

February 6, 2018

VIA HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 4781 - Proposed Fiscal Year 2019 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 first set of data requests issued by the Rhode Island Public Utilities Commission (PUC) in the above-referenced docket.

This filing also includes a Motion for Protective Treatment of Confidential Information in accordance with Rule 1.2(g) 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 COMM 1-1-7, Attachment COMM 1-3-1, and Attachment COMM 1-3-5. Please note that due to its voluminous nature, National Grid has produced confidential Attachment COMM 1-3-1 on a USB Flash Drive. In compliance with Rule 1.2(g), National Grid has provided the PUC with one complete, un-redacted copy of the confidential materials in a sealed envelope marked "**Contains Privileged and Confidential Materials – Do Not Release,**" and has included confidential and/or 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: Docket 4781 Service List
Leo Wold, Esq.
John Bell, Division
Al Mancini, 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

February 6, 2018
Date

Docket No. 4781 - National Grid's FY 2019 Gas Infrastructure, Safety and Reliability (ISR) Plan - Service List 1/12/18

Name/Address	E-mail Distribution	Phone
Robert Humm, Esq. National Grid 280 Melrose St. Providence, RI 02907	robert.humm@nationalgrid.com ;	
	celia.obrien@nationalgrid.com ;	
	Joanne.scanlon@nationalgrid.com ;	
John Currie William Richer Melissa Little Ann Leary	John.currie@nationalgrid.com ;	
	William.richer@nationalgrid.com ;	
	Melissa.Little@nationalgrid.com ;	
	Ann.leary@nationalgrid.com ;	
Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Lwold@riag.ri.gov ;	401-274-4400
	Steve.scialabba@dpuc.ri.gov ;	
	dmacrae@riag.ri.gov ;	
	jmunoz@riag.ri.gov ;	
Al Mancini Division of Public Utilities	Al.mancini@dpuc.ri.gov ;	
	Don.ledversis@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 ;	
Alexander Cochis Daymark Energy Associates 12230 Main Campus Drive Lexington, MA 02421	acochis@daymarkea.com ;	
	arneale@comcast.net ;	
Allen Neale Four Ashley Drive Amesbury, MA 01913		

File an original & nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick RI 02888	Luly.massaro@puc.ri.gov;	401-780-2107
	Todd.bianco@puc.ri.gov;	
	Patricia.Lucarelli@puc.ri.gov;	
	Margaret.hogan@puc.ri.gov;	
	Sharon.ColbyCamara@puc.ri.gov;	
Christopher Kearns, OER	Christopher.Kearns@energy.ri.gov;	
	Danny.Musher@energy.ri.gov;	
	Nicholas.ucci@energy.ri.gov;	

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

RHODE ISLAND PUBLIC UTILITIES COMMISSION

Fiscal Year 2019 Gas Infrastructure,)	Docket No. 4781
Safety and Reliability Plan)	

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

National Grid¹ hereby requests that the Rhode Island Public Utilities Commission (PUC) provide confidential treatment and grant protection from public disclosure of certain confidential, competitively sensitive, and/or proprietary information submitted in this proceeding, as permitted by PUC Rule 1.2(g) 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 1.2 (g)(2).

I. BACKGROUND

On February 6, 2018, National Grid filed with the PUC its responses to the first set of data requests from the PUC in this docket (COMM Set 1). COMM Set 1 includes Data Request COMM 1-1(c) (seeking copies of all written communications between National Grid and the Division regarding the investigation into the causes that led to the decommissioning of the Cumberland LNG tank) and Data Request COMM 1-3 (seeking copies of consulting reports and photographs regarding inspections of the Cumberland LNG facility). National Grid's response to COMM 1-1(c) includes a redacted and un-redacted version of Attachment COMM 1-1-7.

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

National Grid's response to COMM 1-3 includes redacted and un-redacted versions of Attachments COMM 1-3-1 and 1-3-5. These attachments contain confidential Critical Energy Infrastructure Information (CEII), as well as confidential and proprietary business information. Therefore, National Grid requests that, pursuant to Rule 1.2(g), the PUC afford confidential treatment to the information contained in the un-redacted versions of Attachments COMM 1-1-7, 1-3-1, and 1-3-5.

II. LEGAL STANDARD

Rule 1.2(g) 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 the determination as to whether this exemption applies requires the application of a two-pronged test set forth in *Providence Journal Company v. Convention Center Authority*, 774 A.2d 40 (R.I. 2001). The 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. *See Providence Journal*, 774 A.2d 40.

The first prong of the test assesses whether the information was provided voluntarily to the governmental agency. *Providence Journal*, 774 A.2d at 47. If the answer to the first question is affirmative, then the question becomes whether the information is "of a kind that would customarily not be released to the public by the person from whom it was obtained." *Id.*

III. BASIS FOR CONFIDENTIALITY

The information contained in the un-redacted versions of Attachments COMM 1-1-7, 1-3-1, and 1-3-5 should be protected from public disclosure for two reasons. First, the information includes CEII, which is information that should not be publicly available because to do so would create security risks for the integrity of the distribution system and jeopardize the Company's ability to provide safe and reliable service. Second, the attachments contain confidential and proprietary information relating to the Company's business operations. Public disclosure of this information would negatively impact the Company's ability to effectively operate to provide safe and reliable service to its customers. Therefore, National Grid is providing the un-redacted versions of Attachments COMM 1-1-7, 1-3-1, and 1-3-5 to the PUC 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 these attachments.

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: February 6, 2018

COMM 1-1

Request:

In the 2018 GAS ISR decision, made on February ____, 2017 , the PUC ordered National Grid to:

1. Keep the Commission and Division informed as to the progress of National Grid's investigation into the causes that led to the decommissioning of the Cumberland LNG facility.
2. Provide the Division with advance notice as to the date and time of any inspections of the Cumberland LNG facility.
3. Permit Division personnel and experts to access the facility as observers during all inspections of the Cumberland LNG facility.
4. Undertake its best efforts to resell or retain any and all existing high-cost components installed at the Cumberland LNG facility.
5. Make reports to the Division and Commission, immediately upon occurrence, of any future damage incidents.

To date, the PUC has not received any progress reports of National Grid's investigation into the causes that led to the decommissioning of the Cumberland LNG facility.

- a. Why has National Grid not complied with the PUC's directive to keep the PUC informed as to the investigation into the causes that led to the decommissioning of the Cumberland LNG facility?
- b. Has National Grid kept the Division informed as to the progress of National Grid's investigation into the causes that led to the decommissioning of the Cumberland LNG facility? If so, by what method has that updating occurred- telephone calls, emails, reports or visits?
- c. If National Grid has kept the Division informed as to the progress of National Grid's investigation into the causes that led to the decommissioning of the Cumberland LNG facility, please provide the PUC with copies of all written communications, as well as a written summary of any and all oral communications between National Grid employees and employees of the Division- including the names of all parties, that date, time and substance of any oral communication.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission’s First Set of Data Requests
Issued on January 18, 2018

COMM 1-1, page 2

Response:

- a. The Company has informed the Public Utilities Commission (PUC) of the progress of its investigation in determining the causes that led to the decommissioning of the Cumberland liquefied natural gas (LNG) tank in the Company’s fiscal year (FY) 2018 Gas Infrastructure, Safety, and Reliability (ISR) Plan quarterly update reports. Specifically, the Company’s FY 2018 Gas ISR Plan quarterly reports to the PUC dated August 14, 2017 (Attachment COMM 1-1-1, at pages 3-4) and November 14, 2017 (Attachment COMM 1-1-2, at pages 4-5) provide the requested information.

- b. Yes, the Company has communicated with the Division of Public Utilities and Carriers (Division) regarding the investigation into the causes that led to the decommissioning of the Cumberland LNG tank. Methods of communication include the Company’s reports provided to the Division in response to COMM 1-1(a); meetings with representatives of the Division regarding the Division’s informal review of the Company’s proposed FY 2019 Gas ISR Plan; the Company’s discovery responses during the Division’s informal review of the Company’s proposed FY 2019 Gas ISR Plan; emails between the Company and the Division; site visits made by the Division; and various reports provided by the Company to the Division.

- c. Please refer to the table below for the requested information.

