

Appendix A

Summary Investigation Into the Aquidneck Island Gas

Service Interruption of January 21, 2019

Copies of Selected Documents Cited in Report

NOTE REGARDING CONFIDENTIALITY: Most of the documents contain labels indicating they are "confidential." During the pendency of the investigation, they were exempt from public disclosure as "investigatory records" in a pending investigation. However, once the investigation came to a conclusion, most of the documents cited in the report were no longer confidential as "investigatory records," unless they had a separate basis for confidentiality, such as "Critical Energy Infrastructure Information", confidential information about individual gas customers, or other confidentiality categories. Those retaining an independent basis of confidentiality have been wholly or partially redacted as noted. Unless so indicated, the documents are no longer "confidential," despite the labels.

<u>Document</u>		
<u>Ref. #</u>	<u>Confidentiality Status</u>	<u>Document Name</u>
1		Division 1-1
2		Division 1-2 & Attachment DIV 1-2.
3	CONFIDENTIAL	Division 1-4 and Attachment DIV 1-4-2 (Confidential Energy Infrastructure map fully REDACTED)
4	CONFIDENTIAL	Attachment DIV 1-7S (Confidential Energy Infrastructure Information fully REDACTED)
5		Division 1-9
6		Division 1-12 & Attachment DIV 1-12 pages 1-3
7		Attachment DIV 1-12, page 6.
8	REDACTIONS	Division 1-14 (Redacted individual customer addresses)
9		Division 1-26 Supplemental
10		Attachment DIV 1-26S
11		NG LNG 2-1
12		Division 2-2 Supplemental (including cover letter)
13		Attachment NG LNG 2-8-6 pages 6 & 7
14		Division 2-10
15		Division 2-11
16		Division 2-18.
17		Division 3-4
18		Division 3-5
19		Division 3-9
20		Division 4-1 and Attachment DIV 4-1 (copy of Operational Balancing Agreement)
21		Attachment DIV 4-4-1, page 39.
22		Attachment DIV 4-4-1, page 45.
23		Attachment DIV 4-4-1, page 58.
24		Attachment DIV 4-5-1, pages 8-11.
25		Attachment DIV 4-5-1, pages 19-23.
26		Attachment DIV 4-6-1, page 6.
27		Attachment DIV 4-7-1, page 3.
28		Division 6-3
29		Division 6-4
30		Division 6-12
31		Division 7-1
32		Division 7-2
33		Division 7-6
34		Division 9-2
35		Division 9-4
36		Division 9-6

37		Division 11-3
38		Division 12-12
39		Division 12-13
40		Division 12-14
41		Division 12-16
42		Division 12-26
43		Division 13-3
44		Division 15-2
45		Division 16-1
46		Division 17-1
47		Division 17-5
48		Division 17-7
49		Division 17-8
50		Division 17-12
51		Attachment DIV 17-12-1, page 1 of 1
52		Division 18-1
53		Division 18-2
54		Division 18-3
55		Division 18-4
56		Division 18-8
57		Division 18-9
58		Division 18-10
59		Division 18-11
60	REDACTIONS	Division 18-12 (sample outage card -- names, phones, & address REDACTED)
61		Division 19-1
62		Division 19-2
63		Division 19-3
64	CONFIDENTIAL	Division 21-1 & Attachment DIV 21-1 (Emergency Response Plan fully REDACTED)
65	CONFIDENTIAL	Division 21-2 (After-Action Review fully REDACTED)
66		Division 21-4
67		Division 21-5
68		Division 22-1
69		Docket 4199, Division 1-3 (c) (excerpt from proceeding in 2010)
70		Enbridge Chronology for the Division
71		Letter from K. Lynch to National Grid 1/24/19
72		Letter from National Grid to K. Lynch 1/25/19
73		Algonquin Critical Notice: 1/29/19
74		Algonquin Summary to PHMSA 2/1/19
75		Docket 4755 Division 10-25 Corrected
76		Algonquin Response to PHMSA Item 2
77		Algonquin Response to PHMSA Item JH 33
78		Algonquin Response to PHMSA Item 38
79	REDACTIONS	Algonquin Response to PHMSA Item 45 (Some confidential information REDACTED)
80	REDACTIONS	Algonquin Response to PHMSA Item JH 50 (REDACTED Confidential Modeling Information)
81		NG LNG Memo to PHMSA 6/11/19
82		Amended Protective Order

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's First Set of Data Requests
Issued on February 5, 2019

Confidential
Division 1-1

Request:

Please provide a chronological explanation/narrative, describing the events of January 21, 2019 and the Company's responses, from when the Company first detected a low-pressure condition at the Weymouth take station in Massachusetts to the moment when the Company made its decision to curtail service to customers served off the low-pressure system in Middletown and then Newport. This explanation should also include a timeline in hourly/15-minute intervals, as appropriate and applicable to the sequence of events.

Response:

The Company continues to collect and review information concerning the events of January 21, 2019, and therefore reserves its right to amend and/or supplement this response.

The following is a chronological explanation of the events of January 21, 2019, based on the Company's current understanding. The times referenced in this narrative reflect the timeline that the Company is able to provide regarding the sequence of events.

The Company's gas distribution systems operated within normal pressure and flow ranges throughout the night of January 20 into the morning of January 21. At 4:00 a.m. on January 21, the Algonquin Gas Transmission (Algonquin) G-System supplying Rhode Island had inlet pressures ranging from 639 psig at the Company's take stations in Providence to 495 psig at the Portsmouth take station. Those pressures declined at a normal and expected rate as the morning demand increased. At 8:26 a.m., the Company received a low-pressure alert for the Portsmouth take station when the inlet pressure fell to 250 psig. That pressure alert fell within usual operating parameters given the cold weather and the typically heavy morning demand through 8:00 a.m.; system demand typically falls after 8:00 a.m.

At approximately 8:35 a.m., the Company received a low-pressure alert at the inlet supply to the Milton (Ponkapoag) take station, the first indication of a pressure problem with the Algonquin system in Massachusetts. Following that low-pressure alert, the Company asked the LNG plant in Dorchester, Massachusetts to increase its sendout to reduce demand on the Algonquin system. Still, the pressure across the Algonquin G-System unexpectedly continued to drop at an unusual and accelerated rate. By 9:30 a.m., with system demand dropping, the pressure drop on the Algonquin system briefly slowed and operations trended on a normal path for a short period of time.

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At 9:43 a.m., Wayne Page from Algonquin called Paul Loiacono at National Grid's Gas Control Operations Center in Northborough, Massachusetts and notified him that Algonquin had a problem with a frozen valve at Algonquin's Weymouth, Massachusetts station that would impact the G-System. This explained the low pressures the Company observed on Algonquin's systems. Mr. Page apologized and explained that he expected the frozen valve would restrict gas flow and that the Company would see impacts on the G-System. The pressures at National Grid's regulator station in Weymouth lost almost 500 psig in a matter of two hours – falling from 845 psig to 380 psig because of Algonquin's frozen valve. At the time of the call, Algonquin reported it had taken measures to re-establish flow through the frozen valve at its Weymouth station to receive gas from the Maritimes and Northeast line into the Algonquin line. Although pressures recovered in that area of Massachusetts, low pressures persisted on the G-System in Rhode Island and Massachusetts.

When this drop in pressure resulted from the frozen valve at the Weymouth Station, the Leadership Team in the Gas Control room in Melville, New York shifted its attention to the circumstances on Aquidneck Island. Richard Delaney, National Grid's Director of Gas Control, actively monitored the pressure drop from the Melville facility and alerted Ross Turrini, National Grid's Senior Vice President for Gas Engineering and Control Center Operations. Mr. Turrini immediately travelled to the Melville facility to manage the response to the developing circumstances. Mr. Turrini also remained in contact with Timothy Horan, the Company's Jurisdictional President, and Cordelia O'Hara, National Grid's Chief Operating Officer for gas operations, and advised them on the Company's response and the reasons for those steps.

The Company also alerted Thomas Smith, National Grid's Director of LNG Operations. He contacted Kathleen Sullivan, the Director LNG Rhode Island, to update her on the circumstances on Aquidneck Island. At approximately 11:30 a.m., Ms. Sullivan and her team began mobilizing temporary portable LNG operations at Old Mill Lane in Portsmouth.

As part of its broader response, National Grid (1) increased LNG sendout at its facilities in Rhode Island and Massachusetts in an effort to reduce demand on the Algonquin G-System; (2) increased sendout from the Tennessee Gas pipeline to further reduce such demand; and (3) prepared its Instrumentation & Regulation (I&R) teams to bypass Low Pressure regulators in Newport, if that became necessary.

At 10:00 a.m., the inlet pressures from Algonquin to the Portsmouth take station fell to 97.7 psig (below the minimum 100 psig contractual pressure). At 10:26 a.m., the Company instructed I&R to bypass the first regulator in Newport, at Wellington and Thames Street. The Company

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continued to manually open bypass valves at regulator stations at other locations as pressures continued to decline across Aquidneck Island.

Gas Control maintained constant communication with the I&R teams as the low-pressure situation on Aquidneck Island escalated. The Company reassigned all four Rhode Island I&R teams to Aquidneck Island to take responsive actions to maintain pressure. As Gas Control monitored the situation, it directed the I&R crews to take measures at the regulator stations and at the Portsmouth take station to mitigate continued pressure drops. There are six low pressure regulating stations on Aquidneck Island. These stations take gas from the higher-pressure supply and reduce down to their outlet pressure of 9.5-10-inch water column (w.c.). The I&R teams began bypassing the valves at each of the regulator stations on Aquidneck Island to increase pressure. The Company also stationed I&R personnel at the Portsmouth take station to take steps at that location to mitigate dropping pressures.

More specifically, by approximately 11:00 a.m., the Company put the regulator station at Admiral Kalbfus at Third Street on bypass. At approximately 11:15 a.m., the I&R crews removed the boot between the two lines at the Portsmouth take station outlet to decrease the pressure drop across the take station regulators. At 12:06, the Company decided to shut off the regulator on the Wolcott Avenue station in Middletown. At 12:26 p.m., the Company completed the shutdown of the Wolcott Avenue station, shutting off gas service to the customers on the portion of the Aquidneck Island distribution system beyond the Wolcott Avenue station. The Company made this decision (1) because the district low point at Tuckerman Avenue indicated a low pressure at the end point of the district, and (2) to shed load on the system overall to boost pressures and avoid broader system shut offs. By isolating the smaller district, the Company hoped to maintain pressures to the higher-pressure system supplying gas to the larger integrated low-pressure district in Newport. When the Company shut off the Wolcott Avenue station, it already had placed the following stations on bypass to throttle pressures: Admiral Kalbfus, Bayfront at Thames low pressure, Bayfront at Thames high pressure, and Newman at Aquidneck. The Company currently does not have the exact timing on these bypass measures because it directed its I&R crews to work as quickly as possible to take all possible actions to maintain pressures and avoid additional service outages.

At approximately 12:22 p.m., the inlet pressure at the Portsmouth take station fell all the way to 36.4 psig, the lowest recorded pressure. Two minutes later, the Company recorded its lowest flow reading into the Portsmouth take station – 599.7 DTHR.

The LNG operations team was working to get the temporary portable LNG facilities ready to operate at the Old Mill Lane location in Portsmouth. The Company quickly set up the LNG

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facilities, but it was unable to obtain the necessary glycol to operate them. Even with glycol, it is uncertain whether the Company could have operated the LNG facilities in time to prevent the shutdown of the low-pressure system that occurred that evening.

Despite the substantial measures the Company implemented to mitigate the pressure drops on Aquidneck Island, the Company began receiving reports of service outages on its low-pressure system in Newport.

Although system pressures began to recover, the Company's concern for the safety of its customers and the communities increased as it continued to receive numerous outage calls on the low-pressure system on Aquidneck Island. The Company rapidly considered its options for addressing the outages. The Company dispatched crews to gather data from the field about the locations of the outages to determine if the Company could take a systematic approach and shut off fewer than all the customers and/or sections of the system to preserve service in other sections. Engineering teams immediately began to develop customer lists of impacted accounts in the Middletown area. While these actions were ongoing, Dispatch and Field Customer Meter Services crews continued responding to the Newport area of Aquidneck Island. Crews responded to calls in areas at the southern periphery of the low-pressure district furthest away from regulating stations. As pressure in the southern portion of the Newport low-pressure system continued to fall, the Company "locked" the two southern district regulators (Bayfront at Thames and Ocean Drive at Carol) at their then-current pressures (approximately 1-2-inch w.c.) to prevent the system from rebuilding pressure in sections of the system that potentially had "lost" gas. The Company did so to prevent hazards associated with pilot-driven gas equipment (explained below).

