING Damages



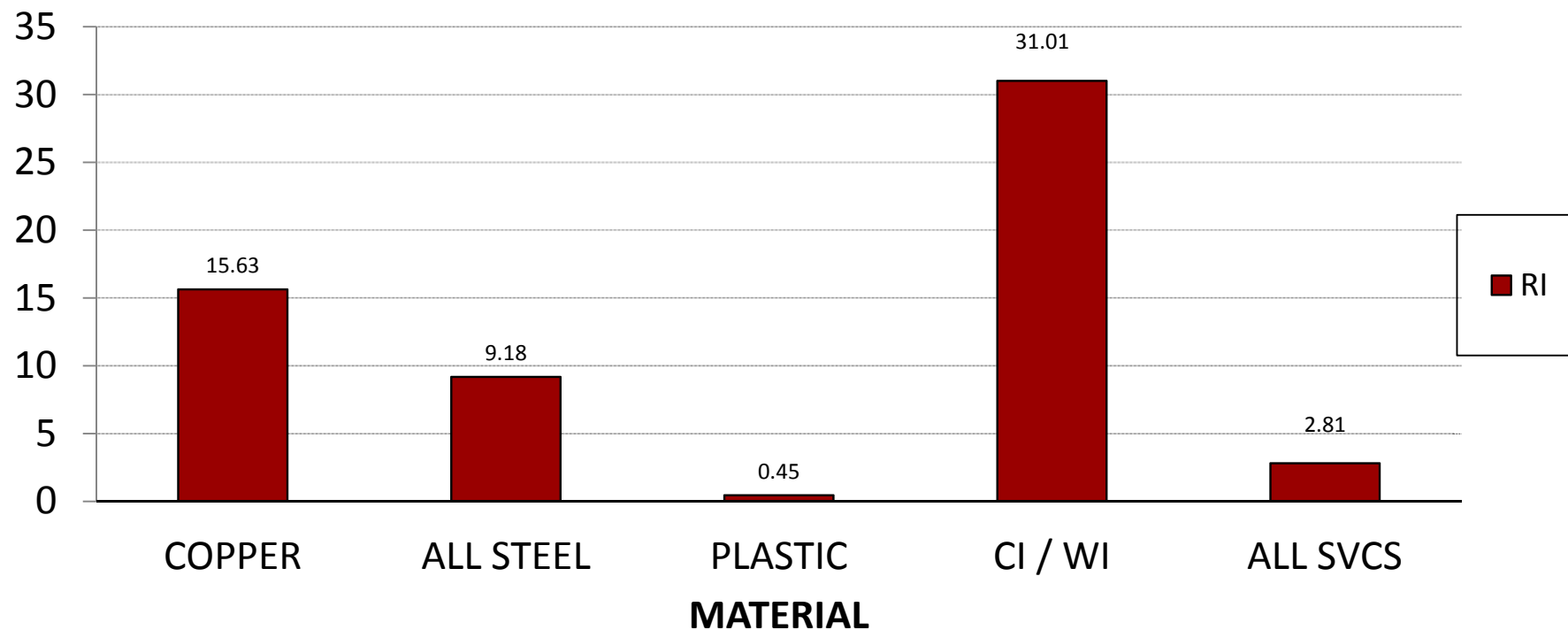
2017 SYSTEM INTEGRITY REPORT

RI

SERVICE LEAK "RATES" COMPARISON BY MATERIAL

EXCLUDING Damages

LEAK REPAIRS
PER 1000 SERVICES



2017 SYSTEM INTEGRITY REPORT

2017 MATERIAL CAUSE MATRIX (SERVICE LEAK REPAIR)



2017 SYSTEM INTEGRITY REPORT

RI

2017 SERVICE LEAKS MATERIAL-CAUSE MATRIX

	<u>CORROSION</u>	<u>MATL/WELD</u>	<u>NAT FORCE</u>	<u>OTH OS FRC</u>	<u>EQUIPMENT</u>	<u>OPERATIONS</u>	<u>OTHER</u>	<u>DAMAGES</u>	<u>ALL CAUSES</u>
CAST IRON	1	0	2	0	1	0	0	0	4
COPPER	3	0	0	0	0	0	0	2	5
STEEL	452	0	0	0	27	0	2	15	496
BARE	429	0	0	0	17	0	2	12	460
COATED	23	0	0	0	10	0	0	3	36
PLASTIC	3	2	0	10	46	0	3	84	148
OTHER	1	0	0	0	0	0	0	0	1
ALL SVCS	460	2	2	10	74	0	5	101	654

2017 SYSTEM INTEGRITY REPORT

2016/2017 DISTRIBUTION DOT REPORT DATA COMPARISONS



2017 SYSTEM INTEGRITY REPORT

RI

		General Data Correction Explanation Needed Discussed & Approved					
2016 - 2017 DOT Comparisons		RI					
		2017		2016		Delta(17-16)	%
Main Inventory	Cast Iron	730	miles	754	miles	-24	-3%
	Reconditioned Cast Iron	0	miles	0	miles	0	N/A
	Plastic	1,476	miles	1,417	miles	+59	4%
	UP Bare Steel	224	miles	242	miles	-18	-7%
	UP Coated Steel	171	miles	175	miles	-4	-2%
	Total UP Steel	395	miles	416	miles	-22	-5%
	CP Bare Steel	0	miles	0	miles	+0	0%
	CP Coated Steel	590	miles	590	miles	-0.49	-0.1%
	Total CP Steel	590	miles	590	miles	0	0%
	Other	0	miles	0	miles	-0.01	0%
	Ductile Iron	16	miles	16	miles	-0.3	-2%
TOTAL MAIN		3,205	miles	3,193	miles	+12	0.4%
Main Leaks	Corrosion	102	repairs	85	repairs	+17	20%
	Natural Forces	26	repairs	40	repairs	-14	-35%
	Excavation	16	repairs	16	repairs	+0	0%
	Other Outside Force	1	repairs	0	repairs	+1	#DIV/0!
	Material or Welds	0	repairs	2	repairs	-2	-100%
	Equipment	58	repairs	46	repairs	+12	26%
	Operations	0	repairs	0	repairs	+0	0%
	Other	666	repairs	562	repairs	+104	19%
	TOTAL MAIN LEAKS	869	repairs	751	repairs	+118	16%
Service Inventory	Copper	192	svcs	201	svcs	-9	-4%
	Plastic	142,956	svcs	140,206	svcs	+2750	2%
	UP Bare Steel	34,701	svcs	36,227	svcs	-1526	-4%
	UP Coated Steel	8,268	svcs	8,579	svcs	-311	-4%
	Total UP Steel	42,969	svcs	44,806	svcs	-1837	-4%
	CP Bare Steel	0	svcs	0	svcs	+0	0%
	CP Coated Steel	9,456	svcs	9,585	svcs	-129	-1%
	Total CP Steel	9,456	svcs	9,585	svcs	-129	-1%
	Other	803	svcs	854	svcs	-51	-6%
	Cast Iron / Wrought Iron	129	svcs	134	svcs	-5	-4%
	TOTAL SERVICES	196,505	svcs	195,786	svcs	+719	0.4%
Service Leaks Excluding Above Ground Leaks	Corrosion	460	repairs	396	repairs	+64	16%
	Natural Forces	2	repairs	1	repairs	+1	100%
	Excavation	101	repairs	91	repairs	+10	11%
	Other Outside Force	10	repairs	10	repairs	+0	0%
	Material or Welds	2	repairs	2	repairs	+0	0%
	Equipment	74	repairs	96	repairs	-22	-23%
	Operations	0	repairs	0	repairs	+0	0%
	Other	5	repairs	5	repairs	+0	0%
	TOTAL SVC LEAKS	654	repairs	601	repairs	+53	9%
Service Leaks Including Above Ground Leaks	Corrosion	460	repairs	396	repairs	+64	16%
	Natural Forces	2	repairs	1	repairs	+1	100%
	Excavation	101	repairs	95	repairs	+6	6%
	Other Outside Force	13	repairs	10	repairs	+3	30%
	Material or Welds	2	repairs	2	repairs	+0	0%
	Equipment	74	repairs	96	repairs	-22	-23%
	Operations	0	repairs	0	repairs	+0	0%
	Other	5	repairs	5	repairs	+0	0%
	TOTAL SVC LEAKS	657	repairs	605	repairs	+52	9%
Total Leak Repairs (Main & Service) Excluding Above Ground Leak		1,523	repairs	1,352	repairs	+171	13%
Total Leak Repairs (Main & Service) Including Above Ground Leak		1,526	repairs	1,356	repairs	+170	13%
Workable Backlog As of 12/31		74	leaks	68	leaks	+6	9%
UFG (Net)		2.2%		1.8%		0	22%
Average Service Length (Ft)		66.5	ft	66.0	ft	+0.49	1%

2017 SYSTEM INTEGRITY REPORT

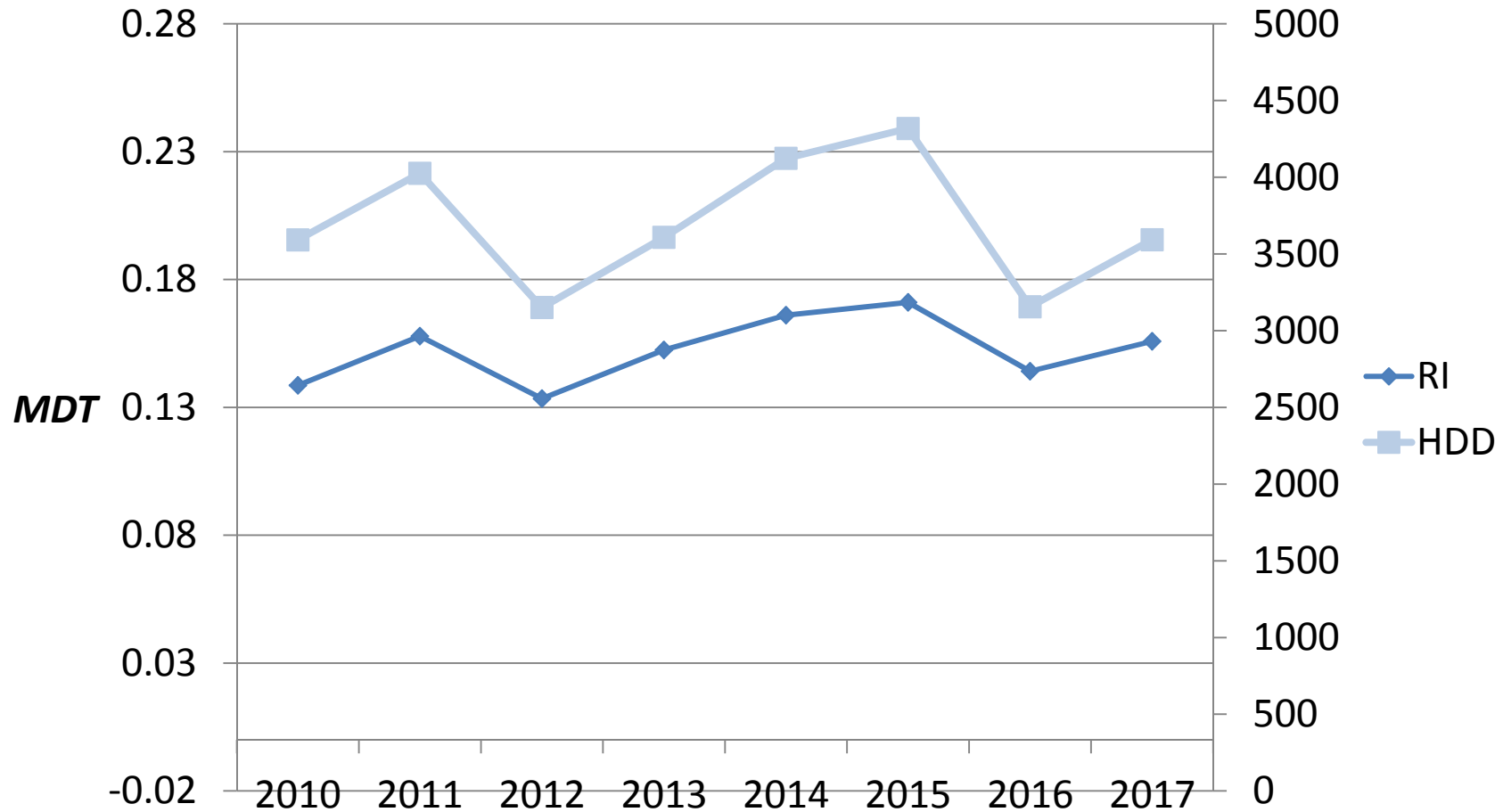
NATIONAL GRID-US 2017 GAS DISTRIBUTION SYSTEM STATISTICS



2017 SYSTEM INTEGRITY REPORT

RI

AVG. CUSTOMER USED RATE



Note:

- Customer Used = Sendout (MDT) / Total Customer (see slide 294)
- Total Customer includes Residential and Commercial
- Heating Degree Days (**HDD**)
- Million Dekatherm (**MDT**)

2017 SYSTEM INTEGRITY REPORT

2017 GAS DISTRIBUTION SYSTEM STATISTICS

STATE	LEGACY	2017 PIPELINE / CUSTOMER / SENDOUT STATISTICS								
		Miles of Main	# of Services	Avg Service Length (ft/svc)	Miles of Services	TOTAL Distribution Pipeline	Residential Customers	Commercial and Industrial Customers	TOTAL Customers	Sendout (MDT)
RHODE ISLAND		3,205	196,505	66.5	2,475	5,680	241,126	25,048	266,174	41,489

2017 GAS DISTRIBUTION SYSTEM STATISTICS

STATE	LEGACY	PERCENTAGES OF NGRID-US SYSTEM					ASSET RATIOS			GAS CONSUMPTION RATIOS			
		% of Main	% of Services	% of Distribution Pipeline	% of Customers	% of Sendout	Service Density (Svcs / Mile Main)	Meter Density (Customers / Service)	Customer Density (Customers / Mile Total Pipeline)	Main Capacities Used (Sendout MDT / Mile Main)	Service Capacities Used (Sendout MDT / Service)	Pipeline Capacities Used (Sendout MDT / Mile Total Pipe)	Customer Usage (Sendout MDT / Customer)
RHODE ISLAND		9.0%	7.5%	8.7%	7.3%	6.8%	61	1.4	46.9	12.95	0.21	7.30	0.156

CAUTION:

This chart is for comparative-illustrative purposes only. The data is not audited & many assumption have been made.

Inventory data is from the Annual DOT/PHMSA Distribution Reports.

Customer data is from the Gas Customer Data base- Active Gas Accounts

Sendout data is from the sendouts for the 12-month period used to calculate UFG for the DOT Reports.

2017 SYSTEM INTEGRITY REPORT

SEPARATE LEAK-PRONE PIPE ANALYSIS

STATE	LEGACY	2017 LEAK-PRONE PIPE INVENTORY					LEAK-PRONE PIPE %'s			
		Leak - Prone Main (miles)	% of TOTAL Main	Leak - Prone Services (#)	% of TOTAL Services	Miles of Leak - Prone Services	TOTAL Leak - Prone Pipe (in miles)	% of NG-US Leak - Prone Main (miles)	% of NG-US Leak - Prone Services (#)	% of NG-US TOTAL Leak - Prone Pipe
RHODE ISLAND		1,124	35.1%	43,290	22.0%	545	1,669	11.4%	8.2%	10.7%

LEAK AND REPAIR ANALYSIS

STATE	LEGACY	2017 LEAK DATA				LEAK RATE RATIOS					
		TOTAL Leak Receipts (Main & Service)	TOTAL Leak Repairs (Main & Service)	Year-End Workable Leak Backlog	TOTAL Repairs + Workable Leaks	TOTAL Leak Receipts / Mile TOTAL Pipe	TOTAL Leak Repairs / Mile Leak-Prone Pipe	TOTAL Leak Repairs / Mile TOTAL Pipe	TOTAL Leak Repairs / Mile Leak-Prone Pipe	Repairs + Workables / Mile TOTAL Pipe	Repairs + Workable / Mile Leak-Prone Pipe
RHODE ISLAND		1,924	1,523	74	1,597	0.3	1.2	0.3	0.9	0.3	1.0

NOTES:

Leak-Prone Main includes Cast Iron/Wrought Iron, Unprotected Steel , Aldyl-A and Other Material.
Leak-Prone Service includes Cast Iron/Wrought Iron, Copper and Unprotected Steel.

2017 SYSTEM INTEGRITY REPORT

2017 SYSTEM INTEGRITY REPORT ANALYSIS (FINDINGS AND EXPLANATIONS)



2017 SYSTEM INTEGRITY REPORT

RI

ANALYSIS OF FINDINGS AND EXPLANATIONS

FINDING 2:

RI

Total leak receipts have increased by 25% in 2017 compared to 2016, and the total Leak Repairs increased by 13%.

MAIN- Leak repairs have increased by 16% in 2017 compared to 2016. Total Cast Iron break reduced by 33%.

SERVICE- Leak repairs have increased by 9% compared to 2016. Type 1 leak repair increased by 10%, and the number of Type 3 repairs increased by over three times.