Date	Description	Additional Information
04/20/2017	Cold temperature evaluation reports from CHI Engineering dated May 2016, and PRELOAD dated June 2016	Sent to Don Ledversis (See Attachment COMM 1-1-3)
05/22/2017 and 5/23/2017	Internal camera inspection Procedures and notification of preliminary start date for demolition contractor	Sent to Don Ledversis (Attachment COMM 1-1-4)
08/09/2017	Internal camera inspection	Attended by Don Ledversis and Allen Neale

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781

In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission's First Set of Data Requests
Issued on January 18, 2018

COMM 1-1, page 3

08/14/2017	FY 2018 ISR Plan quarterly update report	Included update on Cumberland LNG investigation sent to PUC and Division
09/08/2017	Internal camera inspection results	Sent to Don Ledversis on 09/08/2017 (See the Company's response to Data Request COMM 1-3 at Attachments COMM 1-3-1 (confidential) and COMM 1-3-2
10/06/2017	Preparation for commencement of tank demolition	Attended by Don Ledversis and Kevin Lynch
10/25/2017	Tank demolition update with photos and notification to start external forensic investigation week of November 5, 2017	Sent to Don Ledversis and Kevin Lynch (Attachment COMM 1-1-5)
11/03/2017	Provided photos of tank in its current state and notification of intent to start forensic investigation on November 7, 2017 (included request to confirm Division's intent to be on site during forensic investigation)	Sent to Lateef Olajide (Attachment COMM 1-1-6)

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission’s First Set of Data Requests
Issued on January 18, 2018

COMM 1-1, page 4

11/14/2017	FY 2018 ISR Plan quarterly update report	Included update on investigation sent to PUC and Division
12/07/17	Conference call to discuss FY 2019 ISR Plan, including updates regarding Cumberland LNG	Division: Al Mancini Steve Scialabba Leo Wold Division consultants National Grid: Steve Bell John Currie Steve Greco Rob Humm Mike Kern Saadat Khan
01/09/2018	Submission of response to Data Request Division 2-1 after receiving forensic report	Included significant amount of information regarding Cumberland LNG tank demolition Attachment COMM 1-1-7 (confidential)

In addition, Company personnel would routinely contact the Division by phone to inform the Division of the progress and timing of demolition and related inspections. Key communications resulting from those discussions are captured in the table above.



Robert J. Humm
Senior Counsel

August 15, 2017

VIA HAND DELIVERY & ELECTRONIC MAIL

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

**RE: Docket 4678 – FY 2018 Gas Infrastructure, Safety, and Reliability Plan
Quarterly Update – First Quarter Ending June 30, 2017**

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed 10 copies of National Grid's fiscal year (FY) 2018 Gas Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the first quarter ending June 30, 2017 in the above-referenced docket.

Pursuant to the provisions of the approved FY 2018 Gas ISR Plan, National Grid committed to providing quarterly updates on the progress of its Gas ISR programs to the Public Utilities Commission and the Division of Public Utilities and Carriers.

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

Very truly yours,

A handwritten signature in blue ink, appearing to be "R. Humm", written over a horizontal line.

Robert J. Humm

Enclosures

cc: Docket 4678 Service List
Leo Wold, Esq.
Steve Scialabba
Don Ledversis

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

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

August 15, 2017
Date

Docket No. 4678 - National Grid's FY 2018 Gas Infrastructure, Safety and Reliability (ISR) Plan - Service List 1/11/17

Name/Address	E-mail Distribution	Phone
Jennifer Brooks Hutchinson, Esq. National Grid 280 Melrose St. Providence, RI 02907	jennifer.hutchinson@nationalgrid.com ;	401-784-7288
	celia.obrien@nationalgrid.com ;	
	Joanne.scanlon@nationalgrid.com ;	
John Currie William Richer Melissa Little Suhila Nouri Nutile	John.currie@nationalgrid.com ;	
	William.richer@nationalgrid.com ;	
	Melissa.Little@nationalgrid.com ;	
	Suhila.NouriNutile@nationalgrid.com ;	
Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Lwold@riag.ri.gov ;	401-274-4400
	Steve.scialabba@dpuc.ri.gov ;	
	John.spirito@dpuc.ri.gov ;	
	Don.ledversis@dpuc.ri.gov ;	
	dmacrae@riag.ri.gov ;	
	jmunoz@riag.ri.gov ;	
Steve Scialabba Division of Public Utilities	Steve.scialabba@dpuc.ri.gov ;	
	Don.ledversis@dpuc.ri.gov ;	
	Macky.McCleary@dpuc.ri.gov ;	
	Jonathan.Schrag@dpuc.ri.gov ;	
David Efron Berkshire Consulting 12 Pond Path North Hampton, NH 03862-2243	Djeffron@aol.com ;	603-964-6526
File an original & nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick RI 02888	Luly.massaro@puc.ri.gov ;	401-780-2107
	Todd.bianco@puc.ri.gov ;	
	Patricia.Lucarelli@puc.ri.gov ;	
	Margaret.hogan@puc.ri.gov ;	
	Sharon.ColbyCamara@puc.ri.gov ;	

Christopher Kearns, OER	Christopher.Kearns@energy.ri.gov;	
	Danny.Musher@energy.ri.gov;	
	Nicholas.ucci@energy.ri.gov;	

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 1 of 7

Gas Infrastructure, Safety, and Reliability Plan

The Narragansett Electric Company

FY 2018 Quarterly Update

First Quarter - Ending June 30, 2017

Executive Summary

Fiscal year 2018 (FY 2018) first quarter results (*Attachment A*) reflect that the Company¹ spent approximately \$21.18 million of an estimated quarterly budget of \$29.51 million, resulting in a first quarter under-spending variance of \$8.33 million. The first quarter spend includes actual spending of \$7.18 million of an estimated year-to-date budget of \$9.52 million for non-discretionary work (i.e., work required by legal, regulatory code, and/or agreement, or as a result of damage or failure), resulting in a first quarter under-spending variance of \$2.34 million. In addition, the first quarter spend includes actual spending of \$13.85 million compared to an estimated quarterly budget of \$19.84 million on discretionary work, resulting in a first quarter under-spending variance of \$5.99 million. Gas Infrastructure, Safety, and Reliability (ISR) Operations and Maintenance (O&M) expenses total \$0.14 million on a budget of \$0.14 million. To date, the \$21.18 million of actual spend represents approximately 21% of the total FY 2018 annual Gas ISR budget of \$101.76 million. Total year-end spend is currently forecast to be at the budgeted total of \$101.76 million. Projected under spend for the decommissioning of the Cumberland liquefied natural gas (LNG) tank is partially offset by increased spending in Mandated Programs. In the sections below, the Company explains in more detail the primary drivers for spending to-date and the forecast for each category.

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

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 2 of 7

FY 2018 Capital Spending by Category

Non-Discretionary Work²

Public Works Program – \$1.71 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent \$2.33 million of a projected year-to-date budget of \$4.03 million for the Public Works program, resulting in an under-spending variance of \$1.71 million. The key driver for this under-spending is the lower than anticipated installation and abandonment of gas mains and services in the public works program during the first quarter. This is attributed to timing of the work that is performed in conjunction with state and municipal schedules and is expected to re-align with the budgeted plan as the year continues. To date for FY 2018, the Company has installed 2.0 miles of a plan of 4.0 miles for new gas main and has abandoned 2.5 miles of a plan of 2.8 miles of leak-prone pipe through the Public Works program. With this level of spending, based on the current project mix in the plan and projected reimbursement funds for prior work, the Company anticipates that the Public Works program will be on-budget at fiscal year-end.

Mandated Programs – \$0.07 million over-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent approximately \$4.78 million of a projected year-to-date budget of \$4.71 million for Mandated Programs, resulting in an over-spending variance of \$0.07 million. The primary drivers for the over-spend to date include higher spending on purchase meter replacements attributed to increased customer meter changes, which was partially offset by lower spending within Pipeline Integrity due to delays in

² Non-Discretionary programs include those required by legal, regulatory code, and/or agreement, or as a result of damage or failure with limited exceptions.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 3 of 7

initiating work on the Providence River Crossing riser replacements. At this time, the Mandated Programs category is projected to be over-budget by \$0.93 million at fiscal year-end, in large part due to carryover of the Providence River Crossing signage project along with increases in the projected costs for completing the replacement of piping at the Laten Knight take station in Cranston. Weather issues, gas safety coordination, and the need to coordinate with the FY 2018 riser replacements contributed to the carryover of the signage project. The Laten Knight take station increase is due to the contractor bid coming in higher than the original estimate.

Damage/Failure Reactive Program – \$0.06 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent \$0.0 million of a projected year-to-date budget of \$0.06 million for the Damage/Failure Reactive program, resulting in an under-spending variance of \$0.06 million. At this time the Damage/Failure Reactive program category is projected to be on-budget at fiscal year-end.

Cumberland LNG Decommissioning Project – \$0.64 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent \$0.07 million of a projected year-to-date budget of \$0.72 million for the Cumberland LNG Decommissioning Project, resulting in an under-spending variance of \$0.64 million. This variance is due to the execution of the work plan occurring later than the assumptions used for phasing the budget. At this time, the Cumberland LNG Decommissioning Project is projected to be under-budget by \$0.99 million at fiscal year-end. This reduction is due to the contractor bid process resulting in lower pricing than the amounts that were assumed in the budget. Camera inspection of the interior of the LNG tank was conducted on August 9, 2017 and August 10, 2017. Demolition site mobilization is scheduled for August 14, 2017. Forensic analysis procedures were provided to

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 4 of 7

the Division of Public Utilities and Carriers (Division) in advance of the camera inspection. In addition, the Company has met with the Division to review disposition plans associated with a listing of major Cumberland LNG plant components. Disposition methods typically include internal use, scrap, or third-party sale. The Company will continue to update the Division as additional information becomes available.

Discretionary Work³

Proactive Main Replacement Program – \$5.60 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company has spent approximately \$11.47 million of a projected year-to-date budget of \$17.07 million for the Proactive Main Replacement program, resulting in an under-spending variance of \$5.60 million. There are a number of factors contributing to the first quarter under-spend, including the pace of crew ramp up in the first quarter, concentration of larger diameter work in Providence, and budget phasing. These factors contributed to installed miles coming in behind plan at this point. To date for FY 2018, the Company has installed 15.4 miles of 17.2 planned miles of new main and has abandoned 8.3 miles of leak-prone pipe against a plan of 10.0 miles. Full ramp up of crews and remaining work mix supports the Company's objective to deliver the Proactive Main Replacement program on plan and on budget at fiscal year-end.