The Company continued to monitor pressures in the three northern feeding stations, and the system appeared to maintain adequate pressures in the north and central portions of the City of Newport. Engineering teams continued to develop customer lists of the impacted areas in the integrated district. Communications between Gas Dispatch and the team inside Gas Control occurred as the Company assessed the number and tentative locations of "no gas" calls in the Newport area. The Company expected that areas of no gas calls would occur on the southern peripheries or end points and crews could isolate those segments and maintain supply to the core of the integrated district. At 4:30 p.m., Dispatch provided a list of no gas calls. Engineering then prepared a map of the outages. National Grid then overlaid that outage map on the entire integrated low-pressure system and immediately recognized that the outages spread across all segments, including the northern and central segments. The wide distribution of those outages left the Company with no fully functioning segment of the system to protect and continue service

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without incurring substantial safety risks. Please see Attachment DIV 1-1 for copies of these maps.

At 6:50 p.m., the Company ordered its crews to shut down the entire low-pressure system to protect the health and safety of the customers and the communities. The Company acted to prevent hazards and safety risks occurring when gas flow returned to homes that experienced gas outages. Restored gas flow created safety risks for each home or businesses using pilot-driven gas equipment – the gas could escape into the home or structure and create health and explosion risks if the pilots did not re-light. The Company does not maintain records of the types of gas equipment in each home or business, but information provided by Company field employees strongly suggested the presence of pilot-driven gas equipment in these historic communities. The Company completed the first of five regulator shut downs at approximately 7:27 p.m. and completed the last regulator shut down at approximately 8:28 p.m. The regulator shut downs ensured that the sudden return of gas pressure to homes and businesses that experienced outages would not inadvertently create substantial safety risks that could result in personal injury or property damage. After the Company completed the shut downs, it continued to mitigate these hazards by shutting off gas service to each home or business and then manually checking and relighting every home or business to ensure the proper functioning of pilot-driven equipment and appliances.

After the Company shut down service to the low-pressure district, it transferred Operations for the Newport and Middletown portions of Aquidneck Island to the Incident Command Team established to complete the isolation, purge, and relight of the impacted sections.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
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Confidential
Division 1-2

Request:

Please provide copies of any "event logs" maintained by the Company that are relevant to the gas outage of January 21, 2019.

Response:

Please see Attachment DIV 1-2 for the requested information.

Log Detail Report



Log Entry ID: 237007 **Location:** New England GC
Log: Emergencies **Created By/Date:** Maria F O'Neill - 01/24/2019 10:42
Crew: NA **Mod By/Date:** Maria F O'Neill - 01/24/2019 10:46
Shift: Days **Completed By/Date:** Maria F O'Neill - 01/24/2019 10:42
Log Date: 01/21/2019 21:00

Comments: As a result of a frozen valve on Enbridge (AGT) Maritimes system and severe cold weather in the Northeast pressure was lost to the Portsmouth GS.

ESD Notifications (emails attached):

12:15 - NE Dispatch & Scheduling received notification at 10:45 from Gas Control regarding a significant drop in pressure in the Newport, RI area. Currently, there are numerous 'No Gas/Poor Pressure' orders in the system in Newport, RI. CMS Lead Supervisor Rugg and Field Ops Supervisor Phillips have been notified. Several CMS Servicepersons and Field Ops Crews have been dispatched to the area. Field Ops Director O'Brien has been notified. NE Dispatch & Scheduling Manager Gunter and Director Jim Patterson have been notified. Regulatory Manager Maddox has been notified and is enroute. RI Community Relations Director Kresse has been notified. RIPUC has been notified. Updates to follow as more information becomes available.

14:37 - NE Dispatch & Scheduling has received an update at 14:00 from Gas Control regarding the drop in pressure in the Newport/Middletown, RI area. As part of I&R's investigation, a regulator pit station on Wolcott Avenue in Middletown has been shut off. This has caused 368 customers to be without gas service. All CMS Servicepersons from the Providence and Cumberland platforms have been contacted to report to the staging station in Newport. They are continuing to investigate and check pressures in the surrounding areas. All Field Ops Crews have been contacted to stand-by for further instruction. Approximately 200 'No Gas/No Pressure' orders in Newport and Middletown are currently in the system. CMS Supervisor Andrew has been contacted to mobilize assistance from CMS Servicepersons in Cape Cod, MA. Regulatory Manager Maddox has been contacted. Updates to follow as more information becomes available.

20:50 - NE Dispatch & Scheduling received an update at 19:00 from Gas Control that the affected low pressure system in Newport will be shut down. This will result in 6,732 customers to be interrupted. This is in addition to the 368 customers that were shut off in Middletown earlier today. The total customer count affected from this event is 7,100. Gas meters are beginning to be secured tonight. Updates to follow once all meters have been secured.

Shift Turnover Inclusion

Include on No
Turnover

NE-Emergency Information

Address Newport & Middletown Date & Time 01/21/2019 10:31

NE-State

State RI

NE-Town Code

Town Code New

SOP Related Emergency

Emergency No
caused by SOP

Event Type

Event Type	System Operating Pressure	Normal Pressure	Lowest Pressure Observed	Highest Pressure Observed	Operations Engineer Notified	Emergency Dispatch Notified
System Pressure	Transmission	600psi	37psi	n/a	Yes	Yes

Customer Impact

Customer Impact	Number of Customers	Critical Customers Affected
Confirmed	> 100	No

Equipment out of service

Equipment N/A
Status

Attachment	Type	Created By	Create Date
Abnormal Event - Loss of Pipeline Supply - Newport RI.msg	File	Maria F O'Neill	01/24/2019 10:42
Update Abnormal Event - Loss of Pipeline Supply - Newport RI.msg	File	Maria F O'Neill	01/24/2019 10:43
Gas System Emergency - Loss of Pipeline Facility Supply - Newport RI.msg	File	Maria F O'Neill	01/24/2019 10:43

Log Detail Report



Log Entry ID:	236581	Location:	New England GC
Log:	LNG	Created By/Date:	Kevin W Kerrigan - 01/21/2019 04:49
Crew:	NA	Mod By/Date:	Mark A Breault - 01/21/2019 12:15
Shift:	Nights		
Log Date:	01/21/2019 04:48		

Comments: Providence LNG called---shut down is currently trying to come back online 04:48

Shift Turnover Inclusion

Include on Yes
Turnover

NE-LNG

LNG Plant	Providence	Reason	Other
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NE-State

State	RI
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Appended Comments

Called Plant to find out what went wrong, plant tripped out on a ESD and they have one valve that won't reset. They called a tech to check it out. (Mark A Breault, 01/21/2019 05:29)

Plant is coming back on line. (Mark A Breault, 01/21/2019 08:33)

Plant was at 2000 per hour and still had problems. Frank called to report they have made the repairs and Gas Control asked for 6000 per hour. (Mark A Breault, 01/21/2019 11:55)

Plant up and running at 5500 per hour and holding. (Mark A Breault, 01/21/2019 12:15)

Log Detail Report



Log Entry ID: 236713 **Location:** New England GC
Log: Emergencies **Created By/Date:** Jeffrey G Baker - 01/21/2019 12:20
Crew: NA **Mod By/Date:** Dustin J Pohlman - 01/21/2019 18:15
Shift: Days **Completed By/Date:** Jeffrey G Baker - 01/21/2019 12:20
Log Date: 01/21/2019 12:06

Comments: Due to AGT pipeline issue impacting the system down stream from Portsmouth GS, the single feed LP system at Mid - Wolcott Ave is being shut down due to low pressures. ESD is aware, Ops Eng has prepared a customer count for the Portsmouth System, and Mike Romano has been made aware of the decision to shut down Wolcott Ave and has a crew en route.

Portsmouth GS is currently on bypass in addition to the regulator stations at New - Admiral Kalbfus, New - Bayfront @ Thames LP, and New - Bayfront @ Thames HP.

Shift Turnover Inclusion

Include on Turnover Yes

NE-Emergency Information

Address Mid, Wolcott Ave **Date & Time** 01/21/2019 12:06

NE-State

State RI

NE-Town Code

Town Code RI-Por

SOP Related Emergency

Emergency caused by SOP No

Event Type

Event Type	System Operating Pressure	Normal Pressure	Lowest Pressure Observed	Highest Pressure Observed	Operations Engineer Notified	Emergency Dispatch Notified
System Pressure	Transmission	600 psi	37 psig	n/a	Yes	Yes

Customer Impact

Customer Impact	Number of Customers	Critical Customers Affected	Customer List Sent To Dispatch
Confirmed	> 100	No	Yes

Equipment out of service

Equipment Status N/A

Attachment	Type	Created By	Create Date
Portsmouth TS Low Inlet Issue_Wolcott Newport LP Overview_Outage Maps.pdf	File	Dustin J Pohlman	01/21/2019 18:14

Appended Comments

Chris Sanborn and James Barnett are at Mid - Newman @ Aquidneck with the station on bypass. (Jeffrey G Baker, 01/21/2019 13:25)

Per Chris Sanborn. Worker reg is now controlling. Approx 7 psig. Monitor reg is still bypassed. (Patrick Buckley, 01/21/2019 15:19)

Previous append is for Newman @ Aquidneck, Middletown (Patrick Buckley, 01/21/2019 15:20)

Portsmouth GS odorant pump failure, James Barnett reset/cleared pump failure. He is currently monitoring pump to ensure proper recovery. (Dustin J Pohlman, 01/21/2019 17:24)

Per Mike Romano, New - Admiral Kalbfus @ Third is no longer on bypass (Dustin J Pohlman, 01/21/2019 17:52)

From: Delzer, Derek
Sent: Monday, January 21, 2019 8:50 PM
To: NE-Disp-B2; NE-Disp-B
Subject: Gas System Emergency - Loss of Pipeline Facility Supply - Newport, RI

NE Dispatch & Scheduling received an update at 19:00 from Gas Control that the affected low pressure system in Newport will be shut down. This will result in 6,732 customers to be interrupted. This is in addition to the 368 customers that were shut off in Middletown earlier today. The total customer count affected from this event is 7,100. Gas meters are beginning to be secured tonight. Updates to follow once all meters have been secured.

Derek Delzer

national**grid**

Supervisor

NE Dispatch & Scheduling

Office: (877) 304-1203

From: Delzer, Derek
Sent: Monday, January 21, 2019 12:15 PM
To: NE-Disp-C; NE-Disp-D; NE-Disp-B2; NE-Disp-B
Subject: Abnormal Event - Loss of Pipeline Supply - Newport, RI

NE Dispatch & Scheduling received notification at 10:45 from Gas Control regarding a significant drop in pressure in the Newport, RI area. Currently, there are numerous 'No Gas/Poor Pressure' orders in the system in Newport, RI. CMS Lead Supervisor Rugg and Field Ops Supervisor Phillips have been notified. Several CMS Servicepersons and Field Ops Crews have been dispatched to the area. Field Ops Director O'Brien has been notified. NE Dispatch & Scheduling Manager Gunter and Director Jim Patterson have been notified. Regulatory Manager Maddox has been notified and is enroute. RI Community Relations Director Kresse has been notified. RIPUC has been notified. Updates to follow as more information becomes available.

Derek Delzer

nationalgrid

Supervisor

NE Dispatch & Scheduling

Office: (877) 304-1203

From: Delzer, Derek
Sent: Monday, January 21, 2019 2:37 PM
To: NE-Disp-C; NE-Disp-D; NE-Disp-B2; NE-Disp-B
Subject: Update: Abnormal Event - Loss of Pipeline Supply - Newport, RI

NE Dispatch & Scheduling has received an update at 14:00 from Gas Control regarding the drop in pressure in the Newport/Middletown, RI area. As part of I&R's investigation, a regulator pit station on Wolcott Avenue in Middletown has been shut off. This has caused 368 customers to be without gas service. All CMS Servicepersons from the Providence and Cumberland platforms have been contacted to report to the staging station in Newport. They are continuing to investigate and check pressures in the surrounding areas. All Field Ops Crews have been contacted to stand-by for further instruction. Approximately 200 'No Gas/No Pressure' orders in Newport and Middletown are currently in the system. CMS Supervisor Andrew has been contacted to mobilize assistance from CMS Servicepersons in Cape Cod, MA. Regulatory Manager Maddox has been contacted. Updates to follow as more information becomes available.

Derek Delzer

nationalgrid

Supervisor

NE Dispatch & Scheduling

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The Narragansett Electric Company
d/b/a National Grid
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Confidential
Division 1-4

Request:

Using another copy of the map requested in data request 1-3, please highlight the areas where service was curtailed on January 21, 2019. Please also indicate the areas where the customers first called indicating service problems on the morning of January 21, 2019.

Response:

Please see Confidential Attachment DIV 1-4-1 for the map requested in Division 1-3 by distribution pipe material highlighting the areas where service was curtailed on January 21, 2019, and indicating the areas where customers called indicating service problems until 5:51 p.m. on January 21, 2019.

Please see Confidential Attachment DIV 1-4-2 for the map requested in Division 1-3 by distribution pipe operating pressure highlighting the areas where service was curtailed on January 21, 2019, and indicating the areas where customers called indicating service problems until 5:51 p.m. on January 21, 2019.