2017 SYSTEM INTEGRITY REPORT

RI LPP Replacement Projection

NE - Leak Prone Pipe Replacement																		
		2009	2010	2011	2012	2013	2014	2015	2016	2017	CY18	CY19	CY20	CY21	CY22	CY23	CY24	CY25
RI	All Programs	-	32.1	27.2	54.3	44.0	28.8	56.0	62.7	63.3	60	65	65	65	65	65	65	69
	Proactive	-	-	-	50.0	39.9	23.0	50.3	51.0	48.3	50	49.7	49.7	49.7	49.7	53.0	54	59

*Projected

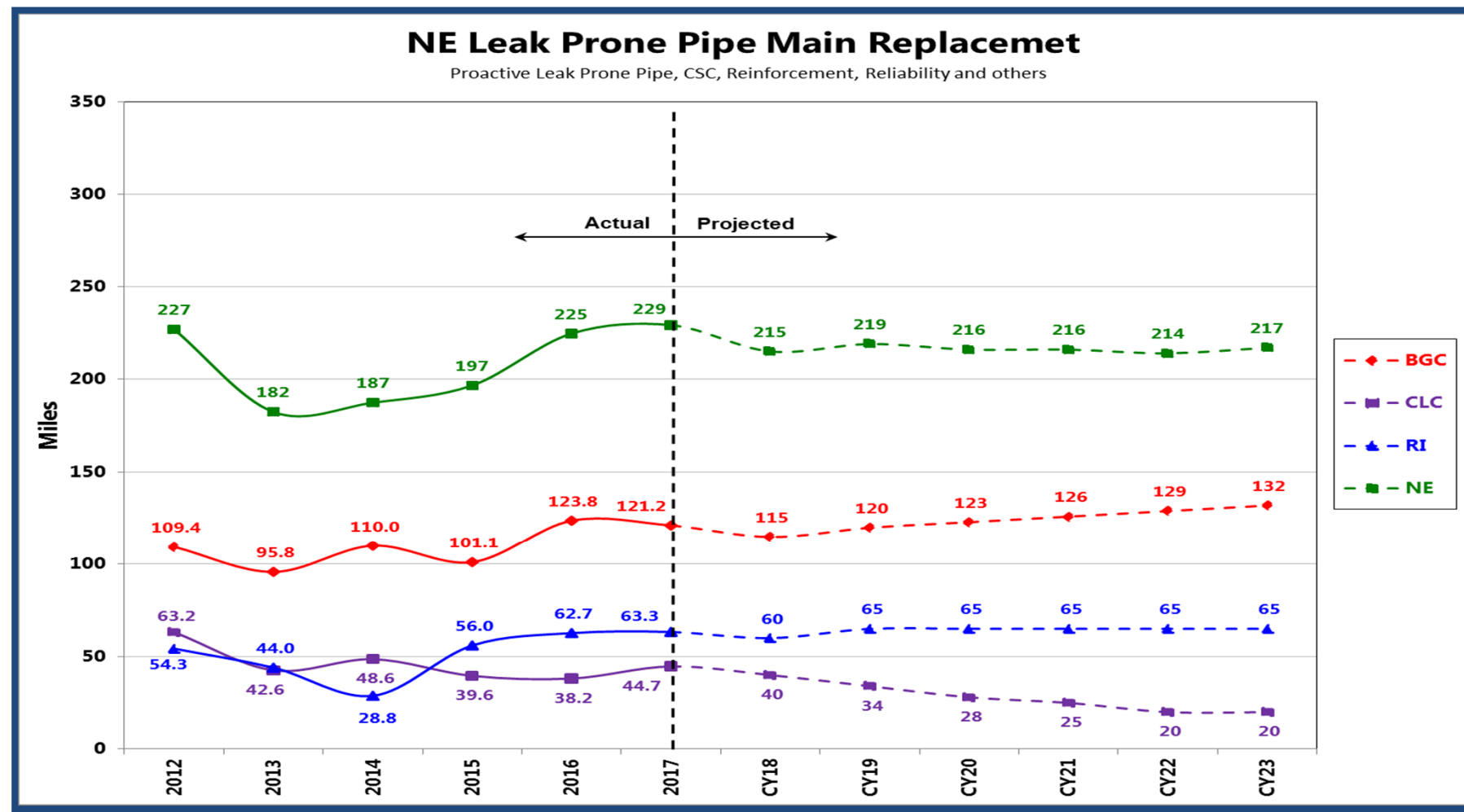
2017 SYSTEM INTEGRITY REPORT

RI Cast Iron/Unprotected Steel Ratio

NE - Cast Iron / Unprotected Steel					
Calendar Years		2014	2015	2016	2017
RI	Cast Iron	20.1	29.4	19.8	24.7
	Unp. Steel	8.7	39.5	41.0	28.5

2017 SYSTEM INTEGRITY REPORT

NE - MA & RI



2017 SYSTEM INTEGRITY REPORT

APPENDICES

2017 SYSTEM INTEGRITY REPORT

MAIN

2017 SYSTEM INTEGRITY REPORT

RI

MAIN INVENTORY (MILES)

Average Age
 Of All RI
 Distribution Main:
 44.48 Years

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Plastic	968	1,002	1,044	1,103	1,168	1,227	1,287	1,378	1,417	1,476
Cast Iron	896	885	878	875	859	831	806	769	754	730
Recond. Cast Iron	-	-	-	-	-	-	-	-	-	-
PROTECTED STEEL	578	551	601	588	597	596	595	595	590	590
UNPROT'D STEEL	664	674	592	580	534	508	483	452	416	395
Other	1	-	-	0	0	0	-	-	-	-
Ductile Iron	17	17	17	17	16	16	16	16	16	16
TOTAL MAIN	3,124	3,129	3,132	3,163	3,174	3,179	3,188	3,210	3,193	3,205

2017 SYSTEM INTEGRITY REPORT

SERVICES

2017 SYSTEM INTEGRITY REPORT

RI SERVICE INVENTORY

(NUMBER OF SERVICES)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Plastic	109,144	112,313	115,718	121,770	126,474	130,002	133,024	136,700	140,206	142,956
Copper	178	177	171	209	208	207	205	202	201	192
Cast Iron	175	168	162	194	189	185	174	137	134	129
PROTECTED STEEL	12,066	11,260	11,206	10,422	10,285	10,150	9,989	9,800	9,585	9,456
UNPROT'D STEEL	63,919	62,462	59,800	56,049	53,449	51,387	49,265	47,104	44,806	42,969
Other	1,470	1,405	1,348	1,322	1,085	1,000	958	900	854	803
TOTAL SERVICES	186,952	187,785	188,405	189,966	191,690	192,931	193,615	194,843	195,786	196,505

DOT- Reported Pipe Inventories

2017 SYSTEM INTEGRITY REPORT

END OF RI SYSTEM INTEGRITY REPORT

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-5

Request:

Referencing the 2017 System Integrity Report, Page 8 of 74, what is the "natural force damage" and "other incident cause" for Total Property Damages? What does the total cost include?

Response:

Below are the definitions for "natural force damage" and "other incident cause" provided in Form PHMSA F 7100.1-1 (rev 1-31-2017):

Natural Force Damage: "leak caused by outside forces attributable to causes NOT involving humans, such as earth movement, earthquakes, landslides, subsidence, heavy rains/floods, lightning, temperature, thermal stress, frozen components, high winds (Including damage caused by impact from objects blown by wind), or other similar natural causes. Lightning includes both damage and/or fire caused by a direct lightning strike and damage and/or fire as a secondary effect from a lightning strike in the area. An example of such a secondary effect would be a forest fire started by lightning that results in damage to a gas distribution system asset which results in an incident."

Other Cause: "leak resulting from any other cause not attributable to any of the other causes. A best effort should be made to assign a specific leak cause before choosing the Other cause category. An operator replacing a bare steel pipeline with a history of external corrosion leaks without visual observation of the actual leak, may form a hypothesis based on available information that the leak was caused by external corrosion and assign the Corrosion cause category to the leak."

Please refer to Attachment DIV 1-4 for the revised System Integrity Report at page 8 of 71, which includes the revised Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data for Total Property Damages. Below is the breakdown of the Total Property Damages and the items included in the Total Cost:

Total Property Damages

1. Excavation Damages = \$97,715
2. Other Outside Force = \$204,336
3. Other Incident Cause = \$131,028
4. Natural Force = \$58,140

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-5, page 2

Total Property Damages are calculated in accordance with the instructions provided in Form PHMSA F7000-1 (Rev. 10-2011), Accident Report – Hazardous Liquid Pipeline Systems. Categories of these total costs are set forth below:

1. Estimated cost of public and non-operator private property damage paid/reimbursed by the operator – “estimates generally include physical damage to the property of others, the cost of environmental investigation and remediation of a site not owned or operated by the operator, laboratory costs, third party expenses such as engineers or scientists, and other reasonable costs, excluding litigation and other legal expenses related to the accident.”
2. Estimated cost of operator's property damage and repairs:
 - a) Operator's property damage – “estimates generally include physical damage to the property of the operator or owner company such as the estimated installed or replacement value of the damaged pipe, coating, component, materials, or equipment due to the accident, excluding litigation and other legal expenses related to the accident.”
 - b) Cost of repair to company facilities – “the standard shall be the cost necessary to safely restore property to its predefined level of service. Property damage estimates include the cost to access, excavate, and repair the pipeline using methods, materials, and labor necessary to re-establish operations at a predetermined level. These costs may include the cost of repair sleeves or clamps, re-routing of piping, or the removal from service of an appurtenance, tank, or pipeline component. When more comprehensive repairs or improvements are justified but not required for continued operation, the cost of such repairs or replacement is not attributable to the accident. Costs associated with improvements to the pipeline or other facilities to mitigate the risk of future failures are not included.”
3. Estimated costs of operator's emergency response – “include emergency response operations necessary to return the accident site to a safe state, actions to minimize the volume of commodity released, conduct reconnaissance, identify the extent of accident impacts, and contain, control, mitigate, recover, and remove the commodity from the environment, to the maximum extent practicable. They include materials, supplies, labor, and benefits. Costs related to stakeholder outreach, media response, etc. are not to be included. The estimated costs of long-term remediation activities should be included in Environmental Remediation estimates.”

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-5, page 3

- a) "Environmental remediation includes the estimated cost to remediate a site such as those associated with engineering, scientists, laboratory costs, and the installation, operation, and maintenance of long-term recovery systems, etc."
- 4. Other costs – "include any and all costs which are not included above. Operators are to NOT use this category to report any costs which belong in cost categories separately listed above."
- 5. Cost of gas released – "includes the cost of the commodity not recovered and/or the cost of recovered commodity downgraded to a lower value or re-processed."

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-6

Request:

Referencing the 2017 System Integrity Report, Page 15 of 74, please explain trends in Grade I leaks that are trending up from 2016 to 2017. Is the reason because of the specific cycle in the leak survey system area circling around to more leak prone area or is there another cause?

Response:

The Company experienced a slight increase in Grade 1 leak receipts in 2017 compared to 2016. The following factors may have contributed to this increase:

- 1) Weather – please refer to Attachment DIV 1-4, the revised 2017 System Integrity Report, at page 5 of 71, which illustrates the correlation between Heating Degree Days (HDD) and leak receipts.
- 2) In 2017, the ratio of Company detected leaks compared to public odor calls increased when compared to 2016, which reveals that the 2017 leak survey areas were comprised of high-leak facilities.

The overall 10 year trend shows that the Grade 1 leaks have been declining year over year. Please refer to Attachment DIV 1-1 at page 13 of 71 for the 10-year trend line.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-7

Request:

Referencing the 2017 System Integrity Report, Page 17 of 74, please define "Workable" leak backlogs.

Response:

"Workable" leaks are Grade 2 and 2A gas leaks that are recognized as being non-hazardous at the time of detection, but are scheduled for repair based on federal and state code requirements.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-8

Request:

Referencing the 2017 System Integrity Report, Page 59 of 74, is there a plan to replace the remaining 16 miles of ductile iron main?

Response:

The ductile iron main is included in the Company's inventory of leak-prone pipe. Additional information regarding the plan to replace all leak-prone pipe can be found in the Company's response to Division 1-2.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-9

Request:

Referencing the 2017 System Integrity Report, Page 30 of 74, what are the types of leaks under "other" on mains and why the increase from 2015 to 2017? Also, why is there no data available for 2016?

Response:

More than 99 percent of the leaks classified under the leak cause "Other" are joint leaks on cast iron and ductile iron pipe. Factors that may contribute to the increase from 2015 to 2017 include weather and the areas identified for leak survey. Please refer to the Company's response to Division 1-4 for additional information. In addition, the age of the distribution system and rate of deterioration can contribute to variability from year to year.

Please refer to Attachment DIV 1-4 at page 27 of 71, which includes the 2016 data.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-10

Request:

Please provide details of the Southern Rhode Island Gas Expansion Project including maps, design basis/need, costs and schedule.

Response:

The Southern Rhode Island Gas Expansion Project (Project) will address several issues, including (1) maintaining minimum code required pressures, especially in light of forecasted growth; (2) increasing gas system reliability; and (3) reducing reliance on the Exeter liquefied natural gas (LNG) facility for pressure support. As discussed in the Company's fiscal year (FY) 2019 Gas Infrastructure, Safety, and Reliability (ISR) Plan approved by the Public Utilities Commission on March 8, 2018 in Docket No. 4781, the Project is needed to maintain continuous service to all customers on the Southern Rhode Island service territory distribution network during periods of peak demand (i.e., design weather conditions) while increasing capacity in an area that is currently constrained. The Company's Southern Rhode Island service territory is defined as the area supplied south of the Cranston Take Station, which includes Warwick, West Warwick, East Greenwich, Coventry, Cranston, Exeter, Kingston, Narragansett, North Kingstown, South Kingstown, Scituate, Wakefield, West Greenwich, and West Kingston. More than 30,000 customers¹ in this part of the Company's service territory are served by almost 600 miles of distribution infrastructure, including approximately 77 miles of distribution main operating at pressures 99 pounds per square inch gauge (psig) and above.

The results of the growth analysis performed on the gas distribution network predicts that for the 2022/23 winter, using the current Gas Supply sendout forecast, approximately 3,750 customers could experience below minimum design pressures and be at risk of losing service if design conditions were experienced. The estimated restoration cost (i.e., relight, plus claims) for such an event is estimated at approximately \$6.5 million, based on an estimated cost of \$1,750 per customer. Moreover, many commercial customers seeking to expand existing and new operations in the Southern Rhode Island region, such as in and around Quonset Point, cannot be served without this project. The Company's Southern Rhode Island service territory is unique because there are fewer interstate pipelines than other areas in National Grid's service territory. Thus, the Company relies on LNG for pressure support at warmer temperatures as compared with other parts of its service territory, which traditionally rely on LNG only for peak shaving on design days. The additional capacity from the Project should reduce reliance on the Exeter LNG facility for pressure support. As each phase of this Project is completed, unsold capacity could be considered as a reduction in dependence at the Exeter LNG facility because the need for pressure support would be reduced.

¹ This number includes end-user distribution residential, commercial, and retail customers.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-10, page 2

Therefore, the Project will allow for continued growth in the Southern Rhode Island service territory and will maintain adequate system pressure, above minimum design, to prevent the loss of service to customers. Without the Project, if growth continues as expected, by the 2022/2023 winter the Company may have to impose a moratorium on new service connections, or up to 3,750 customers could see below minimum pressures and would be at risk of losing service. In addition, several regulator station inlet pressures are predicted to fall below minimum, which would cause problems on the downstream pressure systems if the stations cannot maintain their outlet set pressure.

The Project involves the installation of approximately 28,500 linear feet of 20-inch distribution main with a maximum allowable operating pressure of 200 psig. The Project will commence at the existing 200 psig distribution main in Warwick and travels down Route 2 to the South Country Trail in East Greenwich. The Project is located entirely within the limits of Route 2, a Rhode Island Department of Transportation right of way, within the municipalities of Warwick, West Warwick, and East Greenwich. The new distribution main will be placed in-service in phases, with normal operation at 99 psig and the potential to operate at 200 psig once a district regulator station is installed in the future in East Greenwich. Based on current forecasts, each segment will add immediate growth capacity. Once all of the segments are completed, it is expected that approximately 1,100 dekatherms per hour of additional capacity will be available. The Project will also require work on existing regulator and take stations in FY 2021. Installation of a new regulator station will be required subsequent to the installation of the distribution main. Timing and location of the new regulator station is under review.

The Project will be constructed primarily using the open-cut method of construction. This technique involves installing the new distribution main typically in approximately 20-foot lengths at a time. Work required to join the sections of pipe (welding, radiography, and coating) will predominantly be performed in the trench. If bending of the pipe is needed, it will be completed using a pipe-bending machine prior to being lowered into the trench. Installation of fittings for offsets may be installed in the trench or in sections at grade and lowered into the trench for joining to the newly installed distribution main. As the work-day proceeds, newly installed distribution main will be backfilled and compacted, and pavement will be restored.

The footprint for trench excavation will typically be four feet wide by five feet deep. In locations where welding will be performed or where the proposed distribution main will pass under existing utilities, the excavated area will be larger, typically 10 feet long by 6 feet wide and up to 8 feet deep, to accommodate a shoring box. The shoring boxes will be required approximately every 40 to 80 feet along the proposed distribution main. Once excavated, the trench will be sheeted and shored as required by soil conditions, Occupational Safety and Health Administration (OSHA) safety rules, and state and local regulations. Shoring is designed to

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-10, page 3

permit passage of traffic adjacent to the trench and will allow for the trench to be covered with a steel plate to allow traffic over the trench during non-working hours.

The distribution main portion of the Project is expected to be installed in several phases. The duration of each phase is still being developed, but currently the Company is anticipating constructing the Project in three phases as follows:

Activity	Time Period
Phase 1	
Contractor Mobilization	Late March 2019
Receipt of Materials (Phase 1)	Early April, 2019
Construction Start Phase 1 - 12,600 feet	Mid-April 2019
Construction Tie in	November 1, 2019
Restoration	Throughout construction and concluding in December 2019
Contractor Demobilization	December 2019
Phase 2	
Receipt of Materials (Phases 2 and 3)	March 2020
Construction Start Phase 2 - 11,000 feet	Early April 2020
Construction Tie in	November 1, 2020
Restoration	Throughout construction and concluding in December 2020
Contractor Demobilization	December 2020
Phase 3	
Construction Start Phase 3 - 3,000 feet	Early April 2021
Construction Tie in	November 1, 2021
Restoration	Throughout construction and concluding in December 2021
Contractor Demobilization	December 2021

An aerial map depicting the Company's current construction schedule for Phases 1, 2, and 3 is included as Attachment DIV 1-10.

The estimated cost for constructing Phase 1 is \$47.62 million, as set forth in the proposed FY 2020 Gas ISR Plan submitted to the Division of Public Utilities and Carriers on September 28, 2018. The Company is in the process of refining the estimates for Phase 1 and continuing to develop the cost estimates for constructing Phases 2 and 3 and will supplement this response with updated estimates by the end of November 2018. The Company will be filing a Siting

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-10, page 4

Report with the Rhode Island Energy Facility Siting Board (EFSB) later this month and will supplement this response by providing a copy of the Siting Report once filed. The Company's EFSB filing will include engineering and design plans for the project.