³ Discretionary programs are not required by legal, regulatory code, and/or agreement, or as a result of damage or failure with limited exceptions.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 5 of 7

Proactive Service Replacement Program – \$0.33 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent \$0.0 million of a projected year-to-date budget of \$0.33 million for the Proactive Service Replacement program, resulting in an under-spending variance of \$0.33 million. First quarter Leak and Growth Service backlogs diverted resources from the Proactive Service Replacement program. Jobs are currently being permitted and packaged to prepare for scheduling. As a result, the Company expects this category to be on plan and on budget by fiscal year-end.

Reliability Programs – \$0.06 million under-spending variance to budget year-to-date

Through the first quarter of FY 2018, the Company spent \$2.38 million of a projected year-to-date budget of \$2.44 million for Reliability programs, resulting in an under-spending variance of \$0.06 million for this category. The primary drivers of this under-spending variance are Allens Avenue Multi Station Rebuild, System Automation, and LNG. Change in current year scope for Allens Avenue will result in the deferral of some work until FY 2019. System Automation and LNG are attributed to in-year timing of work plan completion. This under-spend is partially offset by higher spend in the areas of Pressure Regulation Facilities and Gas System Control. In-year work plan timing and carryover of unplanned costs at Dey Street are contributing to the increased spending for Pressure Regulation Facilities. Gas System Control includes costs associated with control room video monitors that were not included in the current year budget. At this time, spending for this category is expected to be over-budget by \$0.71 million at the end of the fiscal year, driven by increased costs in Pressure Regulation Facilities and carryover costs from the Allens Avenue Filter Separator. These items were partially offset by the deferral of the completion of Allens Avenue Multi Station Rebuild Phase II until FY 2019.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
First Quarter Ending June 30, 2017
Page 6 of 7

FY 2018 O&M Spending

O&M – on budget

In the FY 2018 Gas ISR Plan, the Company agreed to track the incremental O&M expenses associated with the hiring, training, and work of 16 additional personnel required for the acceleration of replacement of leak-prone pipe relating to the Proactive Main and Public Works work in FY 2018. Through the first quarter of FY 2018, the Company is on budget having incurred O&M expenses totaling approximately \$0.14 million for these 16 individuals against a year-to-date budget of \$0.14 million. At this time, the Company expects the O&M category to be on-budget at fiscal year-end.



Robert J. Humm
Senior Counsel

November 14, 2017

VIA HAND DELIVERY & ELECTRONIC MAIL

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

**RE: Docket 4678 – FY 2018 Gas Infrastructure, Safety, and Reliability Plan
Quarterly Update – Second Quarter Ending September 30, 2017**

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed 10 copies of National Grid's fiscal year (FY) 2018 Gas Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the second quarter ending September 30, 2017 in the above-referenced docket.

Pursuant to the provisions of the approved FY 2018 Gas ISR Plan, National Grid committed to providing quarterly updates on the progress of its Gas ISR programs to the Public Utilities Commission and the Division of Public Utilities and Carriers.

Thank you for your attention to this matter. If you have any questions regarding this filing, 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: Docket 4678 Service List
Leo Wold, Esq.
Steve Scialabba
Don Ledversis

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

The Narragansett Electric Company
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RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 1 of 8

Gas Infrastructure, Safety, and Reliability Plan
The Narragansett Electric Company
FY 2018 Quarterly Update
Second Quarter - Ending September 30, 2017

Executive Summary

Fiscal year (FY) 2018 second quarter results (*Attachment A*) reflect that the Company¹ spent approximately \$60.18 million of an estimated quarterly budget of \$69.79 million, resulting in a second quarter under-spending variance of \$9.61 million. The second quarter spend includes actual spending of \$19.54 million for Non-Discretionary work compared to an estimated year-to-date budget of \$22.12 million, resulting in a second quarter under-spending variance of \$2.58 million. In addition, the second quarter spend includes actual spending of \$40.38 million for Discretionary work compared to an estimated quarterly budget of \$47.39 million, resulting in a second quarter under-spending variance of \$7.01 million. Gas Infrastructure, Safety, and Reliability (ISR) operations and maintenance (O&M) expenses total \$0.27 million compared to a budget of \$0.29 million. To date, the \$60.18 million of actual spend represents approximately 59% of the total FY 2018 annual Gas ISR budget of \$101.76 million. Total year-end spend is currently forecast at \$103.46 million. The primary driver for the projected over-spend is the \$1.70 million replacement of the Admiral Street at Charles Street Regulator Station in Providence under the Damage/Failure category. Other items of note include forecasted under-spend for the decommissioning of the Cumberland liquefied natural gas (LNG) tank and large diameter pipeline replacement. This is offset by forecasted over-spend for the Allens Avenue

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

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 2 of 8

Take Station in Providence and various Pipeline Integrity projects. In the sections below, the Company explains in more detail the primary drivers for spending to-date and the forecast for each category.

FY 2018 Capital Spending by Category

Non-Discretionary Work²

Public Works Program – \$1.16 million under-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company spent \$7.79 million of a projected year-to-date budget of \$8.94 million for the Public Works program, resulting in an under-spending variance of \$1.16 million. The key driver for this under-spending is that the mix of work completed to date is not aligned with the assumptions included in the phased budget because of the timing of the work performed in conjunction with state and municipal schedules. The Company expects that the work under the Public Works program will re-align with the budgeted plan as the year continues. To date for FY 2018, the Company has installed 8.2 miles of a planned 6.4 miles for new gas main and has abandoned 5.0 miles of a planned 4.0 miles of leak-prone pipe through the Public Works program. With this level of spending and the current project mix in the plan, the Company anticipates that the Public Works program will be on-budget at fiscal year-end.

Mandated Programs – \$1.58 million over-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company spent approximately \$11.18 million of a projected year-to-date budget of \$9.60 million for Mandated Programs, resulting in an over-

² Non-Discretionary programs include those required by legal, regulatory code, and/or agreement, or as a result of damage or failure with limited exceptions.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 3 of 8

spending variance of \$1.58 million. The primary drivers for the over-spend to date include higher spending on purchase meter replacements attributed to increased customer meter changes and higher spending within Pipeline Integrity projects largely due to cost increases associated with the Laten Knight Road Take Station in Cranston due to large wall pipe welding and hydrostatic testing that was not included in the original budget. This over-spend is partially offset by under-spending in the reactive Service Replacement leaks category. At this time, the Company projects the Mandated Programs category will be over-budget by \$2.68 million at fiscal year-end, in large part due to carryover of the Providence River Crossing signage project along with increases in the projected costs for completing the replacement of piping at the Laten Knight Road Take Station. Weather issues, gas safety coordination, and the need to coordinate with the FY 2018 riser replacements contributed to the carryover of the signage project. In addition, cost increases are included in the forecast to address corrosion issues identified in the signage foundations.

Damage/Failure Reactive Program – \$0.04 million under-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company spent \$0.08 million of a projected year-to-date budget of \$0.12 million for the Damage/Failure Reactive program, resulting in an under-spending variance of \$0.04 million. At this time, the Company projects the Damage/Failure Reactive program category will be \$1.70 million over-budget at fiscal year-end. The primary driver for the projected over-spend is the replacement of the Admiral Street at Charles Street Regulator Station in Providence. This project relates to a cinder block regulator station vault that the Company found had been significantly damaged by the City contractor following a sewer main replacement job. Prior to the initiation of the sewer project the Company worked closely with the City and the contractor to agree on a Damage Prevention plan. While the Damage Prevention plan was followed, settlement occurred around the vault, which unexpectedly affected the Company's facilities. The Admiral at Charles Regulator Station is not currently in

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 4 of 8

operation, but will be required for the upcoming heating season. In addition the forecast includes \$0.20 million to fund two remote operated valves at the Manchester Street Take Station in Providence. The Manchester Street project will install new actuated valves that will provide the Gas Control center with remote shutdown capability. This capability will enable the Company to take action immediately in the event of abnormal operating conditions, which will significantly decrease response time. Additionally, in the event that abnormal operating conditions make the site unsafe for personnel access, the remote shutdown option can still be exercised safely.

Cumberland LNG Decommissioning Project – \$2.96 million under-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company spent \$0.48 million of a projected year-to-date budget of \$3.44 million for the Cumberland LNG Decommissioning Project, resulting in an under-spending variance of \$2.96 million. This variance is due to the execution of the work plan occurring later than the assumptions used for phasing the budget. At this time, the Company projects the Cumberland LNG Decommissioning Project will be under-budget by \$1.13 million at fiscal year-end. This reduction is due to the contractor bid process resulting in lower pricing than the amounts that were assumed in the budget. On August 9 and 10, 2017, the Company engaged a third party to conduct a camera inspection, which included mapping of the entire interior surface area of the LNG tank using a high resolution camera. Preliminary assessments did not reveal any definitive surface discontinuities. The external forensic inspection was completed on November 8, 2017. A full report will be provided upon completion of the review of the results of both the internal and external inspections. Demolition commenced on October 10, 2017, and the Company expects the majority of the demolition work will be completed by the end of November 2017. Forensic analysis procedures were provided to the Division of Public Utilities and Carriers (the Division) in advance of the camera inspection. In addition, the Company has met with the Division to review disposition plans associated with a listing of major

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 5 of 8

Cumberland LNG plant components. Disposition methods typically include internal use, scrap, or third-party sale. The Company will continue to update the Division as additional information becomes available.