In addition to the electronic copies of Confidential Attachment DIV 1-4-1 and Confidential Attachment DIV 1-4-2 in PDF format, the Company is also providing six 24-inch by 48-inch paper copies of the maps.

Also, please see Confidential Attachment DIV 1-1 for maps showing the outage locations called in to the Company.

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Attachments DIV 1-4-1 and DIV 1-4-2

REDACTED

Attachment DIV 1-7S

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ALL REDACTED

CONFIDENTIAL- Critical Energy Infrastructure Information.

**U.S. Gas Distribution
Winter Model Calibration &
Performance Report
2018-2019 WINTER
Strategic Asset and System Planning
June 2019**

The Narragansett Electric Company
d/b/a National Grid
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Confidential
Division 1-9

Request:

Has the Company experienced low pressure conditions that needed an immediate response (whether or not outages occurred) and/or incidents resulting in outages on the Island in the past?

- a. If so, please provide a list of low pressure, outage events, near outage events, date, cause and remediation.
- b. What improvements have been made as a result of these issues?

Response:

- a. Yes, the Company did experience a low-pressure condition caused by low inlet pressures from Algonquin Gas Transmission (Algonquin) on the G Lateral to the Portsmouth Take Station requiring a response on March 7, 2014. The response resulted in throttling valves at one regulator station and the Company proactively reaching out the Newport Navy Base Central Heating Plant to request the Navy cease burning natural gas and swap to its alternate fuel (oil). Asking the Navy Base to swap allowed the Company to preserve pressure by shedding demand on Aquidneck Island and helped preserve pressures to the Company's other customers. Other than this request for help, no customer outages resulted from the low-pressure condition. The cause of this event was an upstream supply issue on Algonquin.
- b. The Company installed a 99 psig gas main in Gibbs Avenue from Bliss Road to Kay Street in Newport, which provides a reliability loop in the 99 psig system and improves downstream pressure at the inlet to the Bayfront at Thames regulator station in Newport.

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Division 1-12

Request:

Please identify the organizations/departments within National Grid that have management authority and control over each of the following business activities, including organizational charts leading to the final direct reports to the Chief Executive Officers of National Grid in the United States and the UK, identifying employees in the following functions by name, title, responsibility, and company employer.

- a. Control room operations;
- b. Gas distribution operations;
- c. Gas engineering;
- d. Gas distribution planning;
- e. Gas procurement;
- f. Gas capacity planning.

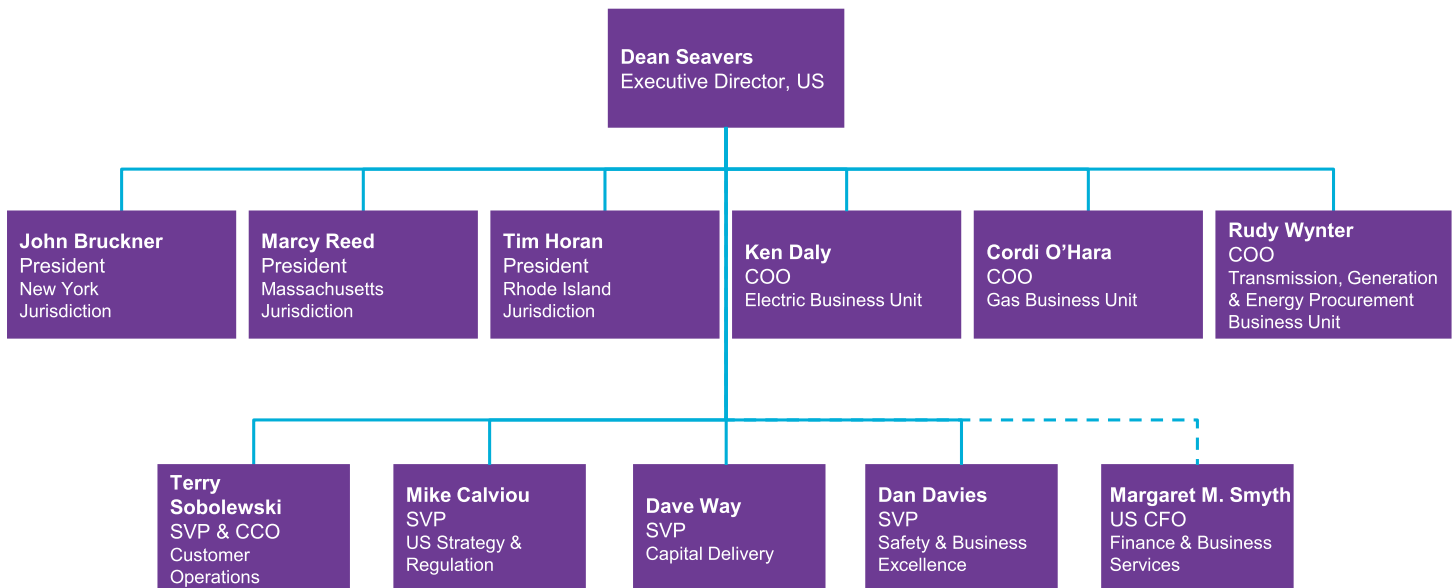
Response:

Attachment DIV 1-12 provides the organizational charts for the requested business functions through National Grid's Executive Director of the United States, who is the final direct report to the Chief Executive Officer of National Grid in the United Kingdom. All employees listed in Attachment DIV 1-12 are employed by National Grid USA Service Company, Inc.

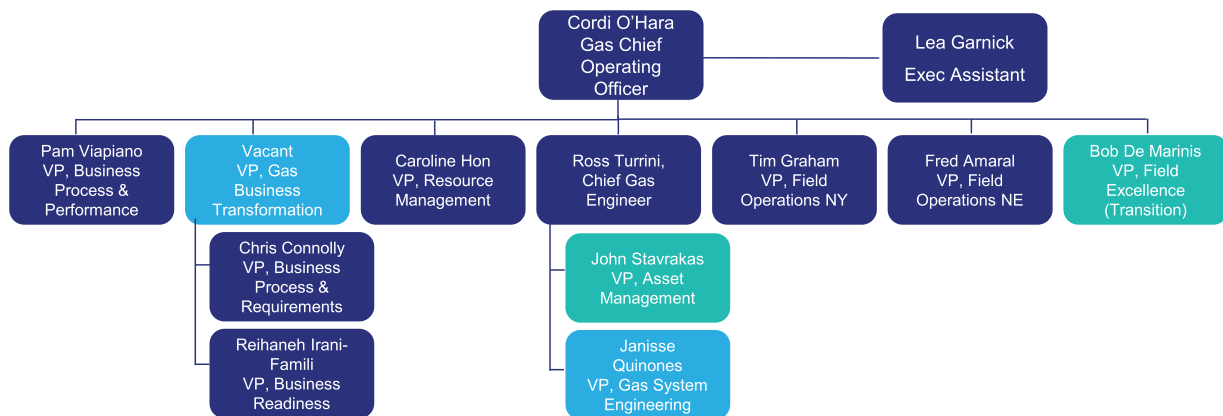
- a. Please see Attachment DIV 1-12 at pages 1, 2, and 3 for the requested information for Gas Control Operations.
- b. Please see Attachment DIV 1-12 at pages 1, 2, and 4 for the requested information for Gas Field Operations for New England.
- c. Please see Attachment DIV 1-12 at pages 1, 2, and 5 for the requested information for Gas Distribution Engineering.
- d. Please see Attachment DIV 1-12 at pages 1, 2, and 5 for the requested information for Gas System Planning.
- e. and f. Please see Attachment DIV 1-12 at pages 1, 6, and 7 for the requested information for Energy Procurement, including Compliance, Contracting & Hedging, Wholesale Gas Supply, and Gas Supply Planning.



US Leadership Team

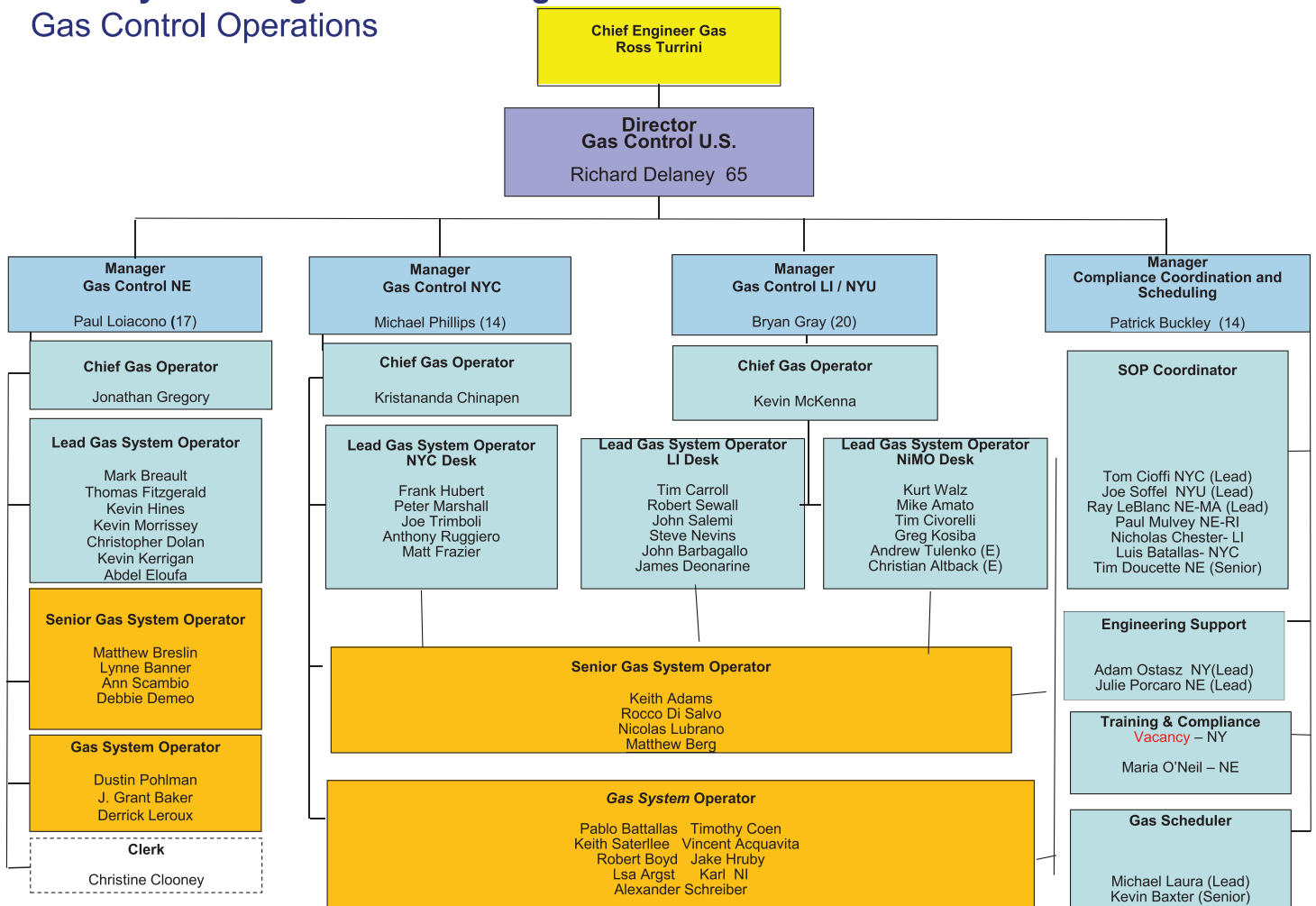


Gas Leadership



National Grid

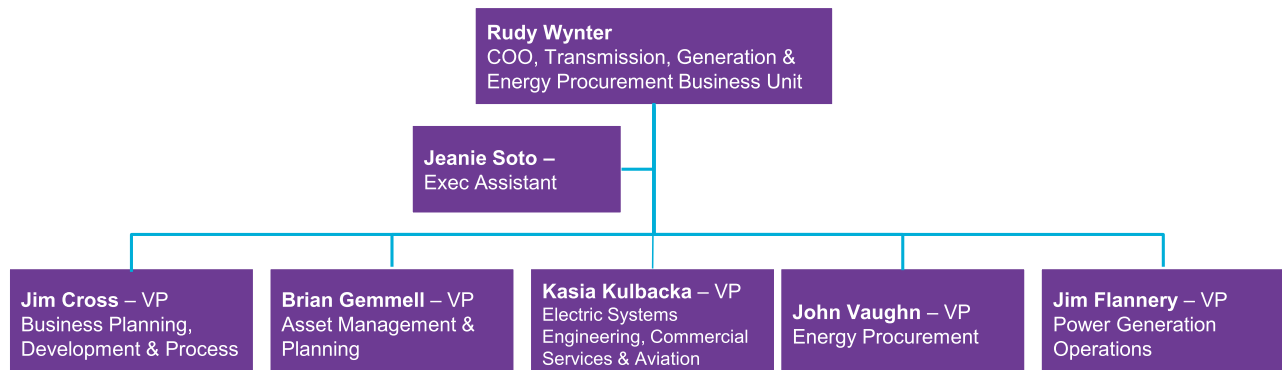
January 2019 Organization Design Gas Control Operations



Transmission, Generation & Energy Procurement Business Unit



The Transmission, Generation and Energy Procurement business unit is focused on driving our evolution to being a leading transmission company. The unit is accountable for managing the company's relationship with the Federal Energy Regulatory Commission (FERC), ensuring our compliance with all FERC regulations, and, in partnership with the Strategy & Regulation Function, setting our FERC regulatory strategy. In addition, this business unit is also responsible for the safe and efficient operation of our power generation plants and for procuring natural gas and electricity for our customers.