The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-11

Request:

Please provide project level scope, schedule and cost details that make up the various parts of the Capital Investment Plan.

Response:

Each project or program in the proposed fiscal year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan is based on historic work levels and project estimates plus any anticipated new requirements, programs, and projects, or other known factors that might impact costs in FY 2020. The proposed spending for each project or program includes the most recent cost estimates for in-progress projects, as well as initial estimates for new projects. Expected deviations from historic trends in mix, volume, and cost of work are considered.

Examples of programs that are based on unit costs include the Proactive Main and Service Replacement (i.e., leak-prone pipe) and Public Works programs. The costs for these programs are based on recent historical unit costs adjusted for inflation.

Programs forecast based on historic work levels tend to be reactive in nature, such as Reactive Leaks (including joint encapsulation), Reactive Service Replacement – Non-leak/Other, Reactive Main Replacement – Maintenance, LNG facilities blanket program, and Capital Tools and Equipment. The costs for these programs are based on the average of FY 2017 and FY 2018 actual costs adjusted for inflation for FY 2020.

Projects or programs that fall outside of routine work are based on project-specific estimates using the most recent material, labor, and overhead costs. The Southern Rhode Island Gas Expansion project is an example of a project that is based on a project-specific estimate.

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Division 1-12

Request:

Under what regulations, codes and/or by which agency/agencies are these projects mandated:

- a. corrosion system upgrades;
- b. purchased meter replacement;
- c. non-leak reactive service replacement;
- d. reactive maintenance of mains, damage/failure program.

Response:

- a. Corrosion system upgrades are required under the Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation pipeline safety standards for external corrosion control, 49 C.F.R. § 192.465(d).
- b. The Division of Public Utilities and Carriers' Standards for Gas Utilities, Master Meter Systems and Jurisdictional Propane Systems, 815-RICR-20-00-1.6(D) requires meters to be periodically tested depending on meter class. The Company reuses the meters that have not reached their end of life prior to the next required periodic test cycle. Meters that have reached their end of life within the next test cycle are retired and replaced with a new meter.
- c. Non-leak reactive service replacements are required under the PHMSA pipeline safety standards for maintenance, 49 C.F.R. §§ 192.703(b) and 192.727.
- d. Please refer to the response to part (c) above.



Robert J. Humm
Senior Counsel

December 5, 2018

VIA HAND DELIVERY & ELECTRONIC MAIL

Rhode Island Division of Public Utilities and Carriers
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

RE: National Grid's Proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan
Supplemental Response to Data Request Division 1-10

Dear Ms. Massaro:

Enclosed please find National Grid's¹ supplemental response to Division 1-10 of the Division of Public Utilities and Carriers' (Division) First Set of Data Requests in the above-referenced matter.

The enclosed supplemental response is being produced subject to the Confidentiality and Nondisclosure Agreement (NDA) between National Grid and the Division with respect to National Grid's proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan. In particular, Attachment DIV 1-10S-1 is a copy of the Company's Siting Report for the Southern Rhode Island Gas Expansion Project filed with the Rhode Island Energy Facility Siting Board (EFSB). The Siting Report contains Critical Energy Infrastructure Information (CEII) and has been submitted to the EFSB with a Motion for Protective Treatment of Confidential Information. Therefore, please do not distribute or copy the Siting Report to anyone who has not signed the Certificate of Acknowledgement to the NDA with the express consent of National Grid. For the Division's convenience, the Company is also providing a version of the Siting Report that has redacted the CEII, which is publicly available on the EFSB's website at: http://www.ripuc.org/efsb/2018_SB_6.html.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to be "RJH", with a long horizontal flourish extending to the right.

Robert J. Humm

Enclosures

cc: Leo Wold, Esq.
Al Mancini
John Bell, Division
Rod Walker, Division

¹ The Narragansett Electric Company d/b/a National Grid.

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Supplemental
Division 1-10

Request:

Please provide details of the Southern Rhode Island Gas Expansion Project including maps, design basis/need, costs and schedule.

Response:

The Southern Rhode Island Gas Expansion Project (Project) will address several issues, including (1) maintaining minimum code required pressures, especially in light of forecasted growth; (2) increasing gas system reliability; and (3) reducing reliance on the Exeter liquefied natural gas (LNG) facility for pressure support. As discussed in the Company's fiscal year (FY) 2019 Gas Infrastructure, Safety, and Reliability (ISR) Plan approved by the Public Utilities Commission on March 8, 2018 in Docket No. 4781, the Project is needed to maintain continuous service to all customers on the Southern Rhode Island service territory distribution network during periods of peak demand (i.e., design weather conditions) while increasing capacity in an area that is currently constrained. The Company's Southern Rhode Island service territory is defined as the area supplied south of the Cranston Take Station, which includes Warwick, West Warwick, East Greenwich, Coventry, Cranston, Exeter, Kingston, Narragansett, North Kingstown, South Kingstown, Scituate, Wakefield, West Greenwich, and West Kingston. More than 30,000 customers¹ in this part of the Company's service territory are served by almost 600 miles of distribution infrastructure, including approximately 77 miles of distribution main operating at pressures 99 pounds per square inch gauge (psig) and above.

The results of the growth analysis performed on the gas distribution network predicts that for the 2022/23 winter, using the current Gas Supply sendout forecast, approximately 3,750 customers could experience below minimum design pressures and be at risk of losing service if design conditions were experienced. The estimated restoration cost (i.e., relight, plus claims) for such an event is estimated at approximately \$6.5 million, based on an estimated cost of \$1,750 per customer. Moreover, many commercial customers seeking to expand existing and new operations in the Southern Rhode Island region, such as in and around Quonset Point, cannot be served without this project. The Company's Southern Rhode Island service territory is unique because there are fewer interstate pipelines than other areas in National Grid's service territory. Thus, the Company relies on LNG for pressure support at warmer temperatures as compared with other parts of its service territory, which traditionally rely on LNG only for peak shaving on design days. The additional capacity from the Project should reduce reliance on the Exeter LNG facility for pressure support. As each phase of this Project is completed, unsold capacity could

¹ This number includes end-user distribution residential, commercial, and retail customers.

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Supplemental
Division 1-10, page 2

be considered as a reduction in dependence at the Exeter LNG facility because the need for pressure support would be reduced.

Therefore, the Project will allow for continued growth in the Southern Rhode Island service territory and will maintain adequate system pressure, above minimum design, to prevent the loss of service to customers. Without the Project, if growth continues as expected, by the 2022/2023 winter the Company may have to impose a moratorium on new service connections, or up to 3,750 customers could see below minimum pressures and would be at risk of losing service. In addition, several regulator station inlet pressures are predicted to fall below minimum, which would cause problems on the downstream pressure systems if the stations cannot maintain their outlet set pressure.

The Project involves the installation of approximately 28,500 linear feet of 20-inch distribution main with a maximum allowable operating pressure of 200 psig. The Project will commence at the existing 200 psig distribution main in Warwick and travels down Route 2 to the South Country Trail in East Greenwich. The Project is located entirely within the limits of Route 2, a Rhode Island Department of Transportation right of way, within the municipalities of Warwick, West Warwick, and East Greenwich. The new distribution main will be placed in-service in phases, with normal operation at 99 psig and the potential to operate at 200 psig once a district regulator station is installed in the future in East Greenwich. Based on current forecasts, each segment will add immediate growth capacity. Once all of the segments are completed, it is expected that approximately 1,100 dekatherms per hour of additional capacity will be available. The Project will also require work on existing regulator and take stations in FY 2021. Installation of a new regulator station will be required subsequent to the installation of the distribution main. Timing and location of the new regulator station is under review.

The Project will be constructed primarily using the open-cut method of construction. This technique involves installing the new distribution main typically in approximately 20-foot lengths at a time. Work required to join the sections of pipe (welding, radiography, and coating) will predominantly be performed in the trench. If bending of the pipe is needed, it will be completed using a pipe-bending machine prior to being lowered into the trench. Installation of fittings for offsets may be installed in the trench or in sections at grade and lowered into the trench for joining to the newly installed distribution main. As the work-day proceeds, newly installed distribution main will be backfilled and compacted, and pavement will be restored.

The footprint for trench excavation will typically be four feet wide by five feet deep. In locations where welding will be performed or where the proposed distribution main will pass under existing utilities, the excavated area will be larger, typically 10 feet long by 6 feet wide and up to 8 feet deep, to accommodate a shoring box. The shoring boxes will be required

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
 Responses to Division's First Set of Data Requests
 Issued October 29, 2018

Supplemental
Division 1-10, page 3

approximately every 40 to 80 feet along the proposed distribution main. Once excavated, the trench will be sheeted and shored as required by soil conditions, Occupational Safety and Health Administration (OSHA) safety rules, and state and local regulations. Shoring is designed to

permit passage of traffic adjacent to the trench and will allow for the trench to be covered with a steel plate to allow traffic over the trench during non-working hours.

The distribution main portion of the Project is expected to be installed in several phases. The duration of each phase is still being developed, but currently the Company is anticipating constructing the Project in three phases as follows:

Activity	Time Period
Phase 1	
Contractor Mobilization	Late March 2019
Receipt of Materials (Phase 1)	Early April, 2019
Construction Start Phase 1 - 12,600 feet	Mid-April 2019
Construction Tie in	November 1, 2019
Restoration	Throughout construction and concluding in December 2019
Contractor Demobilization	December 2019
Phase 2	
Receipt of Materials (Phases 2 and 3)	March 2020
Construction Start Phase 2 - 11,000 feet	Early April 2020
Construction Tie in	November 1, 2020
Restoration	Throughout construction and concluding in December 2020
Contractor Demobilization	December 2020
Phase 3	
Construction Start Phase 3 - 3,000 feet	Early April 2021
Construction Tie in	November 1, 2021
Restoration	Throughout construction and concluding in December 2021
Contractor Demobilization	December 2021

An aerial map depicting the Company's current construction schedule for Phases 1, 2, and 3 is included as Attachment DIV 1-10.

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's First Set of Data Requests
Issued October 29, 2018

Supplemental
Division 1-10, page 4

The estimated cost for constructing Phase 1 is \$47.62 million, as set forth in the proposed FY 2020 Gas ISR Plan submitted to the Division of Public Utilities and Carriers on September 28, 2018. The Company is in the process of refining the estimates for Phase 1 and continuing to

develop the cost estimates for constructing Phases 2 and 3 and will supplement this response with updated estimates by the end of November 2018. The Company will be filing a Siting Report with the Rhode Island Energy Facility Siting Board (EFSB) later this month and will supplement this response by providing a copy of the Siting Report once filed. The Company's EFSB filing will include engineering and design plans for the project.

Supplemental Response:

Please refer to confidential Attachment DIV 1-10S-1 for a copy of the Siting Report filed with the EFSB on November 19, 2018. Please note that the Siting Report contains Critical Energy Infrastructure Information (CEII) and has been submitted to the EFSB with a Motion for Protective Treatment of Confidential Information. Therefore, please do not distribute or copy the Siting Report. The public version of the Siting Report, which has redacted the CEII, is available on the EFSB's website at: http://www.ripuc.org/efsb/2018_SB_6.html.

Please refer to Attachment DIV 1-10S-2 for a summary of the Company's updated construction cost estimate for the Project.

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan

Responses to Division's First Set of Data Requests

Issued October 29, 2018

Attachment DIV 1-10S-1

REDACTED

The public version of the Siting Report (Attachment DIV 1-10S-1), which has redacted the CEII, is available on the EFSB's website at: http://www.ripuc.org/efsb/2018_SB_6.html

The Narragansett Electric Company
Proposed Gas ISR Plan
Southern Rhode Island Gas Expansion Project
Construction Cost Estimate

Description	Units	FY 2020	FY 2021	FY 2022	Total	Description
Main Installation:						
Phase 1	12,625	\$ 39,922,433			\$ 39,922,433	
Phase 2	11,050		\$ 32,035,812		\$ 32,035,812	
Phase 3	2,950			\$ 9,340,486	\$ 9,340,486	
Total Main Installation	26,625	\$ 39,922,433	\$ 32,035,812	\$ 9,340,486	\$ 81,298,731	Additional detail regarding the main installation is included in the proposed ISR FY 2020 plan filing and in the 11/19/2018 EFSB filing. This estimate is based on 90% design and has an 80 percent confidence level based on identified risks and unknowns. Awarding of contract in March of 2019 is expected to contribute variability to these totals.
Regulator Station Investment:						
Cranston Take Station Upgrades				\$ 10,103,718	\$ 10,103,718	June 2017 forecasted flows and increase of Maximum Operating Pressure (MOP) from 150 psig to 200 psig through Cranston Take Station require thorough review of the existing assets. The review is to ensure the increase in gas flows, outlet pressure and velocities are mitigated to maintain safe levels and minimize noise through equipment. In addition, material verification will be performed at the station. Upgrades and replacements are anticipated for the pressure regulating equipment and associated inlet piping. Note, preliminary reviews of location were complete, however, the scope is not finalized. This effort is in progress. When finalized, the estimate will be revised accordingly.
Cowesett Regulator Station Upgrades			\$ 1,687,269		\$ 1,687,269	June 2017 forecasted flows through Cowesett Rd Regulator Station (RIS-133) require thorough review of the existing assets. The review is to ensure the increase in gas flows and velocities are mitigated to maintain safe levels and ensure that the regulator equipment has sufficient capacity to meet the increased flows projected on the system. In addition, material verification will be performed at the station. Upgrades and replacements are anticipated for the pressure regulating equipment and associated inlet piping, including adding a third layer of protection to meet current Company standards. Note, the preliminary reviews of location were complete, however, scope is not finalized. This effort is in progress. When finalized, the estimate will be revised accordingly.
New Regulator Station				\$ 5,785,034	\$ 5,785,034	A new station is proposed at the southern end of the project to reduce the pressure from an MAOP of 200 to 99 and feed back into the system. The conceptual location for the station is the intersection of Quaker Ln and South Rd. Preliminary engineering to determine the land requirements was complete. A proposed location has not been identified. Once identified, the scope and engineering will be finalized. June 2017 forecasted flows do not require installation before FY 2022. The current estimate is included in this summary for informational purposes.
Total - Regulator Station Investment		\$ -	\$ 1,687,269	\$ 15,888,752	\$ 17,576,021	
Other Upgrades/Investment:						
Launcher/Receiver				\$ 5,697,882	\$ 5,697,882	Once the new pipeline operates at an MAOP of 200 psig, periodic in line inspection will need to occur. This will require a launcher at the beginning of the 20" section and receiver at the future reg station. The current estimate is included in this summary for informational purposes.
MOP Increase from 150 to 200 psi		\$ 4,536,978			\$ 4,536,978	Material testing funding to increase MOP of 27,578 feet of main in Cranston and West Warwick. Verification excavations will include Non-Destructive Testing of the pipelines chemical and mechanical properties. This will establish Fit-for-Service of the pipeline for the proposed operating conditions. Additional testing will be required for the Cowesett Regulator Station. Awarding of contract in March of 2019 is expected to contribute variability to these totals.
Installation of ROV				\$ 872,760	\$ 872,760	Once the new pipeline operates at an MAOP of 200 psig, remote isolation of the new pipeline may be required. The current proposed scope is to install a remote operated valve near the existing Cowesett Rd Regulator Station. Determination of equipment and location will be conducted concurrently with scope finalization of the Cowesett Rd Regulator Station.
Total - Other Investment		\$ 4,536,978	\$ -	\$ 6,570,642	\$ 11,107,620	
Total Southern RI Gas Expansion Investment		\$ 44,459,411	\$ 33,723,081	\$ 31,799,880	\$ 109,982,372	



Robert J. Humm
Senior Counsel

December 11, 2018

VIA HAND DELIVERY & ELECTRONIC MAIL

Rhode Island Division of Public Utilities and Carriers
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

RE: National Grid's Proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan
Responses to Division Data Requests – Set 2

Dear Ms. Massaro:

Enclosed please find one copy of National Grid's¹ responses to the Division of Public Utilities and Carriers' (Division) Second Set of Data Requests in the above-referenced matter.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to be "RJH", followed by a long horizontal flourish.

Robert J. Humm

Enclosures

cc: Al Mancini, Division
John Bell, Division
Rod Walker, Division

¹ The Narragansett Electric Company d/b/a National Grid.

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-1

Request:

In reference to the response to DIV 1-2 does the Company have an isolated services program in case the main replacement does not address all services (steel, cast iron, wrought iron)?

Response:

No, the Company currently does not have a proactive service replacement program. The Company used to have a proactive replacement program of high pressure unprotected steel services with inside sets, which the Company completed two years ago. As explained in the pre-filed direct testimony of John B. Currie in the Fiscal Year 2019 Gas Infrastructure, Safety, and Reliability filing in Docket No. 4781, the Company, with concurrence from the Division of Public Utilities and Carriers, determined that the Proactive Service Replacement program overlapped with other programs and should be discontinued. Some of the information that contributed to this decision included the fact that service leak clusters are considered in the algorithm used to prioritize leak-prone pipe for replacement combined with the Reactive Leaks (Service Replacement) program that is designed to address any service requiring immediate replacement. In particular, most of the leak-prone services are connected to leak-prone mains and replaced under the Proactive Main Replacement program. Leak-prone services connected to non-leak-prone mains are replaced under the Reactive Leaks (Service Replacement) program as they develop a leak. Because there is no statistical data of high risk associated with the leak-prone services connected to non-leak-prone mains, the Company does not believe there is a need to re-initiate a proactive service replacement program.

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-2

Request:

In reference to the response to DIV 1-5 please describe the specific incidents that occurred under the "natural force damage" and "other incident cause" categories.

Response:

Natural Force Damage:

This category includes an incident initiated by a call from the Providence Fire Department regarding a fire and odor in the area of 130 Woodbury Street. The Company's investigation located a six-inch broken main, and the Company completed repair and restoration of gas service.