Discretionary Work³

Proactive Main Replacement Program – \$8.11 million under-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company has spent approximately \$31.24 million of a projected year-to-date budget of \$39.35 million for the Proactive Main Replacement program, resulting in an under-spending variance of \$8.11 million. There are a number of factors contributing to the second quarter under-spend, including the pace of crew ramp-up in the first quarter, concentration of larger diameter work in Providence at the beginning of the construction season, and budget phasing. To date for FY 2018, the Company has installed 32.9 miles of 35.0 planned miles of new main and has abandoned 19.7 miles of leak-prone pipe against a plan of 25.4 miles. The year-to-date under-spend will continue to decline in the third quarter as the Company continues to deploy a full crew complement and shifts focus to completing abandonments. The Proactive Main Replacement program is forecast to end the fiscal year at \$1.99 million under budget. This is attributed to the deferral of a significant portion of the Large Diameter program combined with projected cost reductions in the leak-prone pipe category.

Proactive Service Replacement Program – \$0.70 million under-spending variance to budget year-to-date

³ Discretionary programs are not required by legal, regulatory code, and/or agreement, or as a result of damage or failure with limited exceptions.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 6 of 8

Through the second quarter of FY 2018, the Company spent \$0.00 million of a projected year-to-date budget of \$0.70 million for the Proactive Service Replacement program, resulting in an under-spending variance of \$0.70 million. Leak and growth service backlogs diverted resources from the Proactive Service Replacement program. Jobs are currently being permitted and packaged to prepare for scheduling. As a result, the Company expects this category will be \$0.60 under planned spend of \$0.90 at fiscal year-end with a forecast to complete 50 to 70 out of 200 planned service replacements.

Reliability Programs – \$1.80 million over-spending variance to budget year-to-date

Through the second quarter of FY 2018, the Company spent \$9.14 million of a projected year-to-date budget of \$7.34 million for Reliability programs, resulting in an over-spending variance of \$1.80 million for this category. The primary drivers of this over-spending variance are the Allens Avenue Multi Station Rebuild and Instrumentation and Regulation (I&R) Reactive, with partial offsets due to under-spending in Pressure Regulation Facilities. Prior year carryover and environmental mitigation factors are contributing to higher costs for the Allens Avenue Multi Station Rebuild project that are partially offset by cost reductions associated with the deferral of elements of the fiscal year 2018 work plan. I&R Reactive over-spend is largely due regulator station abandonment costs. In-year work plan timing associated with two locations on Roger Williams Avenue in East Providence is contributing to the decreased spending for Pressure Regulation Facilities. At this time, the Company expects that spending for this category will be over-budget by \$1.043 million at the end of the fiscal year, driven by increased costs in the Allens Avenue Multi Station Rebuild that are offset by lower spending in Gas Planning due to the deferral of the Halidon Avenue relay project in Newport and the Wood Street at Woodlawn Avenue Regulator Station project in Bristol.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 7 of 8

FY 2018 O&M Spending

O&M – on budget

In the FY 2018 Gas ISR Plan, the Company agreed to track the incremental O&M expenses associated with the 16 additional personnel required for the acceleration of replacement of leak-prone pipe relating to the Proactive Main and Public Works programs in FY 2018. Through the second quarter of FY 2018, the Company is on budget, having incurred O&M expenses totaling approximately \$0.27 million for the 16 individuals against a year-to-date budget of \$0.29 million. At this time, the Company expects the O&M category will remain on budget at fiscal year-end.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4678
FY 2018 Gas Infrastructure, Safety, and Reliability Plan
FY 2018 Quarterly Update
Second Quarter Ending September 30, 2017
Page 8 of 8

Attachment A						
US Gas-Distribution						
The Narragansett Electric Company						
d/b/a National Grid - RI Gas						
Capital Spending by Investment Categories						
FY 2108 through September 30, 2017						
(\$000)						
INVESTMENT CATEGORIES	Budget	FYTD Actual	Variance	Budget	FY18 - Total Forecast	Variance
NON-DISCRETIONARY						
Public Works Program*	\$8,944	\$7,786	(\$1,158)	\$12,218	\$12,219	\$ 1
Mandated Program	\$9,605	\$11,185	\$1,580	\$18,672	\$21,350	\$2,678
Damage / Failure Reactive	\$125	\$84	(\$41)	\$250	\$1,948	\$1,698
Cumberland LNG Decommissioning	\$3,445	\$480	(\$2,965)	\$3,589	\$2,457	(\$1,132)
NON-DISCRETIONARY SUB-TOTAL	\$22,119	\$19,536	(\$2,583)	\$34,729	\$37,974	\$3,245
DISCRETIONARY						
Proactive Main Replacement	\$39,351	\$31,239	(\$8,113)	\$54,106	\$52,120	(\$1,986)
Proactive Service Replacement	\$698	(\$1)	(\$698)	\$900	\$300	(\$600)
Reliability Programs	\$7,339	\$9,141	\$1,802	\$11,450	\$12,492	\$1,042
DISCRETIONARY SUB-TOTAL	\$47,388	\$40,379	(\$7,009)	\$66,456	\$64,912	(\$1,544)
TOTAL CAPITAL INVESTMENT	\$69,507	\$59,915	(\$9,593)	\$101,185	\$102,886	\$1,701
O&M	\$286	\$267	(\$19.00)	\$571	\$571	\$0
TOTAL CAPITAL and O&M **	\$69,793	\$60,182	(\$9,612)	\$101,756	\$103,457	\$1,701
() denotes under-spend						
* Public Works Program includes reimbursements which will be credited as received throughout the year.						
** FY 2018 impact of change in capital overhead distribution method is under review. No impact to total capital clearing costs, but is expected to result in shifts between program categories.						

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

November 14, 2017
Date

Docket No. 4678 - National Grid's FY 2018 Gas Infrastructure, Safety and Reliability (ISR) Plan - Service List 1/11/17

Name/Address	E-mail Distribution	Phone
Jennifer Brooks Hutchinson, Esq. National Grid 280 Melrose St. Providence, RI 02907	jennifer.hutchinson@nationalgrid.com ;	401-784-7288
	celia.obrien@nationalgrid.com ;	
	Joanne.scanlon@nationalgrid.com ;	
John Currie William Richer Melissa Little Suhila Nouri Nutile	John.currie@nationalgrid.com ;	
	William.richer@nationalgrid.com ;	
	Melissa.Little@nationalgrid.com ;	
	Suhila.NouriNutile@nationalgrid.com ;	
Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Lwold@riag.ri.gov ;	401-274-4400
	Steve.scialabba@dpuc.ri.gov ;	
	John.spirito@dpuc.ri.gov ;	
	Don.ledversis@dpuc.ri.gov ;	
	dmacrae@riag.ri.gov ;	
	jmunoz@riag.ri.gov ;	
Steve Scialabba Division of Public Utilities	Steve.scialabba@dpuc.ri.gov ;	
	Don.ledversis@dpuc.ri.gov ;	
	Macky.McCleary@dpuc.ri.gov ;	
	Jonathan.Schrag@dpuc.ri.gov ;	
David Efron Berkshire Consulting 12 Pond Path North Hampton, NH 03862-2243	Djeffron@aol.com ;	603-964-6526
File an original & nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick RI 02888	Luly.massaro@puc.ri.gov ;	401-780-2107
	Todd.bianco@puc.ri.gov ;	
	Patricia.Lucarelli@puc.ri.gov ;	
	Margaret.hogan@puc.ri.gov ;	
	Sharon.ColbyCamara@puc.ri.gov ;	

Christopher Kearns, OER	Christopher.Kearns@energy.ri.gov;	
	Danny.Musher@energy.ri.gov;	
	Nicholas.ucci@energy.ri.gov;	

Hutchinson, Jennifer

From: Hutchinson, Jennifer
Sent: Thursday, April 20, 2017 3:05 PM
To: 'Ledversis, Don (DPUC)'; Leo Wold
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports
Attachments: 4678 - Gas ISR NDA.pdf

Don/Leo-

Attached is a copy of the NDA that has been countersigned by Tim Horan. Please note that Tim executed the attached agreement on April 18; however, the date had already been filled in as of March 31.

There are 2 reports that are being sent over to Don's attention this afternoon.

Please let us know if there is anything else.

Thanks.
Jennifer

Jennifer Brooks Hutchinson

Senior Counsel
National Grid USA
280 Melrose Street
Providence, RI 02907
T: 401-784-7288
C: 401-480-1425
F: 401-784-4321
jennifer.hutchinson@nationalgrid.com

****Please note my new cell phone number****

From: Ledversis, Don (DPUC) [mailto:Don.Ledversis@dpuc.ri.gov]
Sent: Thursday, April 06, 2017 12:30 PM
To: Hutchinson, Jennifer
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

Here it is.