Attachment DIV 1-14 REDACTED

Work Order #	Work Type Description	Address 1	Address 2	City	State	Host Taken Date And Time
24697451	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T11:09:43
24697612	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:30:44
24697617	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T11:31:09
24697626	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:32:01
24697628	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:32:17
24697696	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:38:40
24697723	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:42:34
24697786	INVESTIGATION - No Gas Service			MIDDLETOWN	RI	2019-01-21T11:49:37
24697787	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:49:37
24702507	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:49:37
24697807	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T11:52:56
24697835	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T11:57:44
24697849	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:01:26
24697850	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:02:25
24697893	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24702517	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24721396	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24726286	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24735764	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24742321	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24748756	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24755276	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:07:29
24697902	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:08:53
24697904	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:09:03
24697914	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:10:36
24697922	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:12:22
24697933	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:14:40
24697934	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:14:58
24697935	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:15:05
24697936	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:15:37
24697939	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:15:56
24697943	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:16:26
24697951	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:18:31
24700453	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:18:31
24697958	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:18:43
24697965	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:20:00
24697971	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:21:01
24697973	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:21:39
24697977	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:22:17
24697981	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:22:48
24697982	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:22:54
24697987	INVESTIGATION - No Gas Service			NEWPORT	RI	2019-01-21T12:23:17
24697991	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24702580	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24721532	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24726425	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24735898	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24742443	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24748832	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24755366	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:09
24697997	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:32
24703407	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:24:32
24698003	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:25:16
24698010	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:26:45
24698019	EMERGENCY - Gas Pressure			MIDDLETOWN	RI	2019-01-21T12:27:59
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24698025	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:35
24698027	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24702609	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24702781	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24721578	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24726480	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24735949	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24742491	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:28:44
24698031	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:29:00
24698032	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:29:11
24698035	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:29:26
24698050	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:30:50
24698052	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:31:22
24698056	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:06
24698058	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24702570	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24721514	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24726406	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24735878	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24742421	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24748821	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
24755351	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:32:17
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24698073	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:35:28
24698074	EMERGENCY - Gas Pressure			NEWPORT	RI	2019-01-21T12:35:49

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24702413	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T12:36:02
24726116	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T12:36:02
24742173	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T12:36:02
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24698095	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:38:55
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24698120	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:42:31
24698121	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:42:33
24698134	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:44:10
24698140	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:44:58
24698142	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:45:19
24698145	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:45:29
24698146	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:45:42
24698147	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:45:59
24698160	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:47:18
24698166	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24702600	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24721567	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24726467	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24735935	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24742481	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24748856	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24755383	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T12:48:05
24698170	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T12:48:26
24698171	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:48:26
24698177	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:49:05
24698179	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:49:16
24698184	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:49:41
24698188	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:50:11
24698195	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:51:05
24698202	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:52:11
24698203	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24702514	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24721379	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24726268	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24735747	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24742310	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:17
24698206	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:52:31
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24698242	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:55:08
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24698250	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24702540	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24721453	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24726351	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24735819	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24742370	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
24748791	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:57:38
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24698258	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:58:58
24698260	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T12:59:11
24698262	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24702561	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24721502	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24726396	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24735865	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24742411	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24748815	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24755344	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:26
24698265	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T12:59:57
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24702421	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:01:46
24721244	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:01:46
24726125	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:01:46
24735614	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:01:46
24742184	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:01:46
24698273	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:02:08
24698278	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08

24702395	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08
24721204	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08
24726086	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08
24735573	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08
24742144	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:03:08
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24721320	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:04:45
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24698291	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:05:43
24698294	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:06:37
24698302	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:07:49
24698306	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T13:08:35
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24698322	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:10:49
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24698349	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:13:56
24698351	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:14:13
24698359	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:14:45
24698365	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:15:21
24698372	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:15:56
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24698393	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:17:58
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24698401	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:18:31
24698404	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:19:05
24698409	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:19:56
24721232	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:19:56
24735599	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:19:56
24748633	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:19:56
24698412	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:19:59
24698416	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:20:13
24698418	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:20:30
24698420	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:20:34
24698424	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:20:44
24698426	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24702439	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24721275	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24726158	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24735640	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24742212	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24748655	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24755184	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:21:00
24698430	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:21:29
24698434	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:21:41
24698435	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:21:55
24698442	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:22:32
24698443	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:22:41
24698447	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:23:08
24698448	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:23:15
24698452	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:23:32
24698459	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:24:04
24698461	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:24:08
24698462	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:24:16
24698464	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:25:20
24698473	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T13:26:29
24698475	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:26:33
24698479	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T13:27:10
24698484	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T13:27:42
24698486	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:27:52
24698491	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:28:45
24698495	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T13:29:16
24698504	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T13:30:12

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24735603 EMERGENCY - Gas Pressure
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24748636 EMERGENCY - Gas Pressure
24755160 EMERGENCY - Gas Pressure
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24698733 EMERGENCY - Gas Pressure
24698752 EMERGENCY - Gas Pressure
24698738 EMERGENCY - Gas Pressure
24698740 EMERGENCY - Gas Pressure
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24698771 INVESTIGATION - No Gas Service
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24702502 INVESTIGATION - No Gas Service
24721368 INVESTIGATION - No Gas Service
24726251 INVESTIGATION - No Gas Service
24735731 INVESTIGATION - No Gas Service
24742299 INVESTIGATION - No Gas Service
24748726 INVESTIGATION - No Gas Service
24755255 INVESTIGATION - No Gas Service
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24698839 INVESTIGATION - No Gas Service
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24698846 EMERGENCY - Gas Pressure
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24698855 EMERGENCY - Gas Pressure
24698856 EMERGENCY - Gas Pressure

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24698865	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:08:58
24698866	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:09:17
24698867	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:09:33
24698868	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:09:34
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24703939	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:06
24698871	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:08
24698873	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:30
24698878	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24702532	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24721440	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24726339	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24735810	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24742361	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24748783	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24755305	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:46
24698880	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:10:50
24698881	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:10:51
24698927	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:11:20
24698949	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:11:37
24698950	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:11:37
24698956	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:11:58
24698957	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:12:02
24698958	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:12:14
24698967	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:12:40
24698974	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:12:42
24698975	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:12:47
24698980	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:12:59
24698984	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:13:12
24698985	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:13:13
24698990	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:13:19
24699009	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:13:34
24699011	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:13:44
24699012	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:13:46
24699013	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:13:55
24699014	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:14:04
24700918	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:14:04
24699018	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:14:18
24699019	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:14:19
24699021	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:14:35
24699022	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:14:53
24699262	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:14:53
24699027	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:15:24
24699030	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:15:42
24699035	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:26
24699036	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:27
24715867	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:27
24715877	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:27
24699041	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:30
24699042	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:16:34
24699049	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:17:25
24699051	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:17:44
24699055	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:18:19
24699058	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:18:53
24699060	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:19:01
24699063	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:19:12
24699067	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:19:14
24699066	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:19:18
24699068	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:19:25
24699069	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:19:36
24712530	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:19:36
24699070	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:19:38
24699073	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:19:45
24699076	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:20:05
24699080	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:20:22
24699084	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T14:20:41
24699090	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:21:11
24699089	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:21:13
24699094	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:21:39
24699104	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:22:40
24699105	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:22:44
24699108	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:22:56
24699116	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:24:04
24699119	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:24:22
24699123	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T14:24:37
24699122	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:24:38
24699126	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T14:24:46
24699127	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:24:49
24699135	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T14:26:18

24699138 EMERGENCY - Gas Pressure
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24699141 EMERGENCY - Gas Pressure
24699144 EMERGENCY - Gas Pressure
24702643 EMERGENCY - Gas Pressure
24721636 EMERGENCY - Gas Pressure
24726546 EMERGENCY - Gas Pressure
24736008 EMERGENCY - Gas Pressure
24742544 EMERGENCY - Gas Pressure
24748901 EMERGENCY - Gas Pressure
24755427 EMERGENCY - Gas Pressure
24699146 EMERGENCY - Gas Pressure
24699151 EMERGENCY - Gas Pressure
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24699259 INVESTIGATION - No Gas Service
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24699287 INVESTIGATION - No Gas Service
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24726545 EMERGENCY - Gas Pressure
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24742543 EMERGENCY - Gas Pressure
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24699425 EMERGENCY - Gas Pressure
24699426 INVESTIGATION - No Gas Service
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24742503 EMERGENCY - Gas Pressure
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24699564 EMERGENCY - Gas Pressure
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24699548 EMERGENCY - Gas Pressure

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24721380	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:17:25
24726262	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:17:25
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24742306	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:17:25
24748742	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:17:25
24755267	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:17:25
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24699744	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:18:12
24699749	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:33
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24721362	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24726243	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24735722	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24742288	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24748718	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24755248	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:18:51
24699762	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:07
24699766	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:15
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24721615	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:15
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24742526	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:15
24748888	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:15
24755415	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:19:15
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24699779	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
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24721454	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
24726353	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
24735820	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
24742371	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
24748795	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
24755319	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:11
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24699786	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:47
24699788	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:20:56
24699790	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:06
24699791	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:10
24702572	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:10
24721516	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:10
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24735881	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:10
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24755352	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:21:10
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24699823	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:24:40
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24699835	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:17
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24721223	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:44
24726107	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:44
24735588	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:44
24742162	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:44
24699847	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24702582	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24721537	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24726428	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24735899	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24742445	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:26:58
24699853	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:28:04
24699855	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:28:12
24699859	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:28:54

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24699868	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:29:40
24699869	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:29:46
24699881	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:30:45
24699882	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:30:48
24699885	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:30:58
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24699893	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:01
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24699896	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24702424	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24721243	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24726128	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24735611	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24742186	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
24748642	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:32:56
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24699902	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:33:53
24699904	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:34:17
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24699928	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:38:34
24699930	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:38:55
24701058	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:38:55
24699929	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:38:57
24699932	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:39:33
24699938	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:40:15
24699941	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:40:59
24699942	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:41:03
24699946	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:41:15
24699950	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:41:44
24699949	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:41:46
24699951	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:41:48
24699960	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:42:50
24702597	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:42:50
24721563	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:42:50
24726462	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:42:50
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24742473	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:42:50
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24742562	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:45:49
24699993	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:47:05
24699996	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:47:13
24699998	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:47:29
24700006	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
24702511	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
24721376	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
24735738	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
24742303	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
24748737	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38

24755261	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:48:38
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24700020	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T15:49:57
24708380	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T15:49:57
24700026	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:50:47
24700028	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:50:49
24700032	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:51:26
24700036	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:51:58
24700037	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:00
24700039	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:13
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24702522	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24721406	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24726295	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24735772	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24742330	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24748760	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
24755281	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:52:19
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24701298	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:53:44
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24700062	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T15:54:20
24700063	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T15:54:26
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24702432	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:59:48
24721262	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:59:48
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24735628	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:59:48
24742204	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T15:59:48
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24700114	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24702406	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24721219	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24726100	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24735589	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24742158	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:35
24700113	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:37
24700115	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:00:39
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24700127	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:02:23
24700132	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:02:48
24700134	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T16:02:55
24700140	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:03:29
24700148	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:04:28
24702473	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:04:28
24721336	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:04:28
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24721225	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24726106	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24735592	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24742163	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24748627	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24755151	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:25:55
24700323	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T16:26:30
24700325	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:36
24702591	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:36
24726448	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:36
24742464	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:36
24755373	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:36
24700328	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:26:44
24700337	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:27:37
24700338	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:28:18
24700346	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:28:42
24700348	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:29:09
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24700367	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:32:29
24700369	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:32:39
24720094	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:32:39
24700371	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:32:59
24700374	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:33:25
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24700379	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:34:36
24700380	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:34:39
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24700392	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:37:16
24700393	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:37:34
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24700406	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:39:45
24700408	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:39:48
24700409	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:39:49
24700407	INVESTIGATION - No Gas Service	MIDDLETOWN	RI	2019-01-21T16:39:51
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24700818	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T16:43:31
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24703914	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:44:18
24700443	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:44:38
24700444	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:44:39
24700445	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T16:44:45
24700446	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T16:45:19
24700447	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:45:19
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24700451	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:45:53
24700461	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:46:52
24700463	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:47:14
24702431	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:47:14
24721265	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:47:14
24726148	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:47:14
24735633	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T16:47:14
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24721603	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T16:47:40
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MIDDLETOWN RI 2019-01-21T17:13:41