Other Incident Cause:

This category includes an emergency response to an uncontrolled release of gas from a 12-inch 99 psig steel pipeline at 30 Allens Avenue in Providence. The Company responded to gas control pressure alarms, numerous odor calls and other low-pressure readings. The Company's response required 59 service shutoffs. The Company completed repairs and restored service. The cause of the incident was determined to be related to construction activities by Enbridge associated with the tie-in piping for the Crary Street Gate Station.

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-3

Request:

In reference to the Company's response to DIV 1-8 please provide details on the number of leaks for ductile iron mains and services by grade, type, etc... as provided for all other material types i.e. iron, plastic and steel.

Response:

Please refer to the tables below for the requested information for ductile iron mains. The Company had no ductile iron service leaks from 2008 to 2017.

RI Ductile Iron Main Leak Rates (incl. Excavation Damages) 2008-2017			
Year	Total Leaks Reported on Ductile Iron Mains	Miles of Ductile Iron Main in Distribution System	Leaks per Mile
2008	8	17	0.47
2009	15	17	0.88
2010	10	17	0.59
2011	7	17	0.41
2012	9	16	0.56
2013	6	16	0.38
2014	3	16	0.19
2015	12	16	0.75
2016	4	16	0.25
2017	13	16	0.81

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-3, page 2

RI Ductile Iron Main Leaks by Grade (incl. Excavation Damages) 2008-2017										
	Year									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Grade										
G1	2	2	4	1	3	0	2	11	3	10
G2A	0	2	0	2	0	0	0	0	0	0
G2	2	6	2	4	2	3	0	1	1	3
G3	4	5	4	0	4	3	1	0	0	0
Total	8	15	10	7	9	6	3	12	4	13

RI Ductile Iron Main Leaks by Cause (incl. Excavation Damages) 2008-2017										
	Year									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cause										
Corrosion	0	1	2	0	0	0	0	0	0	0
Material/Weld	0	0	0	0	0	0	0	0	0	0
Natural Forces	0	0	0	0	1	0	3	0	1	6
Equipment	3	1	1	0	0	0	0	0	0	0
Operations	0	0	1	0	0	0	0	0	0	0
Other	5	13	6	7	8	6	0	12	3	6
Excavation	0	0	0	0	0	0	0	0	0	1
Total	8	15	10	7	9	6	3	12	4	13

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-4

Request:

In reference to the response to DIV 1-11 please provide additional details regarding the Proactive Main Replacement, Large Diameter, LNG, Pressure Regulation Stations and System Automation?

Response:

Please refer to Attachment DIV 2-4 for the requested information.

FY20 Proactive Plan									
Project #	Operating Division	Town	Main WO#	Project Title	Install Mileage	Abandonment Mileage	Services	Main Connections	Cost Estimate
2326	Providence	Barrington	90000194235	1-39 Mathewson Rd, BRG	0.15	0.15	5	2	\$228,509.06
2187	Providence	Barrington	90000194241	Bluff Rd, BRG	0.08	0.08	4	2	\$90,955.60
2312	Providence	Barrington	90000194248	Governor Bradford Dr, BRG	0.08	0.10	6	1	\$78,380.36
2176	Providence	Barrington	90000194256	Harbour Rd, BRG	0.09	0.09	9	1	\$99,340.44
2185	Providence	Barrington	90000194259	Nayatt Point Ct, BRG	0.06	0.06	3	1	\$62,150.77
2201	Providence	Barrington	90000194260	Read Av, BRG	0.08	0.08	8	1	\$90,101.12
2340	Providence	Barrington	90000194261	Tiffany Cir, BRG	0.09	0.09	6	2	\$102,000.58
2144	Providence	Bristol	90000194262	573-744 Hope St, BST	0.43	0.43	48	3	\$884,173.11
2088	Providence	Coventry	90000194264	Wisteria Dr, COV	0.60	0.60	29	6	\$639,687.00
1689	Providence	Cranston	90000175438	Pontiac Av, CRA	0.53	0.98	56	11	\$1,285,330.12
2068	Providence	Cranston	90000185644	Wayland Av, CRA	0.27	0.27	28	6	\$507,693.79
2270	Providence	Cranston	90000194267	656-766 Park Av, CRA	0.34	0.34	31	11	\$920,569.90
2156	Providence	Cranston	90000194270	Budlong Rd, CRA	0.23	0.23	3	6	\$495,112.82
2117	Providence	Cranston	90000194273	Wheeler Av, CRA	0.38	0.38	50	1	\$408,546.49
2344	Providence	Cranston	90000196758	Irving St, CRA	0.06	0.06	10	1	\$117,273.19
1662	Providence	East Providence	90000155078	Turner Av, EPV	0.66	0.66	38	6	\$1,001,214.02
2259	Providence	East Providence	90000194300	Metacomet Av, EPV	0.35	0.44	40	3	\$389,749.43
1823	Providence	Johnston	90000175580	Vincent Dr, JOH	0.20	0.20	14	5	\$215,695.90
1763	Providence	Johnston	90000194307	Wilson Av, JOH	0.28	0.28	15	5	\$404,222.01
1970	Providence	Middletown	90000185724	Aquidneck Av, MDT	0.64	0.67	20	8	\$985,694.53
1790	Providence	Newport	90000185659	Broadway, NPR	0.31	0.34	15	7	\$698,538.82
1969	Providence	Newport	90000185661	Marchant St, NPR	0.22	0.22	26	5	\$412,638.81
1800	Cumberland	North Providence	90000175609	1223-1260 Mineral Spring Av, NPV	0.86	0.89	65	7	\$1,101,958.87
2102	Cumberland	North Providence	90000194316	East Av, NPV	0.55	0.55	46	5	\$971,473.41
2090	Cumberland	North Providence	90000194317	Ferncrest Blvd, NPV	0.18	0.18	27	1	\$259,984.58
2016	Cumberland	North Smithfield	90000194318	Morse Av, NSF	0.47	0.84	28	3	\$522,791.98
1000	Cumberland	Pawtucket	90000118459	Norton St, PAW	0.24	0.25	21	4	\$320,973.70
1980	Cumberland	Pawtucket	90000185678	West Av, PAW	0.31	0.31	26	5	\$553,913.52
2190	Cumberland	Pawtucket	90000194327	Benefit St, PAW	0.63	0.79	44	10	\$1,208,146.15
2310	Cumberland	Pawtucket	90000194330	Byron Av, PAW	0.25	0.27	36	2	\$258,511.20
2311	Cumberland	Pawtucket	90000194332	Daggett Av, PAW	0.00	0.15	14	0	\$35,767.00
1982	Cumberland	Pawtucket	90000194337	Middle St, PAW	0.28	0.52	12	3	\$283,210.14
2341	Cumberland	Pawtucket	90000194339	Norfolk Av, PAW	0.15	0.25	22	2	\$239,593.44
2107	Cumberland	Pawtucket	90000194340	Pawtucket Av, PAW	0.23	0.44	12	1	\$197,798.70
2308	Cumberland	Pawtucket	90000194341	Pine Grove St, PAW	0.14	0.14	17	2	\$173,643.28
2309	Cumberland	Pawtucket	90000194343	Rosemont Av, PAW	0.18	0.19	26	2	\$269,695.84

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan

Attachment DIV 2-4

Page 2 of 7

FY20 Proactive Plan									
Project #	Operating Division	Town	Main WO#	Project Title	Install Mileage	Abandonment Mileage	Services	Main Connections	Cost Estimate
1458	Providence	Providence	90000142519	Rounds Av, PVD	0.56	0.56	90	2	\$1,121,746.37
1526	Providence	Providence	90000142618	Charles St, PVD	0.42	0.42	43	5	\$910,153.31
1420	Providence	Providence	90000142626	392-498 Douglas Av, PVD	0.57	0.57	50	5	\$1,072,151.75
1616	Providence	Providence	90000143075	1207-1275 Elmwood Av, PVD	0.58	0.58	63	4	\$1,223,873.21
1657	Providence	Providence	90000155107	Union Av, PVD	0.35	0.35	56	5	\$756,370.88
1671	Providence	Providence	90000155245	Herbert St, PVD	0.24	0.23	16	2	\$426,876.74
1669	Providence	Providence	90000155253	Park Av, PVD	0.35	0.34	28	4	\$889,991.62
1412	Providence	Providence	90000175665	Carr St, PVD	0.27	0.27	48	4	\$605,771.18
1408	Providence	Providence	90000185682	935-973 Broad St, PVD	0.01	0.09	6	2	\$84,374.73
1835	Providence	Providence	90000185686	Admiral St, PVD	0.60	0.70	71	2	\$731,971.56
1840	Providence	Providence	90000185689	Dover Av, PVD	0.27	0.46	59	3	\$443,220.88
2021	Providence	Providence	90000185694	Sessions St, PVD	0.19	0.35	34	3	\$432,391.43
2051	Providence	Providence	90000185697	Weymouth St, PVD	0.02	0.27	13	1	\$71,330.04
2034	Providence	Providence	90000187222	Reservoir Av, PVD	0.54	0.65	13	6	\$1,096,570.34
2265	Providence	Providence	90000194349	Amherst St, PVD	0.61	0.61	67	11	\$1,264,722.24
2134	Providence	Providence	90000194351	Amy St, PVD	0.16	0.25	34	1	\$246,030.92
2248	Providence	Providence	90000194352	Basswood Av, PVD	0.64	0.63	77	5	\$1,242,503.35
2136	Providence	Providence	90000194355	Branch Av, PVD	0.48	0.48	26	4	\$1,016,833.55
1529	Providence	Providence	90000194356	Felix St, PVD	0.30	0.30	37	6	\$642,582.45
1531	Providence	Providence	90000194358	Freeman Pkwy, PVD	0.83	0.94	77	2	\$945,151.08
2124	Providence	Providence	90000194360	Garfield Av, PVD	0.31	0.38	30	1	\$356,393.29
2125	Providence	Providence	90000194361	Jenkins St, PVD	0.51	0.51	46	1	\$561,894.18
2129	Providence	Providence	90000194368	Mt. Pleasant Av, PVD	0.45	0.50	57	1	\$553,142.41
2279	Providence	Providence	90000194369	Ocean St, PVD	0.35	0.37	50	4	\$725,381.29
2299	Providence	Providence	90000194371	Sharon St, PVD	0.31	0.32	39	4	\$681,587.67
2130	Providence	Providence	90000194373	Terrace Av, PVD	0.56	0.56	63	7	\$1,138,832.10
2226	Providence	Smithfield	90000194376	Apple Valley Pkwy, SMF	0.31	0.31	21	2	\$258,080.62
2089	Providence	Smithfield	90000194377	River Rd, SMF	0.08	0.08	3	2	\$67,504.18
1217	Providence	Warren	90000155291	Meadow St, WAN	0.06	0.06	6	1	\$69,595.12
1821	Providence	Warwick	90000175759	2536-2783 W Shore Rd, WWK	0.64	0.64	16	8	\$960,873.33
1566	Providence	Warwick	90000187227	Carolyn St, WWK	0.46	0.46	44	2	\$352,595.56
2005	Providence	Warwick	90000187229	Maplewood Av, WWK	0.15	0.15	19	2	\$146,116.31
2152	Providence	Warwick	90000194380	650-814 Love Ln, WWK	0.27	0.57	6	6	\$427,178.03
2223	Providence	Warwick	90000194381	Alvin St, WWK	1.04	1.00	65	6	\$735,766.56
2222	Providence	Warwick	90000194383	Archdale Dr, WWK	0.71	0.71	37	3	\$449,460.11
2232	Providence	Warwick	90000194384	Armory Dr, WWK	0.24	0.24	19	1	\$173,607.82

FY20 Proactive Plan									
Project #	Operating Division	Town	Main WO#	Project Title	Install Mileage	Abandonment Mileage	Services	Main Connections	Cost Estimate
2217	Providence	Warwick	90000194385	Chapmans Av, WWK	0.47	0.47	31	2	\$328,939.90
2242	Providence	Warwick	90000194387	Harmony Ct, WWK	0.53	0.56	49	2	\$404,752.87
2235	Providence	Warwick	90000194388	Hazard Av, WWK	0.26	0.26	34	3	\$247,764.82
2099	Providence	Warwick	90000194389	Hill Top Dr, WWK	0.87	0.87	53	4	\$598,417.20
2008	Providence	Warwick	90000194390	Horse Neck Rd, WWK	0.52	0.52	41	2	\$373,677.57
2224	Providence	Warwick	90000194391	Hoxsie Av, WWK	0.33	0.33	30	2	\$256,274.55
2219	Providence	Warwick	90000194401	Killey Av, WWK	0.21	0.21	13	4	\$130,969.11
2230	Providence	Warwick	90000194402	Kiwanee Rd, WWK	0.53	0.53	51	3	\$418,091.70
2239	Providence	Warwick	90000194404	Lewiston St, WWK	0.08	0.08	10	1	\$77,468.48
2244	Providence	Warwick	90000194405	Marine Av, WWK	0.38	0.41	38	3	\$320,328.02
2098	Providence	Warwick	90000194407	Pawtuxet Av, WWK	0.95	0.95	59	3	\$640,797.42
2225	Providence	Warwick	90000194408	Peabody Dr, WWK	0.46	0.45	21	4	\$293,516.72
2236	Providence	Warwick	90000194411	Shamrock Dr, WWK	0.86	0.86	68	1	\$593,140.86
2233	Providence	Warwick	90000194412	Sundance St, WWK	0.23	0.23	12	1	\$152,615.28
1744	Providence	West Warwick	90000163337	Cedar Dr, WWW	0.98	0.98	64	6	\$811,873.30
2091	Providence	West Warwick	90000194420	Capron St, WWW	0.20	0.20	12	1	\$159,213.73
2092	Providence	West Warwick	90000194423	Riverdale Av, WWW	0.13	0.13	12	2	\$133,461.63
2093	Providence	West Warwick	90000194424	Winthrop Av, WWW	0.20	0.20	9	1	\$153,389.38
2345	Providence	Westerly	90000196760	Riverview Av, WLY	0.46	0.46	15	1	\$251,225.32
2245	Providence	Westerly	90000196769	79-138 Beach St, WLY	1.87	2.27	78	4	\$1,301,558.59
1684	Cumberland	Woonsocket	90000155391	Cato St, WSO	0.60	0.58	75	6	\$968,593.93
2110	Cumberland	Woonsocket	90000194428	Blackstone St, WSO	0.43	0.44	29	5	\$636,368.16
2013	Cumberland	Woonsocket	90000194429	Fairmount St, WSO	0.70	0.71	64	1	\$589,774.01
2114	Cumberland	Woonsocket	90000194432	Park Av, WSO	0.57	0.58	49	4	\$918,534.57
2161	Cumberland	Woonsocket	90000194434	Transit St, WSO	0.28	0.32	21	6	\$401,482.63

	Install Mileage	Abandonment Mileage	Cost Estimate
Totals	38.14	42.00	\$50,559,895.65

Note: Estimates based on historical costs adjusted for inflation.

Large Diameter Program

Location	Type	Scope of Work	Project Cost
Moore Street, Providence	Lining	Install approx. 1090ft of cured liner into the existing 16-inch 10 PSIG CI main on Bucklin Street	\$ 883,571
Bucklin Street, Providence	Lining	Line 1500 ft of 20" large diameter CI	\$ 2,282,100
Providence	CISBOT	Utilize cast iron sealing robot to seal joints from the inside of approximately 2,640 feet of large diameter main.	\$ 1,252,000
		Total	\$ 4,417,671

Note: Estimates based on historical experience.

LNG

Type	Location	Description	Amount
Blanket	Exeter	LNG Blanket	562
Specific	Exeter	Automatic Emergency Shutdown (AESD) System - Funding engineering and design costs	472
Specific	Exeter	Boiloff Compressor 2 Upgrade - Funding engineering and design costs	200
Specific	TBD	Address peak shaving requirements for Aquidneck Island - Engineering costs	200
		Total	1,434

Note: Blanket estimates based on 2 years of actuals plus inflation. Specific programs are high level estimates based on recent historical experience.

Pressure Regulating Facilities

Type	Location	Description	Amount
Station Replacement	East Providence	Willet @ Forbes (25 PSIG) (Construction)	865
Station Replacement	East Providence	Willet @ Forbes (5 PSIG) (Construction)	865
Station Replacement	Pawtucket	Sanford @ Myrtle St (Construction)	1,000
Station Replacement	Providence	Fountain @ Eddy (Construction)	1,000
Station Abandonment	West Warwick	East Greenwich @ Quaker Ln (Construction)	245
Station Abandonment	Warwick	Pettaconsett (Construction)	245
Station Abandonment	East Providence	Engineering Costs for future projects	175
		Holder 19 Rebuild	300
		Total	4,695

System Automation

The Narragansett Electric Company
d/b/a National Grid
In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Attachment DIV 2-4
Page 7 of 7

FY Target	Region	Location	Town	Total Cost
FY20	RI Central	Smithfield GS	Smithfield	\$100,000
FY20	RI Central	Burrillville GS	Burrillville	\$100,000
FY20	RI Central	Rosebank Prov	Providence	\$50,000
FY20	RI North	High St	Woonsocket	\$50,000
FY20	RI North	Oregon @ Manisty	Pawtucket	\$50,000
FY20	RI North	Senate @ Dagget	Pawtucket	\$50,000
FY20	RI South	Westerly GS	Westerly	\$100,000
FY20	RI South	Middle Rd	West Greenwich	\$50,000
FY20	RI South	Carol/Ocean	Newport	\$100,000
FY20	RI South	Tiverton GS	Tiverton	\$100,000
FY20	RI South	Wolcott	Newport	\$100,000
FY20	RI North	Downes	Pawtucket	\$50,000
FY20	RI North	Kepler	Pawtucket	\$50,000
FY20	RI North	Bloomfield	Pawtucket	\$50,000
FY20	RI North	North Bend	Pawtucket	\$50,000
FY20	RI North	Kenwood	Woonsocket	\$50,000
FY20	RI	System Endpoints/Accutechs/Telemetry Materials	N/A	\$98,000
			Total	\$1,198,000

Note: Funding to provide alternating current power, telemetry and/or remote control.