From: Hutchinson, Jennifer [mailto:Jennifer.Hutchinson@nationalgrid.com]
Sent: Thursday, April 06, 2017 11:27 AM
To: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Cc: Leo Wold <LWold@riag.ri.gov>
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

Thanks Don. I also need the signed NDA. Leo has signed those in the past but I am not sure if that is still Division protocol.

Jennifer Brooks Hutchinson

Senior Counsel
National Grid USA
280 Melrose Street
Providence, RI 02907
T: 401-784-7288
C: 401-480-1425
F: 401-784-4321

jennifer.hutchinson@nationalgrid.com

****Please note my new cell phone number****

From: Ledversis, Don (DPUC) [<mailto:Don.Ledversis@dpuc.ri.gov>]
Sent: Thursday, April 06, 2017 11:05 AM
To: Hutchinson, Jennifer
Cc: Leo Wold
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

Here is your copy of the signed form from our Consultant Dr. Marc Richman.

From: Hutchinson, Jennifer [<mailto:Jennifer.Hutchinson@nationalgrid.com>]
Sent: Tuesday, April 04, 2017 1:58 PM
To: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

That's OK, Don. Just did not want to lose sight of it.

Thanks!

Jennifer Brooks Hutchinson

Senior Counsel
National Grid USA
280 Melrose Street
Providence, RI 02907
T: 401-784-7288
C: 401-480-1425
F: 401-784-4321

jennifer.hutchinson@nationalgrid.com

****Please note my new cell phone number****

From: Ledversis, Don (DPUC) [<mailto:Don.Ledversis@dpuc.ri.gov>]
Sent: Tuesday, April 04, 2017 1:53 PM
To: Hutchinson, Jennifer
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

Jennifer I just sent the form to our consultant to sign sorry got tied up with the Manchester Gate incident.

From: Leo Wold [<mailto:LWold@riag.ri.gov>]
Sent: Tuesday, April 04, 2017 1:01 PM
To: Hutchinson, Jennifer <Jennifer.Hutchinson@nationalgrid.com>

Cc: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

I would contact Don.

From: Hutchinson, Jennifer [<mailto:Jennifer.Hutchinson@nationalgrid.com>]
Sent: Tuesday, April 04, 2017 1:00 PM
To: Leo Wold <LWold@riag.ri.gov>
Subject: RE: EXT || RE: Docket 4678- Cumberland LNG Reports

Hi Leo-

I have not received the signed NDA or Attachment A yet. We have 2 reports that are ready to be sent to Don but I was hoping to get the signed NDA from the Division.

Thanks.
Jennifer

Jennifer Brooks Hutchinson

Senior Counsel
National Grid USA
280 Melrose Street
Providence, RI 02907
T: 401-784-7288
C: 401-480-1425
F: 401-784-4321
jennifer.hutchinson@nationalgrid.com

****Please note my new cell phone number****

From: Leo Wold [<mailto:LWold@riag.ri.gov>]
Sent: Friday, March 31, 2017 1:27 PM
To: Hutchinson, Jennifer
Subject: EXT || RE: Docket 4678- Cumberland LNG Reports

I have forwarded both documents to Don and Steve, who should, I hope, send you Attachment A (which they will have executed) along with the executed Agreement.

Leo

From: Hutchinson, Jennifer [<mailto:Jennifer.Hutchinson@nationalgrid.com>]
Sent: Friday, March 31, 2017 12:18 PM
To: Leo Wold <LWold@riag.ri.gov>
Cc: Don Ledversis (Don.Ledversis@dpuc.ri.gov) <Don.Ledversis@dpuc.ri.gov>; Sullivan, Kathleen A. <Kathleen.Sullivan@nationalgrid.com>
Subject: Docket 4678- Cumberland LNG Reports

Leo-

Attached is a standard NDA to facilitate the sharing of reports related to the Cumberland LNG decommissioning as agreed to during the Gas ISR proceeding. I have also included the standard Attachment A to be signed by any Division representatives/consultants who will have access to these reports.

Can you kindly execute the attached and return to my attention?

Thank you,
Jennifer

Jennifer Brooks Hutchinson

Senior Counsel
National Grid USA
280 Melrose Street
Providence, RI 02907
T: 401-784-7288
C: 401-480-1425
F: 401-784-4321
jennifer.hutchinson@nationalgrid.com

****Please note my new cell phone number****

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Currie, John B. (Distribution Finance)

From: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Sent: Tuesday, May 23, 2017 3:44 PM
To: Byron, Deborah
Subject: RE: EXT || RE: Procedure for Cumberland LNG Tank Inspection

Ok thanks.

From: Byron, Deborah [<mailto:Deborah.Byron@nationalgrid.com>]
Sent: Tuesday, May 23, 2017 2:34 PM
To: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Subject: RE: EXT || RE: Procedure for Cumberland LNG Tank Inspection

Don

Site mobilization by the demolition contractor is scheduled for 7/28/17. The camera inspection will take place after that as a top priority task. That exact date is yet to be determined and will be based on the contractor's recommendation.

Deb

From: Ledversis, Don (DPUC) [<mailto:Don.Ledversis@dpuc.ri.gov>]
Sent: Monday, May 22, 2017 10:33 AM
To: Byron, Deborah
Subject: EXT || RE: Procedure for Cumberland LNG Tank Inspection

Deb, is there a timeframe when this procedure is expected to be implemented? Thank you.

From: Byron, Deborah [<mailto:Deborah.Byron@nationalgrid.com>]
Sent: Monday, May 22, 2017 8:43 AM
To: Ledversis, Don (DPUC) <Don.Ledversis@dpuc.ri.gov>
Subject: Procedure for Cumberland LNG Tank Inspection

Don ,

Please find the procedure for the Cumberland LNG Tank Inspection.

Thanks
Deb

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<http://www.nationalgrid.com/corporate/legal/registeredoffices.htm>



Cumberland LNG Tank Inspection Work Procedure

The following Work Procedure was established to support work to be performed at National Grids Cumberland, RI LNG facility and will be followed by all ULC Robotics technicians while performing a CCTV inspection of the interior of an LNG tank.

Procedure:

ULC Robotics field crew will consist of (2) NGA Operator Qualified personnel trained in the proper use of the Periscope Inspection System.

- Any required safety or operational certifications will be obtained prior to the inspection.
- All required PPE will be or safety equipment will be distributed to all field personnel and worn/used at all times.
- Safety briefings will be held each morning prior to work and attended by all field personnel.
- Inspection to be performed from the top of the LNG tank with access into the tank from a 12" relief valve column **(See Diagram Below)**
- All associated equipment will be stationed at the top of the LNG tank, close to the 12" relief valve column, and transported to this location via existing staircase access.
- National Grid will provide required personnel to guide ULC crews and ensure safety procedures are followed.
- 110V Power will be provided by National Grid or ULCR Generators and (1) cord ran close to access manhole
- Access valve will be removed and atmospheric testing performed to ensure tank is in an inert state prior to any work performed.
- An Atmospheric gas testing device will be provided by National Grid and will continuously monitor the atmosphere within the tank prior to and during the inspection. The gas testing device will be located at the top of the tank outside at the opening where the camera will be inserted. A sampling tube attached to the testing device will be lowered into the tank at the various levels as described below. The initial test will include samples starting first at the bottom of the tank, then mid-way and lastly towards the top. After this initial test is complete and readings are satisfactory the sampling tube will be lowered and set stationary at the mid-way point of the tank. The device will remain at the top of the tank at the camera insertion opening powered on during the entire inspection process and continuously monitor the atmosphere.
- If at any time the atmospheric testing device reacts to possible non-inert conditions, power will be quickly shut to all associated equipment and agreed procedures followed.



- Periscope camera will be lowered into the tank using assembled rods and positioned at the first quadrant of inspection.

Inspection Procedure:

1. Camera lowered to approximately 4' from bottom of the tank and locked in place.
2. Tank scan will be performed first focusing on the floor and floor/wall seam of tank.
3. The pan and tilt function of the Periscope system will allow for the entire circumference of the tank inspected.
4. Additional Lighting Source will be available onsite if required
5. ULC to thoroughly inspect and zoom closely on the cold spot/tank failure location.
6. Any other notable features, discoloration or possible deformities on the tank wall will be zoomed in on for analysis.
7. Notable features and its location will be documented via inspection reports. (ULCR will collaborate with National Grid to decide on best reporting format and structure.)
8. Camera will be lifted in 4' intervals and the inspection procedure followed in each quadrant. (4' intervals could be changed based upon best approach to an efficient inspection)
9. Entire inner circumference of the LNG tank will be inspected using this method.

ULC will be willing to add any additional inspection procedure steps at National Grid's request.