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24700625	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T17:35:24
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24700652	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:43:03
24702638	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:43:03
24721624	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:43:03
24735998	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:43:03
24748895	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:43:03
24700655	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T17:44:58
24700657	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T17:45:26
24700662	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T17:48:33
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24700669	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T17:52:13
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24700692	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:01:46
24700703	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:01:46
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24702497	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:03:09
24721363	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:03:09
24726244	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:03:09
24735724	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:03:09
24742291	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:03:09
24700705	INVESTIGATION - No Heat	NEWPORT	RI	2019-01-21T18:04:21
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24700712	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:08:06
24721554	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:08:06
24735922	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:08:06
24748846	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:08:06
24700713	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:08:26
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24700723	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:13:04
24700734	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:15:15
24700735	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:16:35
24700736	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:17:34
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24700742	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24702559	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24721496	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24726391	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24735860	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24742405	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24748808	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24755337	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:18:53
24700748	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:20:49
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24700750	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:21:40
24700754	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:24:05
24700755	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T18:24:15
24700756	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:24:52
24700760	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:26:08
24700762	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:27:09
24700770	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:30:21
24700772	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:32:27
24700773	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:33:40
24700774	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T18:33:48
24700776	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:34:56
24700777	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T18:36:15
24700779	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T18:37:04
24700787	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T18:42:19
24700788	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:42:37
24700790	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:42:51
24700791	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:43:08
24700792	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:43:28
24702562	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:43:28
24700795	INVESTIGATION - No Gas Service	NEWPORT	RI	2019-01-21T18:44:42
24700796	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:45:51
24700797	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T18:46:00

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NEWPORT	RI	2019-01-21T19:22:44
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24700902	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:46:06
24700904	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:46:59
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24700908	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:49:16
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24700914	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:52:25
24717392	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:52:25
24700915	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:52:49
24700916	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:54:08
24700917	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:54:35
24700919	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T19:58:15
24700920	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T19:58:44
24700922	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:00:04
24700923	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:00:32
24700924	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:01:03
24700928	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:02:39
24700929	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:03:43
24700930	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:04:42
24700931	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:05:13
24700932	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:05:28
24700934	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:06:19
24700933	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:06:26
24700935	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:06:30
24700939	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:10:02
24700940	INVESTIGATION - No Heat	NEWPORT	RI	2019-01-21T20:10:20
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24700943	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24702486	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
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24726241	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24735721	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24742284	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24748717	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24755243	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:30
24700945	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:13:57
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24700948	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:15:30
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24700952	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:15:52
24700951	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:16:05
24714195	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:16:05
24700953	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T20:16:40
24700954	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:17:34
24700955	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T20:19:02
24700956	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:19:10
24700957	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:20:25
24700959	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:20:53
24700960	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:22:07
24704690	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:22:07
24700961	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:22:13
24700964	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:23:35
24700966	EMERGENCY - Gas Pressure	MIDDLETOWN	RI	2019-01-21T20:25:14
24700968	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:25:54
24700969	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:12
24700970	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24702425	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24721246	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24726130	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24735612	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24742188	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24748644	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24755166	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:26:21
24700973	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:27:00
24700975	EMERGENCY - Gas Pressure	NEWPORT	RI	2019-01-21T20:28:27

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's First Set of Data Requests
Issued on February 5, 2019

Confidential – Investigatory Record
Division 1-26 Supplemental

Request:

Please provide, in excel format, for the period Midnight (i.e., 12:00 AM) January 19, 2019 through January 23, 2019 (i.e., 11:59 PM), the actual hourly temperature as measured at each of Company's temperature measuring locations.

Response:

Please see the Excel file provided as Attachment DIV 1-26 for the requested information.

Supplemental Response:

Please see Attachment DIV 1-26S for a copy of the historical weather report from T.F. Green Airport. This weather report reflects that Providence experienced heavy rain in the hours preceding the temporary shut down of National Grid LNG, LLC's (NGLNG) plant in Providence, followed by low temperatures. According to the operators of the NGLNG's Providence plant, that heavy rain left standing water, which froze from the rapidly dropping temperatures, impacting some of the LNG equipment.

Historical Weather Report from T.F. Green Airport

	Time	Temperat	Dew Point	Humidity	Wind	Wind Spe	Wind Gus	Pressure	Precip.	Precip Ac	Condition
19-Jan-2019	1:51 AM	34 F	22 F	61 %	NW	6 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
	2:51 AM	32 F	19 F	59 %	NW	5 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
	3:51 AM	31 F	19 F	61 %	WNW	5 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
	4:51 AM	29 F	19 F	67 %	WNW	3 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
	5:51 AM	26 F	18 F	71 %	WNW	3 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
	6:51 AM	26 F	19 F	75 %	NNE	3 mph	0 mph	30.1 in	0.0 in	0.0 in	Mostly Cloudy
	7:51 AM	25 F	19 F	78 %	WNW	6 mph	0 mph	30.2 in	0.0 in	0.0 in	Partly Cloudy
	8:51 AM	25 F	20 F	81 %	N	3 mph	0 mph	30.2 in	0.0 in	0.0 in	Partly Cloudy
	9:51 AM	31 F	20 F	64 %	NNE	9 mph	0 mph	30.2 in	0.0 in	0.0 in	Partly Cloudy
	10:51 AM	33 F	20 F	59 %	N	13 mph	0 mph	30.2 in	0.0 in	0.0 in	Partly Cloudy
	11:51 AM	35 F	20 F	54 %	NNE	8 mph	0 mph	30.2 in	0.0 in	0.0 in	Partly Cloudy
	12:51 PM	35 F	19 F	52 %	N	12 mph	0 mph	30.2 in	0.0 in	0.0 in	Mostly Cloudy
	1:51 PM	36 F	20 F	52 %	VAR	7 mph	0 mph	30.2 in	0.0 in	0.0 in	Mostly Cloudy
	2:51 PM	33 F	20 F	59 %	ENE	13 mph	0 mph	30.2 in	0.0 in	0.0 in	Cloudy
	3:05 PM	33 F	21 F	61 %	ENE	10 mph	0 mph	30.2 in	0.0 in	0.0 in	Cloudy
	3:51 PM	31 F	21 F	67 %	ENE	9 mph	0 mph	30.2 in	0.0 in	0.0 in	Cloudy
	4:51 PM	30 F	22 F	72 %	NE	7 mph	0 mph	30.2 in	0.0 in	0.0 in	Light Snow
	5:51 PM	30 F	23 F	75 %	N	8 mph	0 mph	30.2 in	0.0 in	0.0 in	Light Snow
	6:27 PM	28 F	24 F	85 %	NNE	8 mph	0 mph	30.2 in	0.0 in	0.0 in	Light Snow
	6:51 PM	28 F	24 F	85 %	NNE	8 mph	0 mph	30.2 in	0.0 in	0.0 in	Light Snow
	6:59 PM	28 F	24 F	85 %	NNE	10 mph	0 mph	30.1 in	0.0 in	0.0 in	Light Snow
	7:09 PM	28 F	25 F	88 %	NNE	10 mph	0 mph	30.1 in	0.0 in	0.0 in	Wintry Mix
	7:51 PM	28 F	26 F	92 %	NNE	8 mph	0 mph	30.1 in	0.0 in	0.0 in	Wintry Mix
	8:51 PM	29 F	27 F	92 %	NE	9 mph	0 mph	30.1 in	0.0 in	0.0 in	Wintry Mix
	9:49 PM	30 F	28 F	93 %	NE	9 mph	0 mph	30.1 in	0.0 in	0.0 in	Light Snow
	9:50 PM	30 F	28 F	92 %	NE	9 mph	0 mph	30.1 in	0.0 in	0.0 in	Light Snow
	10:51 PM	31 F	29 F	92 %	ENE	12 mph	0 mph	30.0 in	0.0 in	0.0 in	Light Snow
	11:03 PM	31 F	29 F	92 %	ENE	10 mph	0 mph	30.0 in	0.0 in	0.0 in	Light Snow
	11:16 PM	31 F	29 F	92 %	ENE	8 mph	0 mph	30.0 in	0.0 in	0.0 in	Light Snow
	11:51 PM	31 F	30 F	96 %	NE	6 mph	0 mph	30.0 in	0.1 in	0.0 in	Light Snow
20-Jan-2019	12:51 AM	31 F	30 F	96 %	NE	15 mph	0 mph	29.9 in	0.0 in	0.0 in	Light Snow
	1:27 AM	32 F	31 F	96 %	ENE	13 mph	0 mph	29.9 in	0.0 in	0.0 in	Light Snow
	1:51 AM	32 F	31 F	96 %	ENE	13 mph	0 mph	29.9 in	0.1 in	0.0 in	Light Snow
	2:11 AM	32 F	32 F	100 %	ENE	12 mph	0 mph	29.9 in	0.0 in	0.0 in	Light Snow
	2:23 AM	32 F	32 F	100 %	ENE	14 mph	0 mph	29.9 in	0.0 in	0.0 in	Light Snow
	2:49 AM	34 F	32 F	93 %	ENE	14 mph	0 mph	29.8 in	0.0 in	0.0 in	Light Snow
	2:50 AM	33 F	32 F	96 %	ENE	15 mph	0 mph	29.8 in	0.0 in	0.0 in	Light Snow
	3:08 AM	33 F	32 F	96 %	ENE	17 mph	0 mph	29.8 in	0.0 in	0.0 in	Light Snow
	3:51 AM	33 F	32 F	96 %	ENE	22 mph	0 mph	29.8 in	0.1 in	0.0 in	Rain / Windy
	4:07 AM	33 F	32 F	96 %	ENE	13 mph	24 mph	29.8 in	0.0 in	0.0 in	Rain
	4:12 AM	33 F	32 F	96 %	ENE	13 mph	0 mph	29.8 in	0.1 in	0.0 in	Heavy Rain
	4:20 AM	33 F	32 F	96 %	ENE	18 mph	24 mph	29.8 in	0.1 in	0.0 in	Heavy Rain
	4:31 AM	33 F	32 F	96 %	ENE	15 mph	0 mph	29.8 in	0.1 in	0.0 in	Rain
	4:51 AM	33 F	32 F	96 %	ENE	17 mph	0 mph	29.7 in	0.2 in	0.0 in	Heavy Rain
	5:16 AM	33 F	32 F	96 %	NE	14 mph	0 mph	29.7 in	0.1 in	0.0 in	Rain
	5:51 AM	33 F	32 F	96 %	NNE	12 mph	0 mph	29.6 in	0.2 in	0.0 in	Rain
	6:51 AM	34 F	33 F	96 %	NNE	13 mph	0 mph	29.6 in	0.1 in	0.0 in	Light Rain
	7:16 AM	34 F	33 F	96 %	N	13 mph	0 mph	29.6 in	0.1 in	0.0 in	Heavy Rain
	7:51 AM	34 F	33 F	96 %	N	14 mph	0 mph	29.5 in	0.2 in	1.0 in	Heavy Rain
	7:56 AM	34 F	33 F	96 %	N	9 mph	0 mph	29.5 in	0.0 in	0.0 in	Heavy Rain
	8:11 AM	34 F	33 F	96 %	N	15 mph	0 mph	29.5 in	0.1 in	0.0 in	Heavy Rain
	8:32 AM	34 F	33 F	96 %	N	15 mph	0 mph	29.5 in	0.2 in	0.0 in	Rain
	8:51 AM	35 F	34 F	96 %	N	10 mph	0 mph	29.5 in	0.2 in	0.0 in	Rain
	9:51 AM	35 F	34 F	96 %	NNE	13 mph	0 mph	29.4 in	0.1 in	0.0 in	Rain
	10:10 AM	35 F	34 F	96 %	N	13 mph	0 mph	29.4 in	0.1 in	0.0 in	Heavy Rain
	10:20 AM	34 F	34 F	100 %	N	12 mph	0 mph	29.4 in	0.2 in	0.0 in	Heavy Rain
	10:29 AM	34 F	34 F	100 %	NNE	15 mph	0 mph	29.4 in	0.3 in	0.0 in	Heavy T-Storm
	10:34 AM	34 F	34 F	100 %	NNE	12 mph	0 mph	29.4 in	0.3 in	0.0 in	T-Storm
	10:46 AM	34 F	34 F	100 %	N	10 mph	0 mph	29.4 in	0.3 in	0.0 in	Heavy T-Storm
	10:51 AM	34 F	34 F	100 %	NNE	13 mph	0 mph	29.4 in	0.3 in	0.0 in	T-Storm
	11:23 AM	33 F	32 F	96 %	NNE	9 mph	0 mph	29.4 in	0.1 in	0.0 in	T-Storm
	11:42 AM	33 F	32 F	96 %	N	12 mph	0 mph	29.3 in	0.1 in	0.0 in	Light Rain
	11:51 AM	32 F	31 F	96 %	NNE	10 mph	0 mph	29.3 in	0.2 in	0.0 in	Light Rain
	12:51 PM	32 F	31 F	96 %	N	9 mph	0 mph	29.3 in	0.1 in	0.0 in	Rain
	1:00 PM	32 F	31 F	96 %	NNE	10 mph	0 mph	29.3 in	0.0 in	0.0 in	Rain
	1:51 PM	34 F	33 F	96 %	N	3 mph	0 mph	29.2 in	0.1 in	0.0 in	Light Rain
	2:51 PM	33 F	33 F	100 %	NNE	10 mph	0 mph	29.1 in	0.0 in	0.0 in	Rain
	3:32 PM	32 F	31 F	96 %	NNW	16 mph	29 mph	29.2 in	0.1 in	0.0 in	Light Snow
	3:44 PM	31 F	30 F	96 %	NNW	18 mph	25 mph	29.2 in	0.1 in	0.0 in	Wintry Mix
	3:51 PM	30 F	29 F	96 %	NNW	21 mph	30 mph	29.2 in	0.1 in	0.0 in	Wintry Mix / Windy
	3:55 PM	29 F	27 F	92 %	NNW	17 mph	30 mph	29.2 in	0.0 in	0.0 in	Wintry Mix
	4:12 PM	27 F	25 F	92 %	NNW	21 mph	25 mph	29.2 in	0.0 in	0.0 in	Wintry Mix / Windy
	4:22 PM	26 F	24 F	92 %	N	18 mph	31 mph	29.2 in	0.0 in	0.0 in	Wintry Mix
	4:51 PM	25 F	22 F	88 %	N	22 mph	29 mph	29.2 in	0.0 in	0.0 in	Wintry Mix / Windy