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Responses to Division's Second Set of Data Requests
Issued December 3, 2018

Division 2-5

Request:

Under what agreement is the Company authorized to recover the costs of the programs listed below vs. being handled through a separate rate mechanism or handled as part of the Company's overall operating expenses.

- a. corrosion system upgrades;
- b. purchased meter replacement;
- c. non-leak reactive service replacement;
- d. reactive maintenance of mains, damage/failure program.

Response:

The Company is authorized to recover the costs of these programs under R.I. Gen. Laws § 39-1-27.7.1(c) and (d). In particular, pursuant to R.I. Gen. Laws § 39-1-27.7.1(c), the Company submits an "annual infrastructure, safety, and reliability spending plan for each fiscal year and an annual rate-reconciliation mechanism that includes a reconcilable allowance for the anticipated capital investments and other spending pursuant to the annual pre-approved budget as developed in accordance with subsection (d)." Pursuant to R.I. Gen. Laws § 39-1-27.7.1(d), the Company's gas infrastructure, safety, and reliability spending plan addresses "capital spending on utility infrastructure" and "any other costs that are related to maintaining safety and reliability that are mutually agreed upon by the division and the company." With the exception of the Damage/Failure program, the Company has included the above-referenced programs in its annual gas infrastructure, safety, and reliability spending plan filings every year since the inception of the program in Fiscal Year (FY) 2012, which has been approved by the Public Utilities Commission (PUC) every year. The Damage/Failure program was first introduced and approved by the PUC in the FY 2018 Gas Infrastructure, Safety, and Reliability Plan to address critical reactive projects where the asset condition requires immediate attention. The Company is required to notify the PUC when it identifies a project that will be reported under the Damage/Failure program.

The programs referenced above relate to the capitalized costs that would not be included in the Company's operating expenses or recovered through other mechanisms

Robert J. Humm
Senior Counsel

November 16, 2018

VIA HAND DELIVERY

Rhode Island Division of Public Utilities and Carriers
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

**CONTAINS PRIVILEGED
AND CONFIDENTIAL
INFORMATION – DO
NOT RELEASE.**

RE: National Grid's Proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan
Responses to Division's Informal Requests from November 7, 2018

Dear Ms. Massaro:

Enclosed please find one copy of National Grid's¹ responses to the Division of Public Utilities and Carriers' (Division) informal requests from the November 7, 2018 meeting in the above-referenced matter.

The enclosed responses are being produced subject to the Confidentiality and Nondisclosure Agreement (NDA) between National Grid and the Division with respect to National Grid's proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan. In particular, the information provided in response to Division Informal Requests 1 and 2 are confidential and contain Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy those responses to anyone who has not signed the Certificate of Acknowledgement to the NDA with the express consent of National Grid.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to be "RJH", followed by a horizontal line.

Robert J. Humm

Enclosures

¹ The Narragansett Electric Company d/b/a National Grid.

The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan

Responses to Division's Informal Data Requests

Issued November 7, 2018

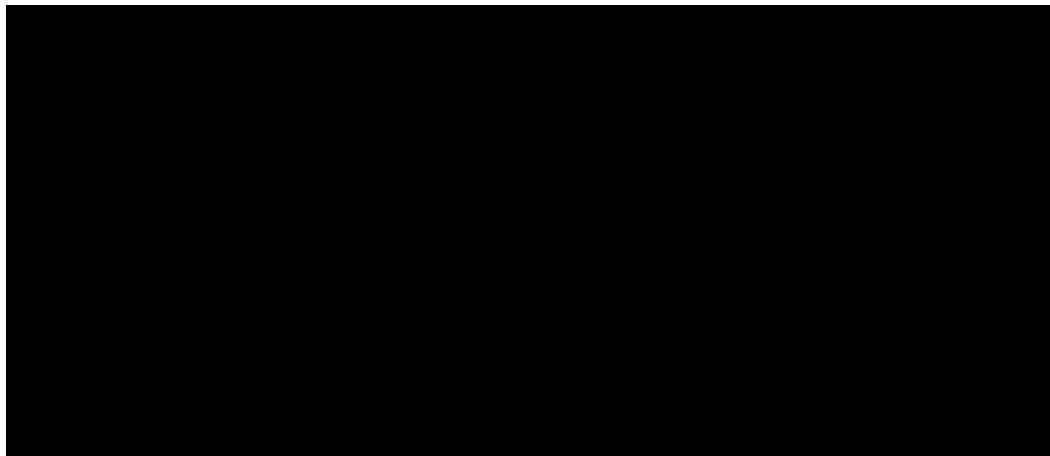
Division Informal Request 1

Request:

Please provide a list of the pressure regulator stations to be replaced and/or abandoned under the FY 2020 Gas Infrastructure, Safety, and Reliability Plan.

Response:

The requested information is set forth below. **Please note that the specific addresses of the pressure regulator stations are deemed Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy this information.**



The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan

Responses to Division's Informal Data Requests

Issued November 7, 2018

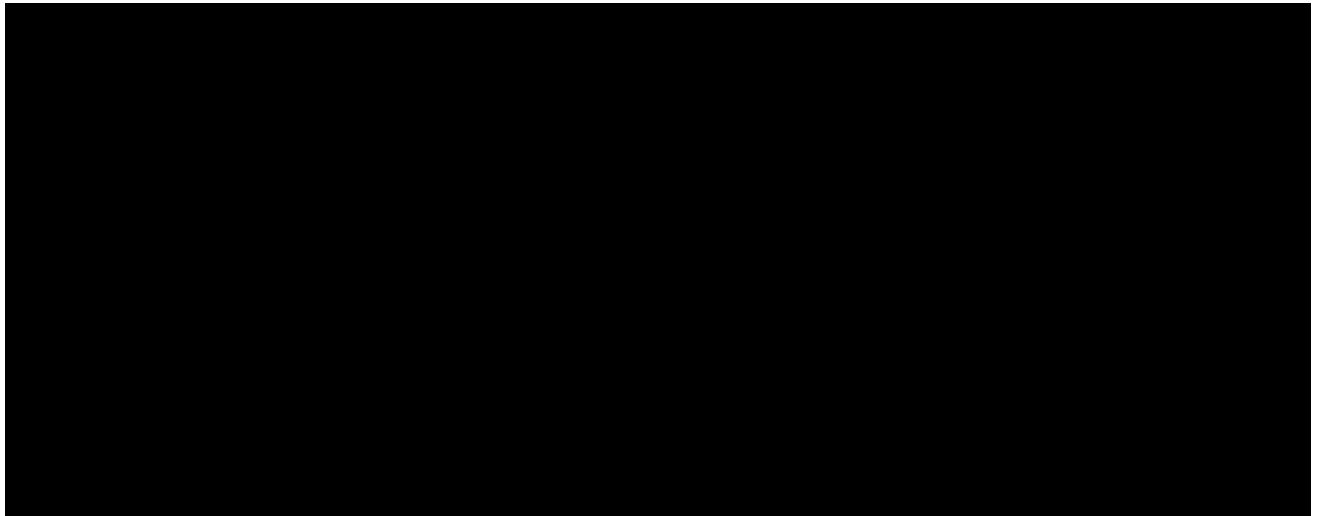
Division Informal Request 2

Request:

Please provide a list of the take stations in Rhode Island.

Response:

The requested information is set forth below. **Please note that the specific addresses of the pressure regulator stations are deemed Critical Energy Infrastructure Information (CEII). As such, please do not distribute or copy this information.**



The Narragansett Electric Company

d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan

Responses to Division's Informal Data Requests

Issued November 7, 2018

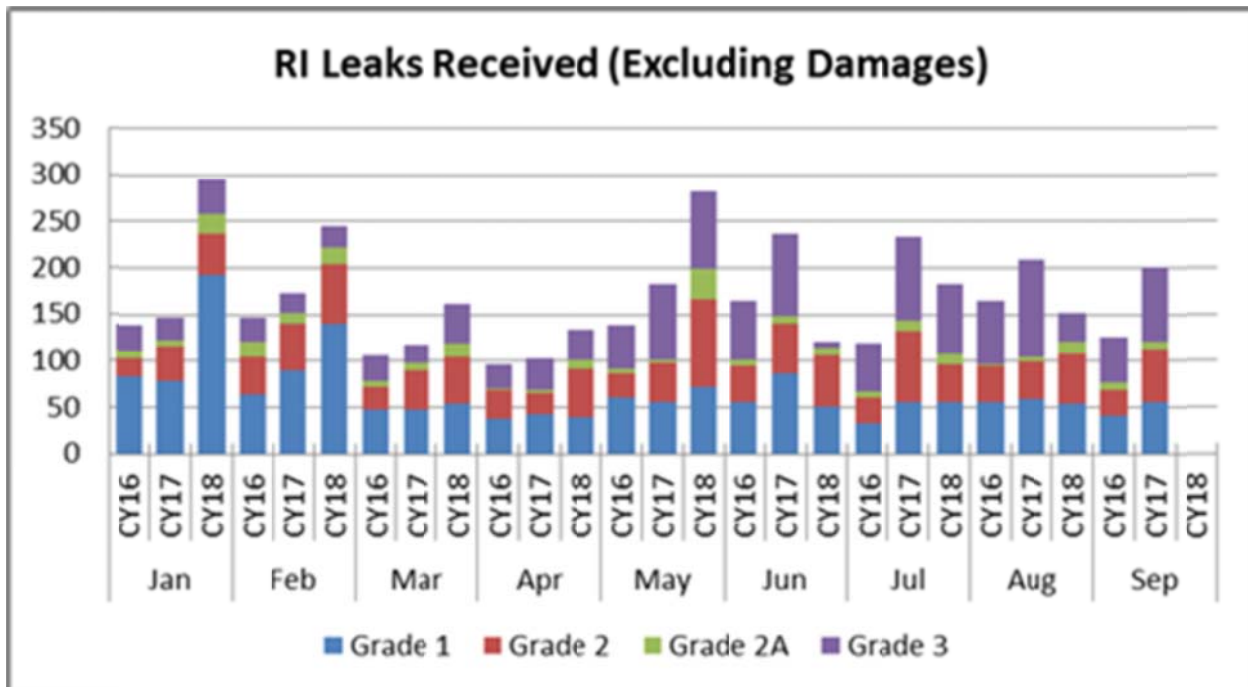
Division Informal Request 3

Request:

Please provide YTD monthly leak receipt data to compare current year activity to prior years.

Response:

Please refer to the chart below for the requested information. The Company will provide the September 2018 data as soon as it is available.





Robert J. Humm
Senior Counsel

December 18, 2018

VIA ELECTRONIC MAIL AND HAND DELIVERY

Rhode Island Division of Public Utilities and Carriers
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

RE: National Grid's Proposed Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan
Supplemental Response to Division Informal Request No. 3

Dear Ms. Massaro:

Enclosed please find National Grid's¹ supplemental response to the Division of Public Utilities and Carriers' (Division) Informal Request No. 3 from the November 7, 2018 meeting in the above-referenced matter.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to be "RJH", followed by a long horizontal flourish.

Robert J. Humm

Enclosure

cc: Leo Wold, Esq.
Christy Hetherington, Esq.
Al Mancini, Division
John Bell, Division

¹ The Narragansett Electric Company d/b/a National Grid.

The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Supplemental Responses to Division's Informal Data Requests
Issued November 7, 2018

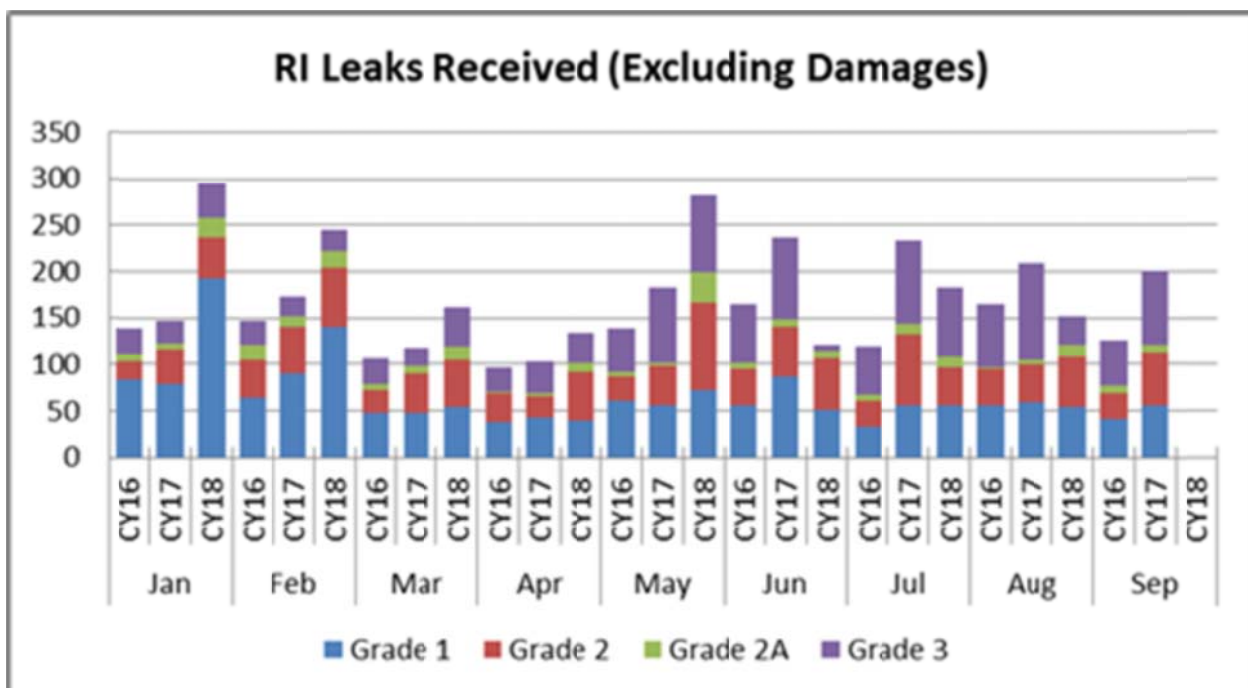
Supplemental
Division Informal Request 3

Request:

Please provide YTD monthly leak receipt data to compare current year activity to prior years.

Response:

Please refer to the chart below for the requested information. The Company will provide the September 2018 data as soon as it is available.



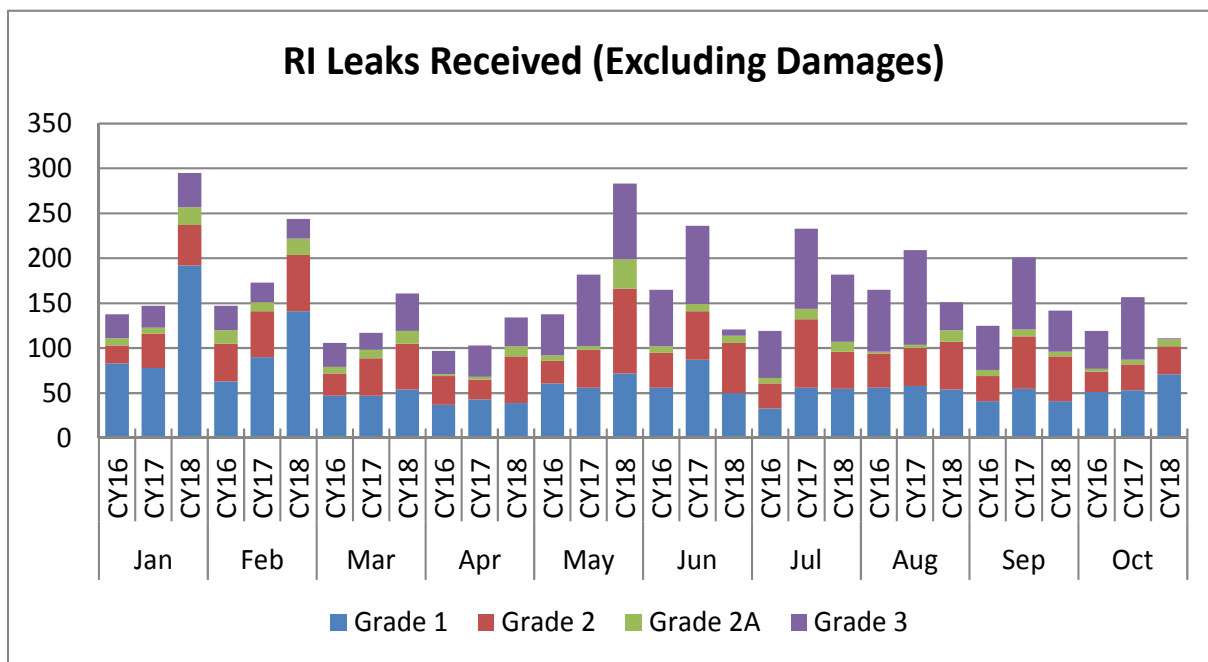
The Narragansett Electric Company
d/b/a National Grid

In Re: Division's Review of FY 2020 Proposed Gas ISR Plan
Supplemental Responses to Division's Informal Data Requests
Issued November 7, 2018

Supplemental
Division Informal Request 3

Supplemental Response:

Please refer to the chart below for the requested information updated through October of 2018.



The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

PUC 1-2

Request:

Please provide copies of minutes, if they exist, of meetings conducted between the Division of Public Utilities & Carriers and the Company on November 8, 2018, November 20, 2018, December 11, 2018, December 12, 2018 and December 13, 2018.

Response:

The Company did not create minutes for meetings held with the Division of Public Utilities and Carriers on the above-referenced dates. In lieu of meeting minutes, the Company is providing a table that lists the purpose of each meeting.

Meeting Date	Description
November 8, 2018	Field visits that included a main replacement project and various regulator stations.
November 30, 2018 (no November 20, 2018 meeting)	Review of main replacement prioritization.
December 11, 2018	Main replacement prioritization follow-up.
December 12, 2018	Review of Southern Rhode Island Gas Expansion project estimate.
December 13, 2018	Topics included leak-prone services, main prioritization, and annual leak-prone pipe abandonment miles.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 2, 2019

PUC 1-3

Request:

Please provide copies of all correspondence, including email exchanged between Division of Public Utilities & Carriers and the Company concerning the FY 2020 Gas ISR Proposal.