Currie, John B. (Distribution Finance)

From: Hunt, Brian
Sent: Wednesday, October 25, 2017 9:23 AM
To: 'Kevin.Lynch@dpuc.ri.gov'
Subject: FW: LNG Tank update

From: Hunt, Brian
Sent: Wednesday, October 25, 2017 9:01 AM
To: 'Ledversis, Don (DPUC)'
Cc: Bell, Stephen M.; 'Kevin.Lynch@dpuc.ri.gov'
Subject: LNG Tank update



FW: Cumberland
pictures

Good morning

Attached you will find some photos of the tank demolition progress. . I would also like to let you know that the forensic investigation will be starting the week of the 5th of November , if all continues as planned. I will update everyone next week after the update call. Thanks Brian

Brian S. Hunt
Regulatory and Compliance
401-742-0777









From: Hunt, Brian
Sent: Friday, November 03, 2017 12:12 PM
To: Olajide, Lateef (DPUC)
Subject: FW: Cumberland LNG Tank Demolition: Pictures
Attachments: IMG_2486.jpg; IMG_2500.JPG; IMG_2502.JPG

Lateef,

Attached you will find the photos of the LNG tank at its current state . The company will be starting the forensic investigation on the 7th. Please let me know if you or anyone else will need to be on site. Thanks, Brian

From: Cimini, Rob
Sent: Friday, November 03, 2017 10:20 AM
To: Hunt, Brian
Subject: Cumberland LNG Tank Demolition: Pictures

Brian:
Attached are recent pictures of the tank demolition for sharing with Don Ledversis.

Rob C.

Rob Cimini
Project Manager - LNG
Project Management & Complex Construction – Gas NE
National**grid**
40 Sylvan Rd | Waltham, MA 02451
☎ Cell: 603-431-4764
Rob.Cimini@NationalGrid.com







The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission's First Set of Data Requests
Issued on January 18, 2018

Attachment COMM 1-1-7

REDACTED

In accordance with PUC Rule 1.2(g), the Company is seeking confidential treatment of Attachment COMM 1-1-7.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission's First Set of Data Requests
Issued on January 18, 2018

COMM 1-2

Request:

Did National Grid conduct any inspections of the Cumberland LNG facility since February, 2017? If not, why not? If so, did National Grid provide prior notice of the inspections to the Division?

Response:

Yes, the Company conducted two key inspection activities since February 2017 regarding the causes that led to the decommissioning of the Cumberland liquefied natural gas (LNG) tank. The first inspection occurred on August 9 and 10, 2017, where the Company engaged ULC Robotics to conduct an internal camera inspection of the tank. The internal camera inspection included mapping of the entire interior surface area of the LNG tank using a high resolution camera. The Company provided forensic analysis procedures to support the camera inspection to the Division of Public Utilities and Carriers (the Division) on May 22, 2017. Second, an external forensic inspection was completed on November 8, 2017. The Company provided prior notification to the Division for both inspections.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission's First Set of Data Requests
Issued on January 18, 2018

COMM 1-3

Request:

If National Grid conducted any inspections of the Cumberland LNG facility, please provide a detailed written report of the findings discovered at each and every inspection. Include copies of any consulting reports and photographs.

Response:

Please refer to the table below for references to final inspection reports. Please note that inspections designed to determine the causes that led to the decommissioning of the Cumberland LNG tank are limited to the ULC Robotics and CHI Engineering inspections.

Company	Test Result Description	Attachment
ULC Robotics	Internal forensic camera inspection	Attachment COMM 1-3-1 (confidential) and Attachment COMM 1-3-2. Please note that Attachment COMM 1-3-1 consists of a USB Flash Drive.
Pro Science Analytical Services, Inc.	Asbestos results	Attachment COMM 1-3-3
Jordi Labs	Insulation test results	Attachment COMM 1-3-4
CHI Engineering	Final post demolition report	Attachment COMM 1-3-5 (confidential)

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4781
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2019
Responses to the Commission's First Set of Data Requests
Issued on January 18, 2018

Attachment COMM 1-3-1

REDACTED

In accordance with PUC Rule 1.2(g), the Company is seeking confidential treatment of Attachment COMM 1-3-1.

Due to the extremely large file sizes (ranging from 1 GB to 3 GB), the Company is providing Confidential Attachment COMM 1-3-1 on a USB Flash Drive.



National Grid

Project: LNG Tank Inspection
Address of Pit Location 1595 Mendon Rd
Level #: 1
Depth in Tank: 40'
Inspector: Zach Kinton

Date: 8/9/2017
Completed By: Vaccaro
Crew: Vaccaro & Galli
Equipment: Periscope

1595 Mendon Road Cumberland RI

Panel Number	Observation
1	No Observation
2	No Observation
3	No Observation
4	No Observation
5	Not Inspected
6	Not Inspected
7	Not Inspected
8	Not Inspected
9	No Observation
10	Not Inspected
11	Not Inspected
12	Not Inspected
13	Not Inspected
14	Not Inspected
15	No Observation
16	No Observation
17	No Observation
18	No Observation
19	No Observation
20	Point of Interest
21	Point of Interest
22	No Observation
23	No Observation
24	No Observation
25	No Observation
26	Point of Interest
27	No Observation
28	No Observation
29	No Observation
30	No Observation
31	No Observation
32	No Observation
33	No Observation
34	No Observation
35	No Observation
36	No Observation
37	No Observation
38	No Observation

39	No Observation
40	No Observation
41	No Observation
42	No Observation
43	Point of Interest
44	Point of Interest
45	No Observation
46	No Observation
47	Point of Interest
48	No Observation
49	No Observation
50	No Observation
51	No Observation
52	No Observation
53	Point of Interest
54	No Observation
55	No Observation
56	No Observation
57	No Observation
58	No Observation
59	Point of Interest
60	No Observation



National Grid

Project: LNG Tank Inspection

Date: 8/9/2017

Address of Pit Location 1595 Mendon Rd

Completed By: Vaccaro

Level #: 2

Crew: Vaccaro & Galli

Depth in Tank: 36' 8"

Equipment: Periscope

Inspector: Zach Kinton

1595 Mendon Road Cumberland RI

Panel Number	Observation
1	No Observation
2	Point of Interest
3	No Observation
4	No Observation
5	No Observation
6	No Observation
7	Not Inspected
8	Not Inspected
9	Not Inspected
10	Not Inspected
11	Not Inspected
12	Not Inspected
13	No Observation
14	No Observation
15	No Observation
16	Point of Interest
17	No Observation
18	No Observation
19	No Observation
20	Point of Interest
21	No Observation
22	No Observation
23	Point of Interest
24	No Observation
25	No Observation
26	No Observation
27	No Observation
28	No Observation
29	No Observation
30	No Observation
31	No Observation
32	No Observation
33	No Observation
34	No Observation
35	No Observation
36	No Observation
37	No Observation
38	No Observation
39	No Observation



National Grid

Project: LNG Tank Inspection
 Address of Pit Location: 1595 Mendon Rd
 Level #: 3
 Depth in Tank: 33' 4"
 Inspector: Zach Kinton

Date: 8/9/2017
 Completed By: Vaccaro
 Crew: Vaccaro & Galli
 Equipment: Periscope

1595 Mendon Road Cumberland RI

Panel Number	Observation
1	No Observation
2	No Observation
3	No Observation
4	No Observation
5	Not Inspected
6	Not Inspected
7	Not Inspected
8	Not Inspected
9	Not Inspected
10	Not Inspected
11	Not Inspected
12	Not Inspected
13	Not Inspected
14	Not Inspected
15	No Observation
16	No Observation
17	Point of Interest
18	No Observation
19	Point of Interest
20	Point of Interest
21	Point of Interest
22	No Observation
23	No Observation
24	Point of Interest
25	No Observation
26	No Observation
27	No Observation
28	No Observation
29	No Observation
30	No Observation
31	No Observation
32	Point of Interest
33	Point of Interest
34	No Observation
35	Point of Interest
36	No Observation
37	No Observation
38	No Observation



National Grid

Project: LNG Tank Inspection
Address of Pit Location: 1595 Mendon Rd
Level #: 4
Depth in Tank: 30'
Inspector: Zach Kinton

Date: 8/9/2017
Completed By: Vaccaro
Crew: Vaccaro & Galli
Equipment: Periscope

1595 Mendon Road Cumberland RI

Panel Number	Observation
1	No Observation
2	No Observation
3	No Observation
4	No Observation
5	Point of Interest
6	No Observation
7	No Observation
8	No Observation
9	Not Inspected
10	Not Inspected
11	Not Inspected
12	Not Inspected
13	Not Inspected
14	Not Inspected
15	No Observation
16	No Observation
17	No Observation
18	No Observation
19	No Observation
20	No Observation
21	No Observation
22	No Observation
23	No Observation
24	No Observation
25	No Observation
26	No Observation
27	No Observation
28	No Observation
29	No Observation
30	No Observation
31	No Observation
32	No Observation
33	No Observation
34	No Observation
35	No Observation
36	No Observation
37	Point of Interest
38	Point of Interest
39	No Observation

40	No Observation
41	No Observation
42	No Observation
43	No Observation
44	No Observation
45	No Observation
46	No Observation
47	No Observation
48	Point of Interest
49	No Observation
50	Point of Interest
51	Point of Interest
52	No Observation
53	No Observation
54	No Observation
55	No Observation
56	No Observation
57	No Observation
58	No Observation
59	No Observation
60	No Observation



National Grid

Project: LNG Tank Inspection
Address of Pit Location: 1595 Mendon Rd
Level #: 5
Depth in Tank: 20'
Inspector: Zach Kinton

Date: 8/9/2017
Completed By: Vaccaro
Crew: Vaccaro & Galli
Equipment: Periscope

1595 Mendon Road Cumberland RI

Panel Number	Observation
1	No Observation
2	No Observation
3	No Observation
4	No Observation
5	Point of Interest
6	Not Inspected
7	Not Inspected
8	Not Inspected
9	Not Inspected
10	Not Inspected
11	Not Inspected
12	No Observation
13	No Observation
14	No Observation
15	No Observation
16	No Observation
17	No Observation
18	No Observation
19	No Observation
20	No Observation
21	No Observation
22	Point of Interest
23	No Observation
24	No Observation
25	No Observation
26	Point of Interest
27	No Observation
28	Point of Interest
29	No Observation
30	No Observation
31	No Observation
32	Point of Interest
33	No Observation
34	No Observation
35	No Observation
36	No Observation
37	Point of Interest
38	No Observation



ProScience Analytical Services, Inc

Jon Van Hazinga
Tighe & Bond, Worcester
446 Main St.
Worcester, MA 01608

September 07, 2017

Dear Jon Van Hazinga,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by ProScience for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. ProScience recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or the Laboratory Director.