	5:00 PM	25 F	23 F	92 %	N	15 mph	23 mph	29.2 in	0.0 in	0.0 in	Wintry Mix
	5:11 PM	25 F	23 F	92 %	N	17 mph	0 mph	29.2 in	0.0 in	0.0 in	Fog
	5:15 PM	25 F	23 F	92 %	N	16 mph	0 mph	29.2 in	0.0 in	0.0 in	Wintry Mix
	5:30 PM	25 F	24 F	96 %	NNW	13 mph	0 mph	29.2 in	0.0 in	0.0 in	Fog
	5:51 PM	25 F	24 F	96 %	NNW	13 mph	0 mph	29.2 in	0.0 in	0.0 in	Fog
	6:01 PM	26 F	23 F	88 %	N	13 mph	0 mph	29.2 in	0.0 in	0.0 in	Cloudy
	6:13 PM	26 F	24 F	92 %	NNW	12 mph	0 mph	29.2 in	0.0 in	0.0 in	Wintry Mix
	6:51 PM	27 F	24 F	89 %	NNW	12 mph	17 mph	29.3 in	0.0 in	0.0 in	Light Freezing Drizzle
	7:05 PM	27 F	24 F	89 %	NW	10 mph	0 mph	29.3 in	0.0 in	0.0 in	Cloudy
	7:27 PM	27 F	22 F	81 %	NW	16 mph	24 mph	29.3 in	0.0 in	0.0 in	Cloudy
	7:51 PM	27 F	21 F	78 %	NW	15 mph	24 mph	29.3 in	0.0 in	0.0 in	Cloudy
	8:37 PM	25 F	20 F	81 %	WNW	12 mph	24 mph	29.3 in	0.0 in	0.0 in	Mostly Cloudy
	8:51 PM	24 F	18 F	77 %	NW	23 mph	29 mph	29.3 in	0.0 in	0.0 in	Cloudy / Windy
	9:12 PM	22 F	16 F	78 %	NW	20 mph	31 mph	29.4 in	0.0 in	0.0 in	Cloudy
	9:51 PM	18 F	11 F	74 %	WNW	18 mph	30 mph	29.4 in	0.0 in	0.0 in	Partly Cloudy
	10:51 PM	15 F	7 F	70 %	NW	13 mph	30 mph	29.4 in	0.0 in	0.0 in	Fair
	11:51 PM	13 F	5 F	71 %	WNW	14 mph	28 mph	29.5 in	0.0 in	0.0 in	Fair
21-Jan-2019	12:51 AM	10 F	2 F	70 %	NW	16 mph	25 mph	29.5 in	0.0 in	0.0 in	Partly Cloudy
	1:51 AM	7 F	-2 F	67 %	WNW	18 mph	26 mph	29.6 in	0.0 in	0.0 in	Fair
	2:51 AM	6 F	-4 F	63 %	WNW	16 mph	30 mph	29.6 in	0.0 in	0.0 in	Fair
	3:51 AM	5 F	-5 F	63 %	WNW	23 mph	30 mph	29.6 in	0.0 in	0.0 in	Fair / Windy
	4:51 AM	4 F	-5 F	66 %	WNW	15 mph	0 mph	29.6 in	0.0 in	0.0 in	Fair
	5:51 AM	2 F	-7 F	66 %	NW	15 mph	29 mph	29.6 in	0.0 in	0.0 in	Fair
	6:51 AM	2 F	-8 F	63 %		0 mph	0 mph	29.7 in	0.0 in	0.0 in	Fair
	7:51 AM	1 F	-8 F	66 %	WNW	15 mph	24 mph	29.7 in	0.0 in	1.1 in	Fair
	8:51 AM	1 F	-9 F	63 %	WNW	17 mph	25 mph	29.7 in	0.0 in	0.0 in	Fair
	9:51 AM	2 F	-8 F	63 %	WNW	14 mph	25 mph	29.8 in	0.0 in	0.0 in	Fair
	10:51 AM	3 F	-7 F	63 %	W	17 mph	25 mph	29.8 in	0.0 in	0.0 in	Fair
	11:51 AM	4 F	-5 F	66 %	WNW	14 mph	25 mph	29.8 in	0.0 in	0.0 in	Mostly Cloudy
	12:49 PM	3 F	-6 F	66 %	NW	13 mph	28 mph	29.8 in	0.0 in	0.0 in	Patches of Fog
	12:51 PM	4 F	-5 F	66 %	NW	16 mph	28 mph	29.8 in	0.0 in	0.0 in	Patches of Fog
	1:49 PM	5 F	-6 F	61 %	NW	18 mph	30 mph	29.8 in	0.0 in	0.0 in	Mostly Cloudy
	1:51 PM	5 F	-5 F	63 %	WNW	17 mph	30 mph	29.8 in	0.0 in	0.0 in	Mostly Cloudy
	2:51 PM	5 F	-5 F	63 %	NW	17 mph	31 mph	29.8 in	0.0 in	0.0 in	Mostly Cloudy
	3:51 PM	4 F	-5 F	66 %	WNW	14 mph	26 mph	29.8 in	0.0 in	0.0 in	Light Snow
	4:51 PM	3 F	-8 F	60 %	NW	18 mph	32 mph	29.9 in	0.0 in	0.0 in	Mostly Cloudy
	5:51 PM	4 F	-8 F	58 %	NW	21 mph	32 mph	29.9 in	0.0 in	0.0 in	Mostly Cloudy / Windy
	6:51 PM	4 F	-8 F	58 %	WNW	16 mph	24 mph	29.9 in	0.0 in	0.0 in	Mostly Cloudy
	7:51 PM	5 F	-7 F	58 %	WNW	15 mph	26 mph	30.0 in	0.0 in	0.0 in	Light Snow
	8:51 PM	6 F	-6 F	58 %	NW	14 mph	26 mph	30.0 in	0.0 in	0.0 in	Light Snow
	9:51 PM	5 F	-6 F	61 %	WNW	16 mph	29 mph	30.0 in	0.0 in	0.0 in	Partly Cloudy
	10:51 PM	5 F	-7 F	58 %	WNW	13 mph	20 mph	30.1 in	0.0 in	0.0 in	Fair
	11:51 PM	5 F	-8 F	55 %	NW	12 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
22-Jan-2019	1:51 AM	5 F	-9 F	52 %	NW	13 mph	21 mph	30.1 in	0.0 in	0.0 in	Fair
	2:51 AM	5 F	-8 F	55 %	NW	13 mph	22 mph	30.2 in	0.0 in	0.0 in	Fair
	3:51 AM	7 F	-8 F	51 %	WNW	13 mph	22 mph	30.2 in	0.0 in	0.0 in	Fair
	4:51 AM	6 F	-8 F	53 %	NW	18 mph	26 mph	30.2 in	0.0 in	0.0 in	Fair
	5:51 AM	7 F	-7 F	53 %		0 mph	0 mph	30.3 in	0.0 in	0.0 in	Fair
	6:51 AM	8 F	-6 F	53 %	NNW	12 mph	20 mph	30.3 in	0.0 in	0.0 in	Fair
	7:51 AM	9 F	-6 F	51 %	WNW	21 mph	28 mph	30.4 in	0.0 in	0.0 in	Fair / Windy
	8:51 AM	9 F	-4 F	56 %	WNW	12 mph	18 mph	30.4 in	0.0 in	0.0 in	Fair
	9:51 AM	11 F	-2 F	56 %	WNW	10 mph	0 mph	30.5 in	0.0 in	0.0 in	Fair
	10:51 AM	15 F	-1 F	49 %	NW	14 mph	0 mph	30.5 in	0.0 in	0.0 in	Fair
	11:51 AM	17 F	1 F	50 %	NW	17 mph	24 mph	30.5 in	0.0 in	0.0 in	Fair
	12:51 PM	20 F	2 F	46 %	NW	12 mph	21 mph	30.5 in	0.0 in	0.0 in	Fair
	1:51 PM	22 F	3 F	44 %	NNW	14 mph	0 mph	30.5 in	0.0 in	0.0 in	Fair
	2:51 PM	24 F	5 F	44 %	NW	13 mph	0 mph	30.5 in	0.0 in	0.0 in	Fair
	3:51 PM	26 F	5 F	41 %	NW	14 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	4:51 PM	25 F	4 F	41 %	WNW	12 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	5:51 PM	23 F	5 F	46 %	W	5 mph	0 mph	30.5 in	0.0 in	0.0 in	Mostly Cloudy
	6:51 PM	22 F	7 F	53 %	W	6 mph	0 mph	30.5 in	0.0 in	0.0 in	Mostly Cloudy
	7:51 PM	21 F	6 F	53 %	W	6 mph	0 mph	30.5 in	0.0 in	0.0 in	Fair
	8:51 PM	21 F	5 F	50 %	W	7 mph	0 mph	30.5 in	0.0 in	0.0 in	Mostly Cloudy
	9:51 PM	20 F	5 F	52 %	W	3 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	10:51 PM	20 F	5 F	52 %	W	6 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	11:51 PM	19 F	5 F	54 %	WSW	6 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	12:51 AM	19 F	5 F	54 %	W	3 mph	0 mph	30.5 in	0.0 in	0.0 in	Partly Cloudy
	10:51 PM	5 F	-7 F	58 %	WNW	13 mph	20 mph	30.1 in	0.0 in	0.0 in	Fair
	11:51 PM	5 F	-8 F	55 %	NW	12 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair
23-Jan-2019	12:51 AM	5 F	-9 F	52 %	NW	13 mph	0 mph	30.1 in	0.0 in	0.0 in	Fair

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NG LNG 2-1

Request:

The Division has been informed by the Pipeline and Hazardous Materials Safety Administration (PHMSA) that during the morning of January 21, 2019, the National Grid LNG LLC ("National Grid LNG") plant in Providence that provides natural gas during periods of peak demand into the gas distribution system in Providence experienced a shut down around 4:45 a.m. (EST) According to PHMSA, this caused an increased draw of gas into Providence that greatly exceeded the maximum contracted rate(s) of delivery(ies) into the Narragansett Electric Company's gas distribution system in the Providence area for several hours. In turn, pressure began to drop at the head of the AGT "G system" prior to the valve problem experienced by Algonquin at its Weymouth station.

- (a) Can the National Grid LNG confirm that a shut-down of the Providence LNG plant occurred on the morning of January 21?
- (b) Please provide a complete description of National Grid LNG's understanding of what occurred at the Providence LNG plant and vaporizing facilities on January 21, 2019, including a timeline of what occurred and the rate of vaporization.