Response:

Please refer to Attachment PUC 1-3-1 for the requested information.

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, July 20, 2018 10:59 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: [EXTERNAL] : RE: EXT || National Grid ISR Southern RI Gas Expansion Project

We can meet here. I just included the call number in case someone can't make it to our office.

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, July 20, 2018 10:56 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: [EXTERNAL] : RE: EXT || National Grid ISR Southern RI Gas Expansion Project

Hi Al – Is this conference call only or were you thinking that some of us would meet at the Division offices?

Thanks

-----Original Appointment-----

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Friday, July 20, 2018 10:53 AM
To: Bell, John (DPUC); Schrag, Jonathan (DPUC); Lwold@riag.ri.gov; Lynch, Kevin (DPUC); Currie, John B. (Distribution Finance); Humm, Robert; Malee, Bill; Bill.Flaherty@nationalgrid.com; Stavrakas, John S.
Subject: EXT || National Grid ISR Southern RI Gas Expansion Project
When: Thursday, July 26, 2018 9:30 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 89 Jefferson Blvd

Conference Call Number 1-877-820-7831 Passcode 118005

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [[nationalgrid.com](#)]

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, November 02, 2018 11:43 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

It will be John Bell, Leo Wold, Lateef Olajide, Rod Walker(consultant) and myself. Jonathon Schrag is a maybe.

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, November 02, 2018 10:11 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Thanks Al. I am looking into it. Do you know who will be attending from the Division for our meeting on Wednesday?

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Friday, November 02, 2018 9:42 AM
To: Currie, John B. (Distribution Finance)
Subject: FW: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

John,

Here is what our consultant is looking for.

From: Rod Walker <rwalker@rwalkerconsultancy.com>
Sent: Friday, November 02, 2018 9:33 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: Re: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Al-

Really need to see a basic distribution map showing tap stations, gas mains, pressures focusing on the leak prone areas, leaks and basis for ISR plan. Details were provided in the notes part of the data request in my spreadsheet if helpful. Glad to discuss if easier. Need to see map next week to make discussion more meaningful. I'm fine with looking at a wall map.

Thanks.

Rod

Get [Outlook for Android](#) [aka.ms]

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, November 2, 2018 8:23:47 AM
To: Rod Walker
Subject: FW: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Rod,

I asked if the Company can expedite some of the data requests that we had asked for and here is their response. Would this be sufficient?

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Thursday, November 01, 2018 4:46 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Al – We will see what we can do on this. We will need a signed NDA on the maps. Rob Humm will get that process started. The question on the maps was broad and could be very extensive. Would a map of reg and take stations along with higher pressure mains meet the consultant's needs?

Thanks

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Thursday, November 01, 2018 4:06 PM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi John,

Is there anyway the Company can send over any of the Data Requests prior to our meeting next week? I think it would give our consultant a better understanding of the gas distribution system. Receiving the map would be most helpful.

Thanks

Al

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Tuesday, October 30, 2018 6:24 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: FW: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Al – Let me check and see what we have under active construction.

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Tuesday, October 30, 2018 3:54 PM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi John,

Can you try to include a tap station and/or regulator station as part of the site visits? Maybe some of the ones that are scheduled to be replaced vs. a newer station?

Whatever you can include would be great.

Thanks

Al

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Monday, October 29, 2018 10:51 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Cc: Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Al,

Here is what I am working on at this end.

11/7 ISR Review Meeting 10 to 12 at Melrose Street in Providence

11/8 Site Visits:

Morning > Focus on mains and service replacement locations

Afternoon > Focus on Allens Avenue Multi Station Rebuild and Atwells Avenue

The gas system control room work was a project focused on upgrading the telemetry system so I am not sure it would conducive to a site visit.

Let me know if this still works on your end.

Thanks,

John

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Monday, October 22, 2018 9:39 AM
To: Currie, John B. (Distribution Finance)
Cc: Bell, John (DPUC)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Sorry. Here is an idea of what he would like to see.

Site Visit Locations	General: Tap station(s), sample of district regulator stations, residential, commercial and industrial services including sample of copper, cast iron, bare steel services, rectifiers, bridge crossings and other sites the Company believes pertinent to our review.
Site Visit Locations	Specific: Atwells Avenue Main Replacement project; gas system control room, Allens Avenue Multi Station rebuild project, replacement program areas especially those in the 2020 ISR Plan and other areas the Company believe pertinent to our review.

Thanks

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Monday, October 22, 2018 9:26 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Cc: Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Thanks Al. Any details on what type of sites he would like to visit?

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Monday, October 22, 2018 9:20 AM
To: Currie, John B. (Distribution Finance)
Cc: Bell, John (DPUC)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi John,

Our Consultant is available the week of Nov. 5. He would like to come up on Nov. 6 and plans on staying for a couple of days. He would like to visit some sites as well while he is here. He is flexible that week but if we could schedule the meeting on Nov. 7 or 8 and set up a few site visits in between, that would work well for us.

Let me know if this works.

Thanks

Al

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Monday, October 22, 2018 8:08 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Al – Any updates? Were you able to talk to the consultant?

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Monday, October 15, 2018 9:34 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi John,

I will be available after 11:00 am today. I can call you then if you are available.

Thanks

Al

401-780-2125

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Monday, October 15, 2018 9:29 AM

To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi Al – Do you have any time today to discuss? Let me know. Also, please confirm what number I should call you at.

Thanks,

John

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Wednesday, October 10, 2018 10:32 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Hi John,

Sorry for the delay. The Division hired a new consultant to review the ISR Plan this year but they took a while to get him on board. Give me a call when you get a minute so we can discuss.

Thanks

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, September 28, 2018 3:51 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Ok. I was just looking to have a general discussion to get general expectations around timing and process. Let me know.

Thanks

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Friday, September 28, 2018 3:39 PM
To: Currie, John B. (Distribution Finance)
Subject: EXT || RE: [EXTERNAL] : FY 2020 Gas ISR

Sorry but I didn't realize that Monday is the October 1. I may need a few days. I'll be in touch next week.

Thanks

Al

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, September 28, 2018 3:22 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: [EXTERNAL] : FY 2020 Gas ISR

Hi Al,

You should be receiving a copy of the draft ISR today. Perhaps we can touch base on Monday to discuss next steps. I am assuming we will want to schedule a meeting similar to prior years where we discuss the plan in more detail. Sometime between 10 and 12 on 10/01 looks good for me.

Let me know.

Thanks,

John

John Currie
Director, NE Gas Capital Strategy
Office: (781) 907-2352
Cell: (617) 645-2178
Email: john.currie@nationalgrid.com

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also

contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Monday, November 05, 2018 9:18 AM
To: Currie, John B. (Distribution Finance)
Subject: EXT || FW: Gas ISR

Hi John, Can you set up a conference call in number for Jonathon?

From: Schrag, Jonathan (DPUC)
Sent: Friday, November 02, 2018 6:31 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>; Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: Gas ISR

I will try to join for the first hour.... Otherwise I will be on the telephone if they can arrange dial in capability.....
js

From: Mancini, Al (DPUC)
Sent: Friday, November 02, 2018 4:08 PM
To: Schrag, Jonathan (DPUC) <Jonathan.Schrag@dpuc.ri.gov>; Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: Gas ISR

10:00 am to noon at Melrose St. office.

From: Schrag, Jonathan (DPUC)
Sent: Friday, November 02, 2018 3:50 PM
To: Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Cc: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: Re: Gas ISR

What time?

Get [Outlook for iOS](#)

From: Bell, John (DPUC)
Sent: Friday, November 2, 2018 11:33:16 AM
To: Schrag, Jonathan (DPUC)
Cc: Mancini, Al (DPUC)
Subject: Gas ISR

Jonathan,

There is a gas ISR meeting with the Company at Melrose St. on Wednesday, Nov 7th. I'll be going along with Al Mancini, Lateef, Leo, Rod Walker. The Company would like a head count and just wanted to check if you'd be attending. Thanks.

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, November 09, 2018 11:47 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: [EXTERNAL] : RE: EXT || FW: Gas ISR

Hi John,

Here is his address.

Rod Walker & Associates
1320 Mayes Road, Toccoa, GA 30577
rwalker@rwalkerconsultancy.com

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, November 09, 2018 11:17 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: [EXTERNAL] : RE: EXT || FW: Gas ISR

Hi Al,

Can you send me an address for Rod Walker? Rob Humm informed me that any CEI responses can't be sent electronically.

Thanks,

John

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Monday, November 05, 2018 9:18 AM
To: Currie, John B. (Distribution Finance)
Subject: EXT || FW: Gas ISR

Hi John, Can you set up a conference call in number for Jonathon?

From: Schrag, Jonathan (DPUC)
Sent: Friday, November 02, 2018 6:31 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>; Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: Gas ISR

I will try to join for the first hour.... Otherwise I will be on the telephone if they can arrange dial in capability.....
js

From: Mancini, Al (DPUC)
Sent: Friday, November 02, 2018 4:08 PM
To: Schrag, Jonathan (DPUC) <Jonathan.Schrag@dpuc.ri.gov>; Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: RE: Gas ISR

10:00 am to noon at Melrose St. office.

From: Schrag, Jonathan (DPUC)
Sent: Friday, November 02, 2018 3:50 PM
To: Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Cc: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: Re: Gas ISR

What time?

Get [Outlook for iOS \[aka.ms\]](#)

From: Bell, John (DPUC)
Sent: Friday, November 2, 2018 11:33:16 AM
To: Schrag, Jonathan (DPUC)
Cc: Mancini, Al (DPUC)
Subject: Gas ISR

Jonathan,

There is a gas ISR meeting with the Company at Melrose St. on Wednesday, Nov 7th. I'll be going along with Al Mancini, Lateef, Leo, Rod Walker. The Company would like a head count and just wanted to check if you'd be attending. Thanks.

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, November 30, 2018 10:14 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

I'm here. 401-780-2125

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Friday, November 30, 2018 10:09 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Hi Al – If you have a minute I was hoping to give you call. Let me know if you are available and what number I should contact you at.

Thanks,

John

John Currie
Director, NE Gas Capital Strategy
Office: (781) 907-2352
Cell: (617) 645-2178
Email: john.currie@nationalgrid.com

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Tuesday, November 27, 2018 9:23 AM
To: Currie, John B. (Distribution Finance)
Subject: RE: EXT || RE: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

John Bell, Rod Walker, Lateef Olajide and myself.

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Tuesday, November 27, 2018 7:44 AM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: RE: EXT || RE: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Hi Al,

For the main replacement prioritization lets plan on this Friday (11/30) from 11 to 12. If you can confirm who will participate from the Division we will send out a meeting invite. Let me know.

Thanks,

John

From: Mancini, Al (DPUC) [<mailto:Al.Mancini@dpuc.ri.gov>]
Sent: Wednesday, November 21, 2018 11:14 AM
To: Currie, John B. (Distribution Finance)
Subject: EXT || RE: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Hi John,

Any of those dates would work for us.

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Monday, November 19, 2018 1:20 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Hi Al,

I had a couple of items to follow-up with you.

1. Rod has requested a meeting/call to review the Company's approach to main replacement prioritization. Are there any options that work for you on November 29th or the 30th? I was thinking an hour.
2. We would also like to look at some times for a meeting to review the Southern RI Gas Expansion project. Are there any times that work on December 4th, 5th or 7th?
3. In regards to the 2nd quarter report any thoughts on a time or date to review in December?

Let me know.

Thanks,

John

From: Scanlon, Joanne M.
Sent: Monday, November 19, 2018 10:56 AM
To: luly.massaro@puc.ri.gov (luly.massaro@puc.ri.gov)
Cc: OBrien, Celia; Humm, Robert; 'lwold@riag.ri.gov' (lwold@riag.ri.gov); 'jmunoz@riag.ri.gov' (jmunoz@riag.ri.gov); Jonathan.Schrag@dpuc.ri.gov; Bell, John (DPUC); 'Kevin Lynch'; Al.mancini@dpuc.ri.gov; 'Donna Macrae'; Richer, William R.; Little, Melissa A.; Currie, John B. (Distribution Finance); Rod Walker
Subject: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Dear Luly:

Attached is the electronic version of National Grid's responses to the Division's First Set of Data Requests in the above-referenced matter.

cc: Leo Wold, Esq.
John Bell, Division
Al Contente, Division

Thank you,

Joanne M. Scanlon
Legal Assistant
National Grid – Rhode Island
280 Melrose Street
Providence, RI 02907
401-784-7685
Joanne.scanlon@nationalgrid.com

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Monday, December 03, 2018 10:19 AM
To: Currie, John B. (Distribution Finance)
Subject: EXT || FW: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1
Attachments: Gas ISR FY2020-Responses to DIV Set 1 (R) (11-16-18)v2.pdf; 2020 Gas ISR Data Request & Responses.xlsx

John,

Here are a few follow-up questions. If you give me a call, I can explain further.

Thanks

Al
780-2125

From: Rod Walker <rwalker@rwalkerconsultancy.com>
Sent: Friday, November 30, 2018 1:54 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>; Bell, John (DPUC) <john.bell@dpuc.ri.gov>
Subject: [EXTERNAL] : FW: Gas ISR FY2020 - Responses to Division Data Requests - Set 1

Gentlemen-

Please find the attached document which summarizes the initial data request from the Division, the Company's response and a follow up response from the Division as to the completeness of the data supplied by the Company, any gaps and/or additional questions.

Let me know if you have questions or need additional information. Have a good weekend. Thanks!

Rod Walker
CEO & President
Rod Walker & Associates Consultancy
rwalker@rwalkerconsultancy.com
706-244-0894
www.rwalkerconsultancy.com [rwalkerconsultancy.com]

"We Help Companies Perform Better"

From: "Scanlon, Joanne M." <Joanne.Scanlon@nationalgrid.com>
Date: Monday, November 19, 2018 at 10:56 AM
To: "luly.massaro@puc.ri.gov (luly.massaro@puc.ri.gov)" <luly.massaro@puc.ri.gov>
Cc: "OBrien, Celia" <CELIA.OBRIEN@nationalgrid.com>, "Humm, Robert" <Robert.Humm@nationalgrid.com>, "'lwold@riag.ri.gov' (lwold@riag.ri.gov)" <lwold@riag.ri.gov>, "'jmunoz@riag.ri.gov' (jmunoz@riag.ri.gov)" <jmunoz@riag.ri.gov>, "Jonathan.Schrag@dpuc.ri.gov" <Jonathan.Schrag@dpuc.ri.gov>, "Bell, John (DPUC)" <John.Bell@dpuc.ri.gov>, "Kevin Lynch" <Kevin.Lynch@dpuc.ri.gov>, "Al.mancini@dpuc.ri.gov"

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Wednesday, December 12, 2018 1:52 PM
To: Currie, John B. (Distribution Finance)
Subject: EXT || RE: [EXTERNAL] : Gas ISR Meeting

Sounds good and you should include Rod, Leo and John.

Thanks

From: Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>
Sent: Wednesday, December 12, 2018 12:53 PM
To: Mancini, Al (DPUC) <al.mancini@dpuc.ri.gov>
Subject: [EXTERNAL] : Gas ISR Meeting

Hi Al,

I was looking at scheduling a call from 12:30 to 1:30 on Thursday. Does that work for you? Should the meeting include you, Rod, John and Leo?

Thanks,

John

John Currie
Director, NE Gas Capital Strategy
Office: (781) 907-2352
Cell: (617) 645-2178
Email: john.currie@nationalgrid.com

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

Currie, John B. (Distribution Finance)

From: Mancini, Al (DPUC) <Al.Mancini@dpuc.ri.gov>
Sent: Friday, December 14, 2018 11:01 AM
To: Currie, John B. (Distribution Finance)
Cc: Bell, John (DPUC); Christy Hetherington; Humm, Robert
Subject: EXT || National Grid ISR Division Recommendations

Hi John,

As we discussed, here are the Division's recommendations regarding the proposed Gas FY2020 ISR Plan

1. Company reported it does not have a complete risk ranked listing of its 1100 miles of leak prone pipe to use in prioritizing its main replacement program for the overall program life (17 years) which is. The annual process used is believed by the Company to find the "worst offenders" that year combining a list of pipe with leaks, field data and segments slated for Public Works projects. DIMP requirements call for distribution main segments to be evaluated and ranked by risk.
 - **Recommendation:** Company needs to have a complete list of all leak prone main segments risk ranked using pertinent data i.e. leaks, corrosion issues, pipe condition reports, wall thickness measurements, etc. The Company indicated it is moving in this direction but would be at least the end of 2019 before a new software program is available. Recommendation is to accelerate this effort to mid-year to ensure the riskiest leak prone pipe is being replaced.
2. Isolated Services-The Company does not track leak prone services that are isolated meaning they are connected to mains that are either plastic or cathodically protected steel and not a part of the Company's main replacement efforts. The Company believes it has 700-1000 services but is not sure of the number nor material type.
 - **Recommendation:** The Company needs to develop a list of isolated services, rank by risk and make a plan to replace each of these services.
3. Information for the Southern Rhode Island Project is becoming available with additional information forthcoming. Some information has been provided by the Company but this item and a review of the planning effort the Company used to develop the need for the project are still outstanding.

We can discuss further next week.

Thanks

Al

Alberico Mancini
Public Utilities Analyst V
Division of Public Utilities and Carriers
89 Jefferson Blvd.
Warwick, Rhode Island 02888
(401) 780-2125 (Phone)
(401) 941-9248 (fax)

Currie, John B. (Distribution Finance)

Subject: ISR Main Replacement Prioritization - Conference Call with RI Division
Location: WebEx

Start: Fri 11/30/2018 11:00 AM
End: Fri 11/30/2018 12:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Khan, Saadat U.
Required Attendees: Currie, John B. (Distribution Finance); Humm, Robert; 'lwold@riag.ri.gov';
'Al.mancini@dpuc.ri.gov'; 'John.Bell@dpuc.ri.gov'; 'lateef.olajide@dpuc.ri.gov';
'rwalker@rwalkerconsultancy.com'; Seetharam, Prathiba; Hogg, Corey; Finnerty, James G.