Sincerely,

Patricia Weakley, Optical Asbestos Manager

Aimee Cormier, Laboratory Director

Enclosure: Version 2
LAB BATCH ID: B 106402 CLIENT PROJECT ID: N-1056
Client Ref: Cumberland LNG
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; NVLAP Lab Code 200090-0;
RI ID # AAL-093; VT ID# AL016876

ProScience Analytical Services, Inc.

Client Name: Tighe & Bond, Worcester
PO #: N/A
Client Project #: N-1056
Client Reference: Cumberland LNG
Method: EPA/600/R-93/116

Batch: B106402
Date Sampled: 9/6/2017
Date Received: 9/7/2017
Date Analyzed: 9/7/2017
Date of Report: 9/7/2017

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-01	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Rope Gasket														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-02	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Rope Gasket														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-03	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Rope Gasket														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-04	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Gray Caulking														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-05	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Gray Caulking														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-06	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Gray Caulking														
Location: N/A														
Comments:		Is asbestos present? No. Analyzed: Yes												

ProScience Analytical Services, Inc.

Client Name: Tighe & Bond, Worcester
PO #: N/A
Client Project #: N-1056
Client Reference: Cumberland LNG
Method: EPA/600/R-93/116

Batch: B106402
Date Sampled: 9/6/2017
Date Received: 9/7/2017
Date Analyzed: 9/7/2017
Date of Report: 9/7/2017

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-07	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-08	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-09	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Adhesive Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-10	Gray	10	0	0	0	0	0	0	0	0	0	0	0	90
Description: Gray Coating Location: N/A Comments: Is asbestos present? Yes. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-11		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Gray Coating Location: N/A Comments: Analyzed: No														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
090617-12		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Gray Coating Location: N/A Comments: Analyzed: No														

ProScience Analytical Services, Inc.

Client Name: Tighe & Bond, Worcester
PO #: N/A
Client Project #: N-1056
Client Reference: Cumberland LNG
Method: EPA/600/R-93/116

Batch: B106402
Date Sampled: 9/6/2017
Date Received: 9/7/2017
Date Analyzed: 9/7/2017
Date of Report: 9/7/2017

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	OTH	NON	
090617-13	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Pitch Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

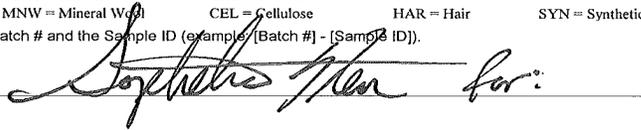
Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	OTH	NON	
090617-14	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Pitch Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	OTH	NON	
090617-15	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Black Pitch Location: N/A Comments: Is asbestos present? No. Analyzed: Yes														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]). * All results are in percentage.

Analyst: Michelle Weakley



Proscience Analytical Services, Inc. www.proscience.net
 22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT
 (circle one)
 3 Hours 5 Hours Same Day Next Day
 2 Days 3 Days 5 Days Other _____

PASI Batch #
 B106402

Client: Tighe & Bond Inc.
 Address: 446 Main Street, Worcester, MA

PLM
 Chain of Custody
 Stop on first positive* YES / NO
 *If no selection is made the lab will analyze all samples

Project #: N-1056 PO: _____
 Project Site: CUMBERLAND LNS
 Contact: Jon Van Hazinga
 Tel / Fax #: 508.989.4959
 Email: javanhazinga@tighebond.com

Relinquished By: _____ Date/Time: 9-6-2017/1440
 Received By Lab: [Signature] Date/Time: 9-27-17/19:00
 Shaded area for lab use only. Due Date: 9/28/17
 # of Samples Received: 15
 Analyzed: _____
 Results: email fax verbal mail By: JK Date: 9/27/17
 Analyst/Date: Michelle Walker Date: 9/27/17

Sample ID	Date Sampled	Description / Location	SSAPE	Stere Scope										Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous		
				Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI								Asbestos Percentage (%)	Asbestos Percentage (%)
080117-01	9/6/17	ROOF GASKET	Ap #1	6	10	14	0														100	
080117-02				6	10	14	0															100
080117-03				6	10	14	0															100
080117-04		GREY CHALKING	Ap #2	6	10	14	0															100
080117-05				6	10	14	0															100
080117-06				6	10	14	0															100

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03; Microscope Olympus BH-2, Serial # circle 1 - 201850, 229027, 235000, 231956
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stere Scope Ash. % Est.
 ver 4.5 Updated 02/08/17
 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).
 Page 2 of 2

Proscience Analytical Services, Inc. www.proscience.net
 22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name: Tighe & Bond Inc.

PAS1 Batch #

Project Name: *Cummins Park*
 11-1551
 806402

QC by: *J. Stetson* Date QC: *9/7/17* Analyzed by: *MAD* Date Analyzed: *9.7.17*

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Chrysotile		Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous	
														⊥								
090617-07	9.6.2017	BLACK ROSES/US	App #3	Black	Hom	RD															100	
090617-08			App #3	Black	Hom	RD																100
090617-09			App #3	Black	Hom	RD																100
090617-10		GREY COATINGS	App #4	Grey	RD	RD																90
090617-11			App #4	Grey	RD	RD																90
090617-12			App #4	Grey	RD	RD																90
090617-13		BLACK FISH	App #5	Black	RD	RD																100
090617-14			App #5	Black	RD	RD																100
090617-15			App #5	Black	RD	RD																100

Comments: Birefringence L = less than .010, M = .011-.029, H = greater than .03; Microscope Olympus BH-2, Serial # circle 1-201850/239027-235000, 231856
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.
 ver 4.5 Updated 02/08/17
 Each layer of multilayered materials are analyzed and charged individually (per NESHA/EPA).
 Page 2 of 2



National Grid

Zach Kinton

Released by:

Mark Jordi, Ph.D.
President

Job Number: J12680

CONFIDENTIAL



200 Gilbert Street
Mansfield, MA 02048
P: (508) 966-1301
jordilabs.com

August 25, 2017

Zach Kinton
National Grid
1595 Mendon Road
Cumberland, RI 02864

P: 781-697-7707
E: zachary.kinton@nationalgrid.com

Dear Zach,

Please find enclosed the test results for your sample described as:

1. Thurane Foam Insulation Material

The following tests were performed:

1. Gas Pycnometry – ASTM D6226

Objective

One (1) polyurethane foam (3" x 3" x 6") sample was submitted for analysis. It was noted that you are decommissioning a tank and you are interested in evaluating the tank's insulation foam. We further understand that the foam is THURANE[®] foam manufactured by the Dow Chemical Company with a specified density of 2 lbs/ft³. It was reported to Jordi Labs that evaluating the samples density is desired. *The goal of this analysis was to determine the skeletal density of the foam sample.*

Summary of Results

It was found that the submitted foam was consistent with a closed foam system. The skeletal density was found to be 0.0321 and 0.0345 g/cm³ for the uncut and cut analysis respectively. This is similar to the expected density of 0.03 g/cm³.

Individual Test Results

A summary of the individual test results is provided below. All accompanying data, including spectra, has been included in the data section of this report.

Gas Pycnometry – ASTM D6226

The Sample was loaded into a chamber and nitrogen was introduced. The volume of the sample, excluding interstitial voids in the sample and any porosity in the individual particles, to which the gas had access to, was measured in triplicate. The sample was then cut in half and retested. The skeletal density was then calculated. It was noted that the density was expected to be 2 lbs/ft³ or 0.03 g/cm³. The foam was found to be consistent with a closed foam system and showed a density similar to what was expected. Results are summarized in **Tables 1 to 3**.