Response:

- (a) For purposes of this answer, National Grid LNG LLC (NGLNG) interprets "shut down" to mean that the LNG plant in Providence was unable to vaporize LNG to send out natural gas. Based on this interpretation, NGLNG can confirm that its Providence LNG plant temporarily shut down on the morning of January 21, 2019.
- (b) At 4:45 a.m. on January 21, an automatic plant shutdown occurred. The vaporization rate dropped to zero because equipment did not immediately restart after the plant shutdown. Once the plant resumed vaporizing gas, it continued to send out gas for the remainder of the day. On January 21, plant operators worked on the following equipment:
 - The fuel valves to Vaporizer 1, Vaporizer 2, and Vaporizer 3;
 - The HCV 20 Valve (see timeline at Attachment NGLNG 2-1 for a description);
 - The burner management system on Vaporizer 3; and
 - The damper on Vaporizer 2.

The fuel valves to Vaporizer 1, Vaporizer 2, and Vaporizer 3 would not open. There was some ice buildup. The plant operators melted the ice and then manually assisted with opening the fuel valves.

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The HCV 20 Valve did not open or respond to electronic commands. The actuator for the valve was not operating. The plant operators removed the actuator and manually opened the valve.

The burner management system on Vaporizer 3 returned faults that shut down the vaporizer without apparent cause. The plant operators were unable to troubleshoot this problem on January 21.

The plant operators noticed the exhaust on Vaporizer 2 was not operating properly and was limiting the sendout from the vaporizer.

Please see Attachment NGLNG 2-1 for a timeline with additional information concerning events at the Providence LNG plant on January 21.

The following is a timeline of the vaporization rate at the Providence LNG plant on calendar day January 21, 2019 from 2:00 a.m. to 11:00 p.m.:

TIME	VAPORIZATION RATE (MMBTU)
2:00 a.m.	2,400
3:00 a.m.	2,600
4:00 a.m.	2,300
5:00 a.m.	1,880
6:00 a.m.	0
7:00 a.m.	200
8:00 a.m.	0
9:00 a.m.	83
10:00 a.m.	2,475
11:00 a.m.	1,700
12:00 p.m.	2,800
1:00 p.m.	5,000
2:00 p.m.	3,500

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TIME	VAPORIZATION RATE (MMBTU)
3:00 p.m.	3,000
4:00 p.m.	4,000
5:00 p.m.	4,000
6:00 p.m.	4,000
7:00 p.m.	3,000
8:00 p.m.	3,500
9:00 p.m.	2,100
10:00 p.m.	2,000
11:00 p.m.	3,300

May 17, 2019

VIA ELECTRONIC MAIL

Leo Wold, Esq.
Rhode Island Division of Public Utilities and Carriers
89 Jefferson Boulevard
Warwick, RI 02888

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

**RE: Summary Investigation into the Aquidneck Island Gas Service
Interruption of January 21, 2019
Confidential Supplemental Response to Division Data Request 2-2**

Dear Mr. Wold:

On behalf of National Grid,¹ I have enclosed the Company's supplemental response to the data request Division 2-2 from the Division of Public Utilities and Carriers (Division) in the above-referenced matter. In light of our conversations with the Division on this issue, we are providing the following explanation for the original response and this supplemental response.

On March 7, 2019, representatives from the Company met with representatives from the Division and explained that to provide full and complete responses to data requests in this summary investigation, the Company would require months to collect and review the potentially relevant documents and emails. The Company described the necessary information gathering process, which would require that the Company (1) identify relevant custodians; (2) retain a document management company; (3) task that document management company to sweep the custodians' electronic databases and their paper records to gather all potentially relevant documents; (4) convert that electronic and hard copy information into a searchable and usable digital database; (5) review that database in its entirety for privilege and other types of confidential information; (6) identify and assemble relevant documents; and (7) work with the relevant documents and particular custodians to respond to the specific and detailed questions posed by the Division. The Division stated that it could not wait for the Company to complete this months-long process and requested quick responses so it could complete this summary investigation by the end of June 2019.

The Company agreed to provide responses that the Division knew and acknowledged might be incomplete and preliminary and which could require amendment and supplementation when the Company identified and reviewed additional information. Based on this understanding, the Company responded within 14 days to dozens of rolling data requests issued by the Division requesting very detailed and comprehensive information. In most cases, to facilitate the rapid

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

response requested by the Division, the Company did so without the benefit of having adequate time to identify, review, and analyze documents and communications related to the subject matter of the requests.

The Company submitted its initial response to Division 2-2 on March 15, 2019 – 14 days after the Division issued the request. Not long after, the Company was able to collect, review and promptly produce some of the relevant emails, including emails by and between members of the Gas Control leadership team. Those emails included a January 21, 2019 email chain between Paul Loiacono and Richard Delaney that the Company produced as part of Attachment DIV 4-4-1 to its supplemental response to Division 4-4; just 20 days after providing its written response to Division 2-2.

In his January 21, 2019 email, Mr. Loiacono states that both (1) the loss of the National Grid LNG LLC (NGLNG) plant in Providence, and (2) the frozen valve on the Algonquin Gas Transmission, LLC (Algonquin) G System impacted the Company's distribution system. He provided this update to his supervisor in real time as he helped to manage the unfolding gas emergency. He knew pressures were faltering, and he attributed that disruption to the two events he learned of that day.

When he made these observations, Mr. Loiacono had very little information regarding the cause, nature, and extent of the Algonquin supply issues, and he did not have the data or knowledge necessary to determine the actual impact on the distribution system caused by either event. Other Company representatives active in managing the gas emergency believed at that time that the Algonquin supply issues, not the LNG issues, disrupted the Aquidneck Island distribution system. But, like Mr. Loiacono, these representatives did not have the data, the software, or the time required during this crisis to reach a conclusion based on data and calculations. Additionally, neither their beliefs nor conjecture ultimately answer the relevant question.

Both Mr. Loiacono and Mr. Delaney reviewed and approved the original response to Division 2-2 before the Company submitted it. Neither Mr. Loiacono nor Mr. Delaney recalled the January 21, 2019 email chain at that time. Both Mr. Loiacono and Mr. Delaney played demanding roles in responding to the cascading gas emergency on January 21, 2019, and many events occurred that day.

The Company has informed the Division on multiple occasions, both in meetings and in responses to data requests, that it requires both data and a dynamic gas modeling system in the possession of Algonquin to determine the actual impact of these events on inlet pressures to the Portsmouth take station and the resulting impacts on the Company distribution system on Aquidneck Island. Even today, the Company cannot perform the necessary modeling to quantify those impacts because Algonquin refuses to provide the model and inputs necessary. Accordingly, with this context, please see the enclosed supplemental response to Division 2-2.

Leo Wold, Esq.
May 17, 2019
Page 3 of 3

If you have any questions, please contact me at 401-784-7415.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'RH', followed by a long horizontal flourish.

Robert J. Humm

Enclosure

Confidential – Investigatory Record

Division 2-2 - Supplemental

Request:

Referring to the PHMSA information summarized in question 2-1 above, at any time on January 21, 2019, were any of the employees listed in response to Division 1-10(c) who were on duty on January 21, 2019, Richard Delaney, and/or Ross Turrini aware of the impact that the loss of the National Grid LNG plant in Providence had or was having on system pressures on the Algonquin “G system” the morning of January 21, 2019? If yes, please describe the level of awareness and their understanding. If not, please explain why not.

Response:

For purposes of this response, The Narragansett Electric Company d/b/a National Grid (the Company) interprets the phrase “loss of the National Grid LNG plant in Providence” to refer to the inability of the National Grid LNG LLC (NGLNG) plant in Providence to send out gas to the Company’s distribution system between 4:45 a.m. and 8:28 a.m. on calendar day January 21, 2019, and the inability of the NGLNG plant to send out gas to the Company’s distribution system at its expected capacity as requested after the plant was able to resume sending out gas.

As explained in these responses, the Company continues to believe that the problems at the Algonquin Gas Transmission, LLC (Algonquin) Weymouth Station caused the service outages. No one from the Company, including the employees listed in response to Division 1-10(c) who were on duty on January 21, 2019, Richard Delaney, and Ross Turrini, knew the impact, if any, that the NGLNG plant in Providence had or was having on system pressures on the Algonquin “G system” the morning of January 21, 2019.

Supplemental Response:

Based on the additional emails it has reviewed after filing the original response to Division 2-2, the Company supplements its response as follows:

For purposes of this response, The Narragansett Electric Company d/b/a National Grid (the Company) interprets the phrase “loss of the National Grid LNG plant in Providence” to refer to the inability of the National Grid LNG LLC (NGLNG) plant in Providence to send out gas to the Company’s distribution system between 4:45 a.m. and 8:28 a.m. on calendar day January 21, 2019, and the inability of the NGLNG plant to send out gas to the Company’s distribution system at its expected capacity as requested after the plant was able to resume sending out gas.

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Division 2-2 - Supplemental
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As explained in these responses, the Company continues to believe that the problems at the Algonquin Gas Transmission, LLC (Algonquin) Weymouth Station caused the service outages.

The employees listed in response to Division 1-10(c) who were on duty on January 21, 2019, Richard Delaney, and Ross Turrini, did not know the actual impact, if any, that the NGLNG plant in Providence had or was having on system pressures on the Algonquin “G system” the morning of January 21, 2019. During the course of that day, one of these Company employees, Paul Loiacono, stated in an email that the NGLNG plant did impact the falling pressures at the Portsmouth take station (see the January 21, 2019 email from Mr. Loiacono to Mr. Delaney at Attachment DIV 4-4-1 at page 39 of 59). On January 21, 2019, these Company employees (1) did not know the cause, nature and extent of the Algonquin supply issues; (2) did not have the data or knowledge necessary to determine the actual impact on the distribution system caused by either event; (3) did not have the software or the time required during this crisis to reach a conclusion based on data and calculations; and (4) were generally absorbed in managing the evolving gas emergency. The Company is still collecting and reviewing information necessary to fully respond to this question. As the Division knows, the Company has not yet collected or reviewed all the electronic and hard copy information relevant to the request and therefore may need to further supplement and amend this response.

January 21, 2019 LNG Plant Event Timeline

0200 – Vaporizers 1 and 2 running.

0200 – Vaporization rate is 2400 MMBTU/hr and sendout pressure is 177 psig.

0300 – Vaporization rate is 2600 MMBTU/hr and sendout pressure is 177 psig.

0400 – Vaporization rate is 2300 MMBTU/hr and sendout pressure is 174 psig.

0445 – Plant shutdown occurs, caused by activation of automatic shutdown system. No underlying emergency or equipment malfunction.

0450 – Plant personnel could not restart operations.

0445-0550 – Operator is unable to start Compressor 1.

0500 – Vaporization rate is 1880 MMBTU/hr and sendout pressure is 172 psig.

0600 – Vaporization rate is 0 MMBTU/hr and sendout pressure is 100 psig.

0600 (approximate) – National Grid technician and plant supervisor arrive and assist with plant troubleshooting.

0600-0800 – Operator and technician working on opening HCV 20, a valve used in operating the boil off system. Operator unable to cycle HCV 20.

0700 – Vaporization rate is 200 MMBTU/hr and sendout pressure is 99 psig.

0800 – Vaporization rate is 0 MMBTU/hr and sendout pressure is 150 psig.

0800 – Technician starts Vaporizer 2, unit is running, plant partially back on line.

0805 (approximate) – Actuator for HCV20 removed and HCV20 opened manually.

0815-0824 – Operator unable to start Vaporizer 3. Vaporizer 3 presents Burner Management System (BMS) fault.

0834-0915 – Operator unable to start Compressor 1 or Compressor 2.

0900 – Vaporization rate is 83 MMBTU/hr and sendout pressure is 176 psig.

1000 – Vaporization rate is 2475 MMBTU/hr and sendout pressure is 179 psig.

1006 – Plant shutdown occurs again.

1007 – Vaporizer 2 restarted immediately and online.

1044 – Operator starts Compressor 1.

1044 – Vaporizer 1 started and remains online for the remainder of the day.

1100 – Vaporization rate is 1700 MMBTU/hr and sendout pressure is 177 psig.

1107 – Vaporizer 3 started.

1110 – Vaporizer 3 down and presents Burner Management System (BMS) fault.

January 21, 2019 LNG Plant Event Timeline

1113 – Vaporizer 3 restarted at 1113. All vaporizers online.

1200 – Vaporization rate is 2800 MMBTU/hr and sendout pressure is 194 psig.

1247-1450 – Vaporizer 3 shuts down and presents BMS fault. Operator and technician troubleshoot Vaporizer 3.

1300 – Vaporization rate is 5000 MMBTU/hr and sendout pressure is 127 psig.

1400 – Vaporization rate is 3500 MMBTU/hr and sendout pressure is 125 psig.

1417-1420 – Compressor 1 and 2 shut down and restarted. Operator shuts down Compressor 2 and Compressor 1 remains online.

1450 – Vaporizer 3 restarted.

1500 – Vaporization rate is 3000 MMBTU/hr and sendout pressure is 170 psig.

1534 – Operator shuts down Vaporizer 2.

1542 – Vaporizer 2 restarted.