This meeting will have geospatial view of mains by material, Leaks and proposed projects. Please let us know if you like to see any other features. Thanks

-- Do not delete or change any of the following text. --

[Join Webex meeting](#)

Meeting number (access code): 592 157 768

Join from a video system or application

Dial [592157768@usnationalgrid.webex.com](tel:592157768)

You can also dial 173.243.2.68 and enter your meeting number.

Join by phone

+1-210-795-1110 US Toll

[Global call-in numbers](#)

[Can't join the meeting?](#)

If you are a host, [go here](#) to view host information.

IMPORTANT NOTICE: Please note that this Webex service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session.

Currie, John B. (Distribution Finance)

From: Khan, Saadat U.
Sent: Thursday, November 29, 2018 3:12 PM
To: Rod Walker; Currie, John B. (Distribution Finance); Humm, Robert; 'lwold@riag.ri.gov'; 'Al.mancini@dpuc.ri.gov'; 'John.Bell@dpuc.ri.gov'; 'lateef.olajide@dpuc.ri.gov'; Seetharam, Prathiba
Subject: RE: EXT || Re: GIS view of RI gas network and proposed jobs

Hi Rod,

Perfect, that was my understanding talking to you few weeks ago. We should have all you like to see. thanks

From: Rod Walker <rwalker@rwalkerconsultancy.com>
Sent: Thursday, November 29, 2018 2:51 PM
To: Khan, Saadat U. <Saadat.Khan@nationalgrid.com>; Currie, John B. (Distribution Finance) <John.Currie@nationalgrid.com>; Humm, Robert <Robert.Humm@nationalgrid.com>; 'lwold@riag.ri.gov' <lwold@riag.ri.gov>; 'Al.mancini@dpuc.ri.gov' <Al.mancini@dpuc.ri.gov>; 'John.Bell@dpuc.ri.gov' <John.Bell@dpuc.ri.gov>; 'lateef.olajide@dpuc.ri.gov' <lateef.olajide@dpuc.ri.gov>; Seetharam, Prathiba <Prathiba.Seetharam@nationalgrid.com>
Subject: EXT || Re: GIS view of RI gas network and proposed jobs

Saadat-

Thanks for reaching out. Our main objective for the Webex is to see the leak prone areas of the company (with an overlay of leaks, corrosion issues if possible) with an explanation of the methodology National Grid is using to assess the "worst offenders" and systematically replace these mains and services especially the areas being targeted for funding in the 2020 Gas ISR Plan.

I have reviewed the Gas Work Method #ENG04030 and the DIMP plan and just need to see how you put these methods and programs into action to define the highest priority areas for replacement and how that correlates to developing the projects and the dollars being requested in the 2020 Gas ISR Plan. The more we can understand about what National Grid's plan for replacing leak prone mains and services the better and should reduce the amount of questions going forward.

Hope this makes sense. Let me know if you have additional questions or need additional information. Thanks for putting this Webex together. Much appreciated.

Rod Walker
CEO & President
Rod Walker & Associates Consultancy
rwalker@rwalkerconsultancy.com
706-244-0894
www.rwalkerconsultancy.com

From: "Khan, Saadat U." <Saadat.Khan@nationalgrid.com>
Date: Thursday, November 29, 2018 at 2:06 PM

To: Rod Walker <rwalker@rwalkerconsultancy.com>, "Currie, John B. (Distribution Finance)" <John.Currie@nationalgrid.com>, "Humm, Robert" <Robert.Humm@nationalgrid.com>, "lwold@riag.ri.gov" <lwold@riag.ri.gov>, "Al.mancini@dpuc.ri.gov" <Al.mancini@dpuc.ri.gov>, "John.Bell@dpuc.ri.gov" <John.Bell@dpuc.ri.gov>, "lateef.olajide@dpuc.ri.gov" <lateef.olajide@dpuc.ri.gov>, Rod Walker <rwalker@rwalkerconsultancy.com>, "Seetharam, Prathiba" <Prathiba.Seetharam@nationalgrid.com>
Subject: GIS view of RI gas network and proposed jobs

Hi Rod,

Do you have any specific requirements to review tomorrow, just to be productive I want to make sure that we have everything you need. thanks

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page](#) or our [US Contacts Page](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations>

Currie, John B. (Distribution Finance)

From: Bell, John (DPUC) <John.Bell@dpuc.ri.gov>
Sent: Friday, September 21, 2018 9:19 PM
To: Humm, Robert
Subject: Re: [EXTERNAL] : Re: EXT || Draft NGrid Gas ISR Plan

Thanks.

From: Humm, Robert <Robert.Humm@nationalgrid.com>
Sent: Friday, September 21, 2018 7:04:43 PM
To: Bell, John (DPUC)
Subject: [EXTERNAL] : Re: EXT || Draft NGrid Gas ISR Plan

Hi John,

We plan on filing the proposed Gas ISR Plan on Friday, September 28.

Please let me know if you have any questions. Thank you.

Rob

Sent from my iPhone

On Sep 21, 2018, at 6:23 PM, Bell, John (DPUC) <John.Bell@dpuc.ri.gov> wrote:

Hi Rob,

Do you have an estimated date for the filing of the draft gas ISR plan? I'm just checking for internal planning and scheduling purposes. Thanks.

John Bell
Assistant Chief Accountant
Rhode Island Division of Public Utilities
89 Jefferson Boulevard
Warwick, RI 02888
Tel: 401-780-2144
john.bell@dpuc.ri.gov

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page \[nationalgrid.com\]](#) or our [US Contacts Page \[nationalgridus.com\]](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission.

National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations> [nationalgrid.com]

Currie, John B. (Distribution Finance)

From: Humm, Robert
Sent: Thursday, November 01, 2018 10:36 PM
To: Leo Wold
Cc: Schrag, Jonathan (DPUC); 'Spirito, John (DPUC)'; Mancini, Al (DPUC); Bell, John (DPUC)
Subject: Proposed FY 2020 Gas ISR Plan
Attachments: Confidentiality and Nondisclosure Agreement - FY20 Gas ISR (Division).doc; Certificate of Acknowledgement to Confidentiality and Nondisclosure Agreement (FY20 Gas ISR).doc

Hi Leo,

Some of the Company's responses to the Division's data requests in the above-referenced matter are expected to include confidential information. To help facilitate the Division's review, attached is a Confidentiality and Nondisclosure Agreement (NDA) and related Certificate of Acknowledgement. Please review and ask the appropriate person at the Division to sign the NDA, and have anyone at the Division who plans to review the confidential materials sign the Certificate of Acknowledgement, and return the signed materials to me.

If you have any questions, please don't hesitate to give me a call. Thank you.

Rob

Robert J. Humm
Senior Counsel
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-7415 (office)
(401) 391-9320 (cell)
(401) 784-4321 (fax)
robert.humm@nationalgrid.com

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION**

)
)
The Narragansett Electric Company)
d/b/a National Grid)
Gas Infrastructure, Safety, and Reliability Plan)
Fiscal Year 2020 Proposal)
)
)

CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT

This Confidentiality and Nondisclosure Agreement (Agreement) is entered into by and between The Narragansett Electric Company d/b/a National Grid (National Grid) and the Rhode Island Division of Public Utilities and Carriers (the Division). National Grid and the Division are sometimes each referenced herein as “Party” and collectively as “Parties” as the context requires.

WHEREAS, the Division has requested that National Grid produce certain information in response to the Division’s data requests related to National Grid’s proposed Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan;

WHEREAS, National Grid’s responses to the data requests will include documents and information that National Grid considers confidential, highly sensitive, proprietary, privileged, critical energy infrastructure information (CEII), and/or in the nature of a trade secret (the Confidential Information);

WHEREAS, National Grid wishes to prevent the Confidential Information from becoming part of the public record in the above-captioned matter, in any other proceeding before any regulatory or judicial body, or from any other public disclosure;

WHEREAS, the Parties desire to eliminate the possibility of any Confidential Information being disclosed; and

WHEREAS, the Parties desire that the sealed and public records be as complete as possible.

NOW, THEREFORE, in consideration of the promises exchanged herein, the Parties agree as follows:

1. Any Confidential Information National Grid produces to the Division relating to this proceeding shall be furnished pursuant to the terms of this Agreement, and shall be treated as confidential by all persons accorded access thereto. No person accorded access to Confidential Information by reason of this Agreement shall use such information for any purpose other than the purpose of preparation of the conduct of this proceeding, and then solely as contemplated herein. This Agreement does not preclude a Party from obtaining such Confidential Information through discovery in a subsequent proceeding and using it in a subsequent hearing. Every person accorded access to Confidential Information shall keep such Confidential Information (and all copies thereof) secure and shall not disclose it or accord access to it to any person not authorized by this Agreement.

2. The Confidential Information and the copy thereof shall be marked "Contains Privileged Information – Do Not Release" and shall be subject in all respects to the terms of this Agreement. Confidential Information that is deemed CEII shall be additionally marked "CONFIDENTIAL – Contains Critical Energy Infrastructure Information (CEII). Do Not Distribute or Copy." The Division agrees that it will accord access to the Confidential Information only to such employees, consultants, or other representatives who have agreed to

comply with the terms of this Agreement, as demonstrated by any such person executing the Certificate of Acknowledgement in the form contained in Attachment A to this Agreement. The Division agrees to make one copy of any Confidential Information for each individual who has executed the Certificate of Acknowledgement.

3. Documents to be offered at hearing may be copied as necessary for that purpose. The Division may also take notes of Confidential Information for the purpose of preparing for hearing. All copies and notes shall be treated the same as the Confidential Information and shall not be used for any purpose.

4. If the Division desires to use or place any of the contents of the Confidential Information subject to this Agreement in the public record in this proceeding or a future proceeding, then counsel for the Division shall notify counsel for National Grid as soon as practicable in advance of any such desired use. Prior to the proposed introduction of the documents, National Grid will notify the Division which portion, if any, of the Confidential Information identified should be placed in a sealed record. Documents or information, or any portion thereof, not designated to be placed in a sealed record shall be available for use in the public record. The Division may place documents in a sealed record without advance notice if it does not wish to contest that the documents contain Confidential Information.

5. This Agreement shall in no way constitute any waiver of the rights of any Party at any time to contest any assertion or to appeal any finding that certain information is or is not Confidential Information or that such information should or should not be subject to the protective requirements of this Agreement. The Parties hereto retain the right to question, challenge, and object to the admissibility of any and all Confidential Information furnished under

this Agreement on any available grounds, including, but not limited to, competency, relevancy, and materiality.

6. In the event that the Rhode Island Public Utilities Commission (PUC) should rule that any information or documents are not appropriate for inclusion in a sealed record, the Parties agree that, at the request of National Grid and to enable National Grid an opportunity to seek a stay or other relief, such information or documents will not be included in the public record until such time as National Grid has exhausted its available administrative and judicial remedies.

7. Upon completion of this proceeding, including any administrative or judicial review thereof, all Confidential Information furnished under the terms of this Agreement shall be destroyed unless the Confidential Information is made part of the public record in this proceeding, is no longer considered confidential by National Grid, or the information has been deemed not confidential by the appropriate authority. Confidential Information that is sealed and is made part of the record in this proceeding shall continue to be subject to the protective requirements of this Agreement unless the Confidential Information is made part of the public record in this proceeding by the appropriate authority consistent with the terms of this Agreement.

8. Each Party to this Agreement agrees that it will act in good faith and will not do anything to deprive the other Party of the benefit of this Agreement.

9. National Grid will identify records as “confidential” only to the extent that it holds a good faith basis for believing such treatment comports with the intent and provisions of the Access to Public Records Act, R.I. Gen. Laws § 38-2-1, *et seq.*

The Parties named below, by the signatures of their representatives, hereby enter into this Agreement as of the date last set forth below.

**THE NARRAGANSETT ELECTRIC COMPANY
D/B/A NATIONAL GRID**

By: Timothy F. Horan
Its: President – Rhode Island

Dated: _____

**RHODE ISLAND DIVISION OF
PUBLIC UTILITIES AND CARRIERS**

By:

Its:

Dated: _____

ATTACHMENT A

CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT
CERTIFICATE OF ACKNOWLEDGEMENT

I hereby certify that confidential information is being provided to me pursuant to the terms and restrictions of the Confidentiality and Nondisclosure Agreement dated November ____, 2018 (the Agreement) with respect to discovery associated with The Narragansett Electric Company d/b/a National Grid's (National Grid) proposed Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan. I also certify that I have been given a copy of that Agreement, have read its terms and conditions and agree to be bound by them. I understand that the contents of the protected materials and any notes, memoranda, computer software, software documentation, or any other forms of information regarding or derived from the protected materials shall not be disclosed to anyone other than in accordance with the Agreement and shall be used only for the purposes of the Division's review of National Grid's FY 2020 Gas ISR Plan.

I further acknowledge that in the event that I cease to be engaged in the above-referenced matter, I shall continue to be bound by the terms and conditions of the Agreement.

Signature

Print name: _____

Company name: _____

Date: _____

Consented to:

Currie, John B. (Distribution Finance)

From: Leo Wold <LWold@riag.ri.gov>
Sent: Monday, November 05, 2018 9:31 AM
To: Humm, Robert; Scanlon, Joanne M.
Subject: EXT || NGrid FY 2020 Gas ISR
Attachments: 2020 Gas ISR NDA-11022018.pdf; RW&A_NG NDA Cert.OfAck2020ISR04112018.pdf

Attached please find an executed NDA and Attachment A for the above matter.

Leo

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION**

**The Narragansett Electric Company
d/b/a National Grid
Gas Infrastructure, Safety, and Reliability Plan
Fiscal Year 2020 Proposal**

CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT

This Confidentiality and Nondisclosure Agreement (Agreement) is entered into by and between The Narragansett Electric Company d/b/a National Grid (National Grid) and the Rhode Island Division of Public Utilities and Carriers (the Division). National Grid and the Division are sometimes each referenced herein as “Party” and collectively as “Parties” as the context requires.

WHEREAS, the Division has requested that National Grid produce certain information in response to the Division's data requests related to National Grid's proposed Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan;

WHEREAS, National Grid's responses to the data requests will include documents and information that National Grid considers confidential, highly sensitive, proprietary, privileged, critical energy infrastructure information (CEII), and/or in the nature of a trade secret (the Confidential Information);

WHEREAS, National Grid wishes to prevent the Confidential Information from becoming part of the public record in the above-captioned matter, in any other proceeding before any regulatory or judicial body, or from any other public disclosure;

WHEREAS, the Parties desire to eliminate the possibility of any Confidential Information being disclosed; and

WHEREAS, the Parties desire that the sealed and public records be as complete as possible.

NOW, THEREFORE, in consideration of the promises exchanged herein, the Parties agree as follows:

1. Any Confidential Information National Grid produces to the Division relating to this proceeding shall be furnished pursuant to the terms of this Agreement, and shall be treated as confidential by all persons accorded access thereto. No person accorded access to Confidential Information by reason of this Agreement shall use such information for any purpose other than the purpose of preparation of the conduct of this proceeding, and then solely as contemplated herein. This Agreement does not preclude a Party from obtaining such Confidential Information through discovery in a subsequent proceeding and using it in a subsequent hearing. Every person accorded access to Confidential Information shall keep such Confidential Information (and all copies thereof) secure and shall not disclose it or accord access to it to any person not authorized by this Agreement.

2. The Confidential Information and the copy thereof shall be marked "Contains Privileged Information – Do Not Release" and shall be subject in all respects to the terms of this Agreement. Confidential Information that is deemed CEII shall be additionally marked "CONFIDENTIAL – Contains Critical Energy Infrastructure Information (CEII). Do Not Distribute or Copy." The Division agrees that it will accord access to the Confidential Information only to such employees, consultants, or other representatives who have agreed to

comply with the terms of this Agreement, as demonstrated by any such person executing the Certificate of Acknowledgement in the form contained in Attachment A to this Agreement. The Division agrees to make one copy of any Confidential Information for each individual who has executed the Certificate of Acknowledgement.

3. Documents to be offered at hearing may be copied as necessary for that purpose. The Division may also take notes of Confidential Information for the purpose of preparing for hearing. All copies and notes shall be treated the same as the Confidential Information and shall not be used for any purpose.

4. If the Division desires to use or place any of the contents of the Confidential Information subject to this Agreement in the public record in this proceeding or a future proceeding, then counsel for the Division shall notify counsel for National Grid as soon as practicable in advance of any such desired use. Prior to the proposed introduction of the documents, National Grid will notify the Division which portion, if any, of the Confidential Information identified should be placed in a sealed record. Documents or information, or any portion thereof, not designated to be placed in a sealed record shall be available for use in the public record. The Division may place documents in a sealed record without advance notice if it does not wish to contest that the documents contain Confidential Information.

5. This Agreement shall in no way constitute any waiver of the rights of any Party at any time to contest any assertion or to appeal any finding that certain information is or is not Confidential Information or that such information should or should not be subject to the protective requirements of this Agreement. The Parties hereto retain the right to question, challenge, and object to the admissibility of any and all Confidential Information furnished under

this Agreement on any available grounds, including, but not limited to, competency, relevancy, and materiality.

6. In the event that the Rhode Island Public Utilities Commission (PUC) should rule that any information or documents are not appropriate for inclusion in a sealed record, the Parties agree that, at the request of National Grid and to enable National Grid an opportunity to seek a stay or other relief, such information or documents will not be included in the public record until such time as National Grid has exhausted its available administrative and judicial remedies.

7. Upon completion of this proceeding, including any administrative or judicial review thereof, all Confidential Information furnished under the terms of this Agreement shall be destroyed unless the Confidential Information is made part of the public record in this proceeding, is no longer considered confidential by National Grid, or the information has been deemed not confidential by the appropriate authority. Confidential Information that is sealed and is made part of the record in this proceeding shall continue to be subject to the protective requirements of this Agreement unless the Confidential Information is made part of the public record in this proceeding by the appropriate authority consistent with the terms of this Agreement.

8. Each Party to this Agreement agrees that it will act in good faith and will not do anything to deprive the other Party of the benefit of this Agreement.