Table 1					
Analysis results prior to cutting					
Cycle	Pressure 1 (psig)	Pressure 2 (psig)	Volume (cm ³)	Volume Deviation (cm ³)	Skeletal Density (g/cm ³)
1	3.741	1.996	27.1664	0.004	0.0321
2	3.633	1.939	27.1420	-0.0200	0.0322
3	3.720	1.985	27.1777	0.0157	0.0321
Average			27.162	Average	0.0321

Table 2					
Analysis results after cutting					
Cycle	Pressure 1 (psig)	Pressure 2 (psig)	Volume (cm ³)	Volume Deviation (cm ³)	Skeletal Density (g/cm ³)
1	3.641	1.962	25.3657	0.0349	0.0344
2	3.652	1.968	25.3406	0.0098	0.0345
3	3.762	2.028	25.2860	-0.0447	0.0345
Average			25.3308	Average	0.0345

Table 3	
Analysis Results	
Open Cell Volume (cm ³)	2.3777
Open Cell Percentage (%)	7.58
Resin + Closed Cell Volume (cm ³)	28.9933
Resin + Closed Cell Percentage (%)	92.42
Sample Mass(g)	0.8732
Resin Volume Percentage (%)	2.78

Analysis Conditions

Gas Pycnometry – ASTM D6226

Analysis was carried out on a AccuPyc II 1340 FoamPYC V2.01 instrument. The analysis was carried out at 21.25 °C using 3 purges. No chamber insert was used and the chamber had a geometric volume of 31.3710 cm³. The equilibrium rate was 0.005 psig/min, expansion rate 73.8331 cm³, and a cell volume of 111.6512 cm³. The gas used was nitrogen.

Closing Comments

Jordi Labs' reports are issued solely for the use of the clients to whom they are addressed. No quotations from reports or use of the Jordi name is permitted except as authorized in writing. The liability of Jordi Labs with respect to the services rendered shall be limited to the amount of consideration paid for such services and do not include any consequential damages.

Jordi Labs specializes in polymer testing and has 30 years experience doing complete polymer deformulations. We are one of the few labs in the country specialized in this type of testing. We will work closely with you to help explain your test results and solve your problem. We appreciate your business and are looking forward to speaking with you concerning these results.

Sincerely,

Adam Eason

Adam Eason, M.S.
Senior Chemist
Jordi Labs LLC

Mark Jordi

Mark Jordi, Ph. D.
President
Jordi Labs LLC

The Narragansett Electric Company
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RIPUC Docket No. 4781
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Attachment COMM 1-3-5

REDACTED

In accordance with PUC Rule 1.2(g), the Company is seeking confidential treatment of Attachment COMM 1-3-5.

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COMM 1-4

Request:

If National Grid conducted any inspections of the Cumberland LNG facility, please advise whether any Division personnel participated as observers, including the date and time of the inspection as well as the identity of the Division personnel.

Response:

Please refer to the table below for a listing of Cumberland LNG facility site visits by the Division of Public Utilities and Carriers (the Division) dating back to December of 2016. Inspection dates include the internal camera analysis that occurred on August 9 and 10, 2017. Division personnel participated as observers for that inspection. The external tank inspection was completed on November 8, 2017. The Company notified Division personnel of that inspection, but the Division did not participate as observers.

Date	Time	Name	Purpose of Visit
1/11/2018	13:25 to 14:00	Lateef Olajide Al Mancini	Portable LNG Trailers
10/6/2017	09:20 to 09:35	Don Ledversis Kevin Lynch	Tank Demolition
9/28/2017	08:30 to 09:50	Don Ledversis	Tank Demolition
8/10/2017	08:35 to 09:45	Don Ledversis	Tank Internal Camera Inspection
8/9/2017	08:00 to 11:00	Don Ledversis Allen Neale	Tank Internal Camera Inspection
6/27/2017	08:45 to 10:50	Don Ledversis	PHMSA Visit (Concrete Tank Construction)
4/4/2017	09:35 to 10:37	Don Ledversis Lateef Olajide	Tank Construction Photo Inspection/Dike Drain Code Discussion
12/14/2016	09:25 to 13:00	Don Ledversis	Annual LNG Operations Audit

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COMM 1-5

Request:

Identify what efforts, if any, National Grid has undertaken to resell or retain any and all existing high-cost components installed at the Cumberland LNG facility. If any high-cost components have been sold, please identify the sale price, the purchaser's identity and the original cost of the component, as well as the depreciated value of the component.

Response:

Please refer to Attachment COMM 1-5 for a list of identified plant components. Disposition methods include retaining for internal use, scrap, direct sale, or auction. The Company reviewed the items identified on this list with the Division of Public Utilities and Carriers. At this time, none of the items on this list have transferred through a direct sale or auction. However, the attachment does identify items that were included as part of a \$13,000 scrap value credit received from the demolition contractor, Costello Dismantling Company, Inc. These items were fully depreciated.

**National Grid
Cumberland LNG
Demolition List**

As part of planning the Cumberland LNG demolition, the Company had identified 14 equipment components for possible sale. These items were reviewed and classified into one of three "Disposition" categories. Age and expected post demolition condition were contributing factors in making those classifications. Value of some equipment can be limited based on the fact that it is unique to this particular facility. Items noted as "TBD" below will be provided as the information is available.

Internal Use	Items 2 to 5 and 14 will be either retained for future use/spare parts.
Scrap Sale	Age and limited value contributed to the designation of items 7 to 10 and 14 for scrap sale. The credit noted below for items 7 to 10 was reflected as a reduction in the amount paid to the demolition contractor.
Research Market or Auction	For items 1, 6 and 11 to 13 the Company is in the process of researching market for potential buyers. If that is not successful the equipment will be sold by auction, which is the method that has historically been used by the Company when selling assets to non affiliates. This group includes equipment that is of a more recent vintage year. Estimated purchase costs are provided below.

Item No.	Item	Quantity	Description	Location	Comments	Disposition	Estimated Value/Purchase Cost	Actual Proceeds
1	Portable Submersible LNG Pump	1	New in crate	Portable Container	Under review for potential sale.	Research market for potential buyer	\$ 75,700	TBD
2	LNG Truck Transfer Hose	1	20' x 3" Braided Stainless Flex Hose	Portable Container	Retain by the Company for future use.	Internal Use	N/A	N/A
3	"PECS" supply hose	1	20' x 6" Braided Stainless Flex Hose	Compressor Area	Retain by the Company for future use.	Internal Use	N/A	N/A
4	Vibration Monitoring System	4	Emerson 2 - LNG Pumps/Motors 2 - BOCs	Tank Top & BOC Building	Will be retained at Cumberland with boiler and glycol pumps.	Internal Use	N/A	N/A
5	Automated Valve	2	Fisher (pneumatic) 1 - 1.5" 1 - 3"	Tank Top	Retain by the Company for future use.	Internal Use	N/A	N/A
6	Gauging System	1	Enraf unit and display	Sutton, MA	Under review for potential sale.	Research market for potential buyer	Book - \$61,876 NBV - \$36,619	TBD
7	Boil-Off Compressors	2	Gardner-Denver	BOC Building	Resale market evaluated as working unit and spare parts. Limited market value due to age (1969) and specialty of application.	Scrap Sale	Fully Depreciated	

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Research Market or Auction	For items 1, 6 and 11 to 13 the Company is in the process of researching market for potential buyers. If that is not successful the equipment will be sold by auction, which is the method that has historically been used by the Company when selling assets to non affiliates. This group includes equipment that is of a more recent vintage year. Estimated purchase costs are provided below.

Item No.	Item	Quantity	Description	Location	Comments	Disposition	Estimated Value/Purchase Cost	Actual Proceeds
8	LNG Pumps	2	Sulzer – 80GPM/10 Stage	Tank Top	Built to order for the application and and tank configuration. Age (approx 1970) and cost to remove and handle warrant scrap value only.	Scrap Sale	Fully Depreciated	Covered under a \$13,000 credit provided by demolition contractor
9	Relief Valves and Vacuum Breaker	3	1 - 10" RV 1 - 12" RV	Tank Top	Age and disassembly costs warrant scrap value.	Scrap Sale	Fully Depreciated	
10	Assorted stainless piping and old valves				Review for internal use or scrap value.	Scrap Sale	N/A	
11	LNG Pump	1	2013 spare rebuilt Sulzer pump	Transferred to Investment Recovery	Unable to return to supplier for credit. Plan is to stage for auction.	Research market for buyer prior to auction	Book - \$163,157 NBV - \$146,990	TBD
12	LNG Pump Motor	5	GE – 25 HP 2 - Mounted 3 - Spare	Transferred to Investment Recovery	Spare unmounted motors to be staged for auction.	Research market for buyer prior to auction	Current price is \$5,300 each	TBD
13	Boil off heater	1	Chromalox Heater; Model TMIS-12183E3XX; PN 500730021	Transferred to Investment Recovery	Will be staged for auction.	Research market for buyer prior to auction	\$9,100	TBD

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Item No.	Item	Quantity	Description	Location	Comments	Disposition	Estimated Value/Purchase Cost	Actual Proceeds
14	Jet Compressor	1	Specialty built machine designed for the Cumberland plant; power consumption savings contributed to the investment justification.	Transferred to Investment Recovery	Original plan was to stage for auction. However, a determination was made there was no market due to the specialized nature of the equipment that was designed specifically for the Cumberland plant. Compressor to be stripped of parts to be retained for internal use. Remaining stainless steel to be sold for scrap in mid to late February of 2018.	Internal Use/Scrap	Book (CHI) \$424,578 NBV (Est) \$352,400	TBD

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COMM 1-6

Request:

Identify whether any additional damage occurred to the Cumberland LNG facility after filing the 2018 Gas ISR plan. If so, what damage?

Response:

There has been no damage to the Cumberland LNG facility since the Company filed the Fiscal Year 2018 Gas Infrastructure, Safety, and Reliability Plan (the Plan) on December 1, 2016 or the Revised Plan on January 26, 2017.