9. National Grid will identify records as “confidential” only to the extent that it holds a good faith basis for believing such treatment comports with the intent and provisions of the Access to Public Records Act, R.I. Gen. Laws § 38-2-1, *et seq.*

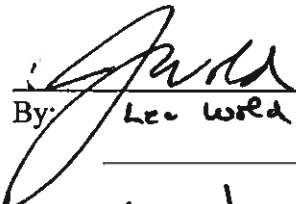
The Parties named below, by the signatures of their representatives, hereby enter into this Agreement as of the date last set forth below.

**THE NARRAGANSETT ELECTRIC COMPANY
D/B/A NATIONAL GRID**

By: Timothy F. Horan
Its: President – Rhode Island

Dated: _____

**RHODE ISLAND DIVISION OF
PUBLIC UTILITIES AND CARRIERS**

By:  _____
Leo Wred

Its: Counsel _____

Dated: 11/2/18 _____

ATTACHMENT A

CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT
CERTIFICATE OF ACKNOWLEDGEMENT

I hereby certify that confidential information is being provided to me pursuant to the terms and restrictions of the Confidentiality and Nondisclosure Agreement dated November __, 2018 (the Agreement) with respect to discovery associated with The Narragansett Electric Company d/b/a National Grid's (National Grid) proposed Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan. I also certify that I have been given a copy of that Agreement, have read its terms and conditions and agree to be bound by them. I understand that the contents of the protected materials and any notes, memoranda, computer software, software documentation, or any other forms of information regarding or derived from the protected materials shall not be disclosed to anyone other than in accordance with the Agreement and shall be used only for the purposes of the Division's review of National Grid's FY 2020 Gas ISR Plan.

I further acknowledge that in the event that I cease to be engaged in the above-referenced matter, I shall continue to be bound by the terms and conditions of the Agreement.

Rod Walker
Signature

Print name: ROD WALKER

Company name: ROD WALKER & ASSOCIATES
CONSULTANCY INC

Date: 11/4/18

Consented to:

Currie, John B. (Distribution Finance)

From: Leo Wold <LWold@riag.ri.gov>
Sent: Monday, November 05, 2018 4:02 PM
To: Humm, Robert
Subject: RE: EXT || NGrid FY 2020 Gas ISR

I have no issue. I probably won't attend, unless instructed to. I am planning to be at the Wednesday conference though

From: Humm, Robert <Robert.Humm@nationalgrid.com>
Sent: Monday, November 05, 2018 2:42 PM
To: Leo Wold <LWold@riag.ri.gov>
Subject: RE: EXT || NGrid FY 2020 Gas ISR

Hi Leo,

Just wanted to let you know that I planned on attending the site visits on Thursday for the Gas ISR – not in my role as an attorney, but just to observe. Please let me know if you have any issue with this. Also, please let me know if you would be interested in attending too.

Thank you.

Rob

Robert J. Humm
Senior Counsel
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-7415 (office)
(401) 391-9320 (cell)
(401) 784-4321 (fax)
robert.humm@nationalgrid.com

From: Leo Wold [<mailto:LWold@riag.ri.gov>]
Sent: Monday, November 05, 2018 9:31 AM
To: Humm, Robert; Scanlon, Joanne M.
Subject: EXT || NGrid FY 2020 Gas ISR

Attached please find an executed NDA and Attachment A for the above matter.

Leo

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page](#) or our [US Contacts Page](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations>

Currie, John B. (Distribution Finance)

From: Humm, Robert
Sent: Friday, November 09, 2018 2:48 PM
To: 'Leo Wold'
Subject: RE: EXT || NGrid FY 2020 Gas ISR

Hi Leo,

As some of the information the Company will be producing in response to the Division's data requests for the Gas ISR contains CEII, can you please ask anyone at the Division who will be reviewing the information to also sign the Certificate of Acknowledgement to the NDA. I believe the NDA process for CEII needs to be for each person.

Thank you.

Rob

Robert J. Humm
Senior Counsel
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-7415 (office)
(401) 391-9320 (cell)
(401) 784-4321 (fax)
robert.humm@nationalgrid.com

From: Leo Wold [mailto:LWold@riag.ri.gov]
Sent: Monday, November 05, 2018 9:31 AM
To: Humm, Robert; Scanlon, Joanne M.
Subject: EXT || NGrid FY 2020 Gas ISR

Attached please find an executed NDA and Attachment A for the above matter.

Leo

Currie, John B. (Distribution Finance)

From: Leo Wold <LWold@riag.ri.gov>
Sent: Wednesday, November 14, 2018 3:47 PM
To: Humm, Robert; Scanlon, Joanne M.
Subject: EXT || FW: [EXTERNAL] : National Grid FY 2020 Gas ISR
Attachments: RG NDA cert.pdf

Attached please find a NDA for your file.

Leo

ATTACHMENT A

CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT
CERTIFICATE OF ACKNOWLEDGEMENT

I hereby certify that confidential information is being provided to me pursuant to the terms and restrictions of the Confidentiality and Nondisclosure Agreement dated November __, 2018 (the Agreement) with respect to discovery associated with The Narragansett Electric Company d/b/a National Grid's (National Grid) proposed Fiscal Year (FY) 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan. I also certify that I have been given a copy of that Agreement, have read its terms and conditions and agree to be bound by them. I understand that the contents of the protected materials and any notes, memoranda, computer software, software documentation, or any other forms of information regarding or derived from the protected materials shall not be disclosed to anyone other than in accordance with the Agreement and shall be used only for the purposes of the Division's review of National Grid's FY 2020 Gas ISR Plan.

I further acknowledge that in the event that I cease to be engaged in the above-referenced matter, I shall continue to be bound by the terms and conditions of the Agreement.


Signature

Print name:

Ronald T. Gervatowski

Company name:

Division Consultant

Date:

Nov. 14, 2018

Consented to:

Currie, John B. (Distribution Finance)

From: Humm, Robert
Sent: Tuesday, December 18, 2018 1:56 PM
To: 'Christy Hetherington'
Subject: RE: EXT || Re: FY 2020 Gas ISR Plan

Thanks, Christy.

Rob

Robert J. Humm
Senior Counsel
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-7415 (office)
(401) 391-9320 (cell)
(401) 784-4321 (fax)
robert.humm@nationalgrid.com

From: Christy Hetherington [mailto:CHetherington@riag.ri.gov]
Sent: Tuesday, December 18, 2018 1:45 PM
To: Humm, Robert
Cc: Mancini, Al (DPUC); Bell, John (DPUC); Currie, John B. (Distribution Finance)
Subject: EXT || Re: FY 2020 Gas ISR Plan

Hi Rob:
We are circulating this internally and will get back to you as quickly as possible.
Best, Christy

From: Humm, Robert <Robert.Humm@nationalgrid.com>
Sent: Tuesday, December 18, 2018 12:59:58 PM
To: Christy Hetherington
Cc: Mancini, Al (DPUC); Bell, John (DPUC); Currie, John B. (Distribution Finance)
Subject: FY 2020 Gas ISR Plan

Hi Christy,

We are planning to file our FY 2020 Gas Infrastructure, Safety, and Reliability (ISR) Plan towards the end of the week (targeting Thursday). Typically, our filing letter and testimony summarizing the ISR Plan includes a statement regarding the level of concurrence between the Company and the Division. Below is our proposed language for the statement this year, which is consistent with language we included two years ago in John Currie's testimony for the FY 2018 filing:

"The Division has indicated general concurrence with the proposed Gas ISR Plan, including the programs and projects outlined in the Plan, and will continue to review the Plan after filing, consistent with prior Gas ISR Plan filings."

Please let me know if this statement accurately reflects the Division's concurrence with this year's Gas ISR Plan.

Thank you.

Rob

Robert J. Humm

Senior Counsel

National Grid

280 Melrose Street

Providence, RI 02907

(401) 784-7415 (office)

(401) 391-9320 (cell)

(401) 784-4321 (fax)

robert.humm@nationalgrid.com

This e-mail, and any attachments are strictly confidential and intended for the addressee(s) only. The content may also contain legal, professional or other privileged information. If you are not the intended recipient, please notify the sender immediately and then delete the e-mail and any attachments. You should not disclose, copy or take any action in reliance on this transmission.

You may report the matter by contacting us via our [UK Contacts Page](#) or our [US Contacts Page](#) (accessed by clicking on the appropriate link)

Please ensure you have adequate virus protection before you open or detach any documents from this transmission. National Grid plc and its affiliates do not accept any liability for viruses. An e-mail reply to this address may be subject to monitoring for operational reasons or lawful business practices.

For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations>

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 2, 2019

PUC 1-4

Request:

What comprises the "Other" category of leak causes, as depicted in the 2017 System Integrity Report -Schedule 1 at page 28?

Response:

The Company uses the leak cause "Other" for leaks that are the result of deterioration that are not attributed to causes such as corrosion failure; natural force damage; excavation damage; other outside force damage; pipe, weld, or joint failure; equipment failure; or incorrect operation. As a result, the majority of the "Other" leaks are attributed to cast iron bell and spigot joints, or a leak cause not covered under any of the leak cause categories as defined under the Instructions for Completing Form PHMSA F7100.1-1 (Rev 1-31-2017).

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 2, 2019

PUC 1-5

Request:

What are the costs associated with the abandonment of the three regulator stations located in East Providence, Warwick and West Warwick, as identified on Bates p. 42 of the Company's filing?

Response:

As a clarification to the Pressure Regulating Facilities portion of the Company's Fiscal Year 2020 Gas Infrastructure, Safety, and Reliability Plan filing, the Company intends to abandon two regulator stations without replacement. These regulator stations are located in Warwick and West Warwick. The estimated cost for this work is \$0.245 million per station, for a total of \$0.490 million.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

PUC 1-6

Request:

Of the \$4.44 million identified for spending in the Allens Avenue project, how much is allocated to completing the commissioning of the new station and how much is allocated to the relocation of two other stations?

Response:

Of the \$4.44 million budgeted for the Allens Avenue Multi Station Rebuild project, the Company plans to spend \$2.393 million to complete and commission the new 200 pounds per square inch gauge (psig) to 99 psig station on the 642 Allens Avenue property, and \$2.047 million to install the replacement stations that will feed the 10 psig and 7 psig distribution systems.

PUC 1-7

Request:

Please provide copies of both the Southern and Northern Rhode Island studies to address forecasted capacity constraints & associated reliability problems that were funded in the FY19 Gas ISR. Please also include copies of the costs compared to the budget approved for each.

Response:

Northern Rhode Island Forecasted Capacity Constraints

The Company performed an analysis (Attachment PUC 1-7-1) that compared the maximum daily quantity (MDQ) for the Tennessee Gas Pipeline (TGP) meters that serve Rhode Island with the estimated daily quantity requirements. The daily quantity requirements were derived from the design day peak hour hydraulic models, which represents one-twentieth of the peak design day requirements. The Company used the June 2017 forecast for this comparison. To address forecasted capacity constraints and associated reliability problems, the Company focused on the estimated daily quantity shortfall for the TGP Pawtucket Meter.

Attachment PUC 1-7-1 shows the results of the comparison for fiscal year (FY) 2023, which is the fifth year of the ten year forecast, reflecting the 2022-23 winter season. The MDQ for the TGP Pawtucket meter is 32,238 dekatherms (Dth) per day, as shown in Column D, Row E. The daily quantity requirements for the TGP Pawtucket meter are 47,422 Dth per day, as shown in Column E, Row E. The estimated daily quantity shortfall is the difference of these two amounts, which is 15,184 Dth per day, as shown in Column F, Row E. This amount was provided as the need to address the forecasted capacity constraints and associated reliability problems.

Southern Rhode Island Forecasted Capacity Constraints

Please see Attachment PUC 1-7-2 for the June 2017 version of the growth forecast for the Southern Rhode Island service territory, as defined by the area served south of the Cranston Take Station. The forecast includes both residential and commercial projected load. Overall, the Southern Rhode Island service territory is forecasted to grow by 811 Dth (13.1 percent) over the next five years.

Cost Comparison

The requested cost comparison is provided in the table below. The FY 2019 Gas ISR included \$1.50 million for the Gas Expansion plan divided equally between Southern Rhode Island and Northern Rhode Island. At this time, the Company is continuing to evaluate the long-term

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

PUC 1-7, page 2

solution for Northern Rhode Island, and is not forecasting any capital spending for Northern Rhode Island in FY 2019. The current forecasted capital spending for Southern Rhode Island totals \$1.88 million. Factors contributing to the increased spending in the Engineering and Environmental and Permitting categories include the existence of contaminated sites along the route that required extensive review and subsurface exploration, monitoring wells, design and engineering costs for horizontal direction drilling for multiple bridge crossings, and traffic management plans. Overhead costs are the primary driver for the increased costs in the Other category.

Description	FY 2019 ISR Estimate	Current FY 2019 Forecast
<u>Southern Rhode Island</u>		
Engineering	\$ 312,475.00	\$ 719,400.00
Project Management	\$ 111,600.00	\$ 64,700.00
Project Development	\$ 24,000.00	\$ 49,250.00
Legal - EFSB Permitting	\$ 60,000.00	\$ 186,500.00
Environmental and Permitting	\$ 48,000.00	\$ 187,800.00
Community Outreach	\$ 155,048.00	\$ 135,784.00
Other	\$ 38,877.00	\$ 536,566.00
Total	\$ 750,000.00	\$ 1,880,000.00
<u>Northern Rhode Island</u>		
Engineering	\$ 312,475.00	\$ -
Project Management	\$ 111,600.00	\$ -
Project Development	\$ 24,000.00	\$ -
Legal - EFSB Permitting	\$ 60,000.00	\$ -
Environmental and Permitting	\$ 48,000.00	\$ -
Community Outreach	\$ 155,048.00	\$ -
Other	\$ 38,877.00	\$ -
Total	\$ 750,000.00	\$ -
Total Gas Expansion Project	\$ 1,500,000.00	\$ 1,880,000.00

FY23 TGP Flow Review with June 2017 Annual Forecast

	Column A	Column B	Column C	Column D	Column E	Column F
	Pipeline	Gate Station	FY MDQ	Contract MDQ (DTH/d)	Model Flow FY23 (DTH/d)	Contract MDQ - Model Flow FY23
Row A						
Row B		Cranston	FY20	29,000	80,421	(51,421)
Row C			*FY24	39,000	80,421	(41,421)
Row D		Lincoln	FY18	24,000	24,245	(245)
Row E		Cumberland (Pawtucket Meter)	FY18	32,238	47,422	(15,184)
Row F		Smithfield	FY18	10,800	31,308	(20,508)
Row G			Total	96,038	183,396	(87,358)
Row H			*Total	106,038	183,396	(77,358)

Note:

- 1) Flows exceeding MDQ are highlighted in red.
- 2) Daily flows calculated from peak hour (1/20) of peak day.
- 3)*Cranston FY23 model flow compared to FY24 Contract MDQ for reference

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

PUC 1-8

Request:

Please provide a breakdown of the \$44.46M for the FY20 Southern, RI expansion, including all assumptions used in calculating the estimate, a description of the work to be performed and a timetable for the work to be completed.

Response:

Please refer to Attachment PUC 1-8-1 for a breakdown of main installation work for the Southern Rhode Island Project in the amount of \$39.92 million.

Please see Attachment PUC 1-8-2 for a breakdown of material testing work for the Southern Rhode Island Project in the amount of \$4.54 million.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

Attachments PUC 1-8-1 and 1-8-2

REDACTED

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 2, 2019

PUC 1-9

Request:

Does NGrid Gas plan on seeking RI Energy Facilities Siting Board (EFSB) approval for the Southern expansion? If so, when? If not, why not?

Response:

On November 19, 2018, the Company filed with the EFSB a Petition for Declaratory Order that the proposed Southern expansion (Project) is not an alteration as defined under R.I. Gen. Laws § 42-98-3(b) because the Project will not “result in a significant impact on the environment or the public health, safety and welfare.” With the filing, the Company included a Project Siting Report that summarizes the Project components, need, cost, alternatives, and impacts. If the EFSB determines that the Project is not an alteration because it will not result in a significant impact on the environment or the public health, safety, and welfare, then no further review is required by the EFSB. The EFSB will hold a total of three public hearings in February and early March of this year. The Company anticipates a ruling from the EFSB in March 2019.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

Redacted
PUC 1-10

Request:

Please provide copies of all Requests for Proposals (RFPs) issued by NGrid Gas for the Southern expansion, including the one for the main installation and the material testing.

Response:

Please see Attachment PUC 1-10-1 for a copy of the RFP for the main installation and Attachment PUC 1-10-2 for a copy of the detail drawings submitted with the RFP for the main installation. To obtain the most qualified contractors interested in building the Southern Rhode Island Project, the Company first provided a request for information (RFI) to 18 vendors. After reviewing the results from this RFI event, eight vendors were issued a RFP and invited to attend a bidding event. Six of those bidders attended the RFP event. The Company received ■ bids on January 15, 2019, with the remainder of the vendors sighting resource constraints. The Company is in the process of reviewing the bids, and plans to award the bid for the project by March 8, 2019.

The Company expects to issue the RFP for the material testing excavation in February 2019.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

Attachment PUC 1-10-1

REDACTED

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

Attachment PUC 1-10-2

REDACTED

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

Redacted
PUC 1-11

Request:

How many bid responses have been received for each RFP issued?

Response:

The Company received [REDACTED] bid responses for the RFP issued for the main installation portion of the Southern Rhode Island Project. The Company expects to issue the RFP for the material testing excavation in February 2019, so it has not yet received any bid responses for the material testing work. Please see the Company's response to PUC 1-10 for additional information.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4916
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2020
Responses to the Commission's First Set of Data Requests
Issued on January 3, 2019

PUC 1-12

Request:

What is the growth forecast projected to be for residential and commercial load in Quonset? Provide data to support your answer.

Response:

Please see Attachment PUC 1-12 for the most recent (June 2018) growth forecast for the Town of North Kingston, which includes Quonset. The forecast includes both residential and commercial projected load.

Town	Zip Code	68 HDD Peak-Hour Growth Forecast for North Kingstown - Quonset (Dth) June 2018 Version					
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
North Kingstown	02852	520	681	824	820	886	1,147

0.0%