1600 – Vaporization rate is 4000 MMBTU/hr and sendout pressure is 180 psig.

1700 – Vaporization rate is 4000 MMBTU/hr and sendout pressure is 171 psig.

1730-2132 – Vaporizer 3 shuts down and presents BMS fault. Operator and technician troubleshoot Vaporizer 3.

1800 – Vaporization rate is 4000 MMBTU/hr and sendout pressure is 166 psig.

1900 – Vaporization rate is 3000 MMBTU/hr and sendout pressure is 146 psig.

2000 – Vaporization rate is 3500 MMBTU/hr and sendout pressure is 132 psig.

2050 – Operator shuts down Vaporizer 2.

2100 – Vaporization rate is 2100 MMBTU/hr and sendout pressure is 125 psig.

2132 – Vaporizer 3 restarted and remains online for remainder of the day.

2200 – Vaporization rate is 2000 MMBTU/hr and sendout pressure is 125 psig.

2300 – Vaporization rate is 3300 MMBTU/hr and sendout pressure is 169 psig.

2324 – Vaporizer 2 started and remains online for remainder of the day.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Second Set of Data Requests
Issued on March 1, 2019

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Division 2-10

Request:

Why did the Company not formally or informally notify the Division on January 21, or during the weeks that followed, that the Providence LNG plant experienced a shut-down on the morning of January 21, 2019?

Response:

For purposes of this response, The Narragansett Electric Company d/b/a National Grid (the Company) interprets the phrase “shut-down on the morning of January 21, 2019” to refer to the inability of the National Grid LNG LLC (NGLNG) plant in Providence to send out gas to the Company’s distribution system between 4:45 a.m. and 8:28 a.m. on calendar day January 21, 2019, and the inability of the NGLNG plant to send out gas to the Company’s distribution system at its expected capacity as requested after the plant was able to resume sending out gas.

The Company did not formally or informally notify the Rhode Island Division of Public Utilities and Carriers (the Division) on January 21, 2019, or during the weeks that followed, that the NGLNG plant in Providence experienced a shut-down on the morning of January 21, 2019, because: (1) the Company believes that failures and problems in the Algonquin Gas Transmission, LLC system caused the low pressure condition that led to the shutdown of the low pressure gas distribution system on Aquidneck Island, and (2) the Company did not and does not believe that the NGLNG facility’s temporary inability to send out gas to the Company’s distribution system caused the low pressure condition that led to the shutdown of the low pressure gas distribution system on Aquidneck Island.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Second Set of Data Requests
Issued on March 1, 2019

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Division 2-11

Request:

Referring to Attachment DIV 1-2, page 3 of 7, there is an event log containing the following comment from the morning of January 21, 2019: "Called Plant to find out what went wrong, plant tripped out on a ESD and they have one valve that won't reset." What do the letters "ESD" stand for in this acronym in the context of this comment?

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) understands the acronym "ESD" to stand for emergency shut down. The Company's gas control operators received the information referenced in this request from the employees working at the National Grid LNG LLC (NGLNG) plant in Providence. The Company does not know what constitutes an ESD at the NGLNG plant in Providence.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Second Set of Data Requests
Issued on April 15, 2019

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Division 2-18

Request:

Referring to the handwritten notes included in Attachment DIV 4-7-1, pages 1 through 3, please identify the authors of these notes and explain the context of when and why they were written, including without limitation identifying the participants in the conversations leading to the notetaking and a summary of the conversations.

Response:

The handwritten notes included in Attachment DIV 4-7-1 were written by Marcy Reed, President, Massachusetts Jurisdiction, and are her contemporaneous notes that she took during two telephone calls she had with William Yardley of Enbridge Inc., the parent of Algonquin Gas Transmission, LLC, on January 24, 2019, and January 30, 2019, as well as a January 24, 2019 call that Ms. Reed had with Ross Turrini, Group Chief Gas Engineer and US Chief Gas Engineer. As reflected in the notes, the calls between Ms. Reed and Mr. Yardley were high level discussions regarding the January 21, 2019 gas outage. The call between Ms. Reed and Mr. Turrini was to update Mr. Turrini on the substance of the call that Ms. Reed had with Mr. Yardley.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Third Set of Data Requests
Issued on March 4, 2019

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Division 3-4

Request:

Referring to the original response to Division 10-25 in Docket 4755,

- (a) Please identify (by pipeline or other transporter and contract ID) all Company transportation contracts with firm, contracted hourly delivery rights which exceed 1/24th of daily scheduled quantities.
- (b) Please identify (by pipeline or other transporter and contract ID) all Company transportation contracts with firm, contracted hourly delivery rights which limit the Transporters' firm delivery obligation to 1/24th of daily scheduled quantities.
- (c) Please identify by Contract ID all contracts which, in sum, have primary delivery rights in excess of Maximum Daily Transportation Quantity (MDTQ) rights.
 - i. Please explain, in narrative form with mathematical examples, how Company manages such contracts and scheduled quantities under such contracts, to take the Delivery Point Maximum Quantity (Pt MDQ) contracted at one or more contracted points while remaining within MDTQ for the contract.
 - ii. Is it the Company's position that Company can schedule more than its Pt MDQ at a location so long as it schedules within its contracted MDTQ in total?
 - iii. Is it the Company's position that Company, in reliance on its OBA(s), can take in excess of its Pt MDQ at a location so long as it schedules within its contracted MDTQ in total?

Response:

- (a) Please see the Company's responses to Division 3-1 and Division 3-3. Attachment DIV 3-1 provides a listing of all Algonquin Gas Transmission, LLC (Algonquin) transportation contracts with firm, contracted hourly delivery rights that exceed 1/24th of daily scheduled quantities.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
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Division 3-4, page 2

- (b) Please see the Company's responses to Division 3-1 and Division 3-3. Attachment DIV 3-1 provides a listing of all Algonquin transportation contracts with firm, contracted hourly delivery rights that limit the transporters' firm delivery obligation to 1/24th of daily scheduled quantities.
- (c) Algonquin pipeline contract # 93011E (Contract 93011E) has a maximum daily quantity (MDQ) of 56,035 dekatherms (Dth) and a Maximum Daily Transportation Quantity (MDTQ) of 85,345 Dth. This is the only contract that has primary delivery rights in excess of the MDQ. The MDTQ allocation for this contract, by meter, is listed below:

Meter Number/Meter Name	MDTQ (Dth)	MDQ (Dth)
4/Dey Street	25,137	
8/Westerly	1,221	
10/East Providence	48,147	
13/Portsmouth	6,504	
33/Tiverton	163	
12/Warren	4,173	
Total	85,345	56,035

- (i) For Contract 93011E, the Company takes the MDQ of 56,305 Dth and reduces it by the capacity MDQ that has been released to Marketers for the retail access program for the given month. Then, the Company nominates the remaining quantity by percentage to various primary meters listed above. The meter percentages are adjusted monthly based on the retail access capacity releases. The table below contains the percentage allocated to each meter.

Meter Number/Meter Name	Allocation (%)
4/Dey Street	10.303
8/Westerly	3.545
10/East Providence	54.684
13/Portsmouth	18.881
33/Tiverton	0.473
12/Warren	12.114
Total	100.000

The Narragansett Electric Company
d/b/a National Grid
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Please see the following example nomination for a day:

Utilizing full MDQ of contract = 56,035 Dth
Less Marketer capacity release of = 19,730 Dth
Remaining capacity = 36,305 Dth

Meter Number/Meter Name	Remaining MDQ (Dth)	Allocation (%)	Allocated to Meter Point (Dth)
4/Dey Street	36,305	10.303	3,740
8/Westerly	36,305	3.545	1,287
10/East Providence	36,305	54.684	19,853
13/Portsmouth	36,305	18.881	6,855
33/Tiverton	36,305	0.473	172
12/Warren	36,305	12.114	4,398
Total	36,305	100.000	36,305

To determine the allocation percentages each month, after Marketer releases have been completed, the Company retrieves for each meter point the remaining MDTQ value from the Algonquin pipeline Link system. Each meter point capacity amount is then divided by the total remaining capacity amount for all meter points on the contract to determine the allocation percentages. This ensures the Company does not exceed the MDTQ amount.

- (ii) The Company does not nominate an amount above Pt MDQ unless Algonquin specifically agrees to accept a scheduled amount in excess of the Company's Pt MDQ.
- (iii) Based on the language of the Algonquin tariff, the Company's Service Agreements with Algonquin, the Company's Operational Balancing Agreement with Algonquin, and historical practice between the Company and Algonquin, it is the Company's position that it can take gas in excess of its Pt MDQ at a specific location, so long as it schedules within its contracted MDTQ. The contractual agreements between the Company and Algonquin provide for flexibility to exceed nomination at certain points, understanding that it is unrealistic and impractical to deliver the exact amount nominated at each point.

The Narragansett Electric Company
d/b/a National Grid
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Division 3-4, page 4

Additionally, the contractual agreements between the Company and Algonquin also allow the Company to exceed scheduled amounts in total, subject to monetary penalties in certain situations. Moreover, the Company can nominate up to the full amount of its Pt MDQs. The Company works to adhere as closely as possible to its scheduled nominations and to avoid exceeding Pt MDQs, as well as Maximum Hourly Transportation Quantities (MHTQs) and MDTQs at all points on its system.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Third Set of Data Requests
Issued on March 4, 2019

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Division 3-5

Request:

Referring to the original response to Division 10-25 in Docket 4755, it referenced a peak hourly limit of 1,122 Dth compared to the load forecast. The response then stated in part:

“Based on the current load forecast, this load is forecasted to gradually increase to 1,124 Dth by the 2022/23 winter. Therefore, based on current project forecasts, 2022/23 is the point at which the Company could not serve incremental firm planning load without adding additional capacity resources with delivery to the Aquidneck Island area.”

In original response quoted above, it appeared to the Division that the Company was determining the date upon which new incremental firm planning load could not be served based on the winter when the forecast exceeded the peak hourly limit of 1,122 Dth (as such limit was calculated for the original response). The Company's corrected response, however, now indicates that the peak hourly limit is much lower, at 1,045 Dth, resulting in the peak hourly limit being exceeded, on a planning basis, in 2018-19 (as opposed to 2022-23).

- (a) Does the Company's corrected response mean that the date upon which the Company should not be serving incremental firm planning load is actually now, 2018-19? If yes, what risk now exists in light of the limit being exceeded?
- (b) If the Company is not maintaining that the date upon which the Company should not be serving incremental firm planning load is now (2018-19), please reconcile why the Company's original response stated that the date would occur when the forecast exceeded the peak hourly limit in 2022-23, but now that the forecast exceeds the limit (as corrected) in 2018-19, the Company is using a different measure of determining the date when the Company should not serve incremental firm planning load on Aquidneck Island without adding additional capacity.

Response:

- (a) and (b)

The Narragansett Electric Company d/b/a National Grid (the Company) historically has determined whether it can serve incremental firm load on its gas distribution system by determining whether its supply portfolio provides sufficient capacity on a gas supply portfolio-wide basis to serve the forecasted incremental firm load. The supply portfolio the

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Company analyzes includes all sources of supply, including from LNG facilities. As has been the past practice with Algonquin Gas Transmission, LLC (Algonquin), the Company considered Algonquin as a whole and balanced across all take stations on Algonquin.

Based on its most recent forecast, the Company projected that it could serve incremental firm load on its system, including on Aquidneck Island, without adding additional capacity infrastructure into the Aquidneck Island area. In the past, the Company determined that it could serve incremental firm load so long as the forecast growth could be met by all sources of its portfolio of supply. Based on recent experience and communications from Algonquin and an analysis of committed incremental firm sales in the Aquidneck Island area, the Company has determined that LNG supply on Aquidneck Island will be necessary prior to the winter of 2019/20 to meet the existing Aquidneck Island load plus the current level of committed incremental firm sales.

The Company is re-evaluating its ability to serve additional incremental firm load to Aquidneck Island until such time that additional capacity resources to delivery incremental supply to the Aquidneck Island system are in place. Furthermore, the Company has identified a need to recommission the LNG facility at the Newport Naval Station (LNG Facility) to supplement the supply capacity to the Portsmouth take station on the Algonquin system to ensure adequate supply to existing customers and provide supplemental supplies for reliability purposes in the event of another problem with deliveries to the Portsmouth Take Station. Portsmouth is the lowest point on the Algonquin system, and, whenever there is an operational problem on the Algonquin system, it is most likely to cause a pressure problem at the Portsmouth Take Station. The LNG Facility at the Newport Naval Station is needed to ensure reliability of supply to meet existing customers' requirements. The Company expects that the combination of the Algonquin supply to the Portsmouth Take Station and the Newport Naval Station LNG Facility will meet all existing Aquidneck Island firm load plus committed sales. The Company does not intend to make any new commitments to customers for incremental firm load until it has determined that there is adequate capacity available to serve the forecasted load growth on Aquidneck Island without relying on supplemental supply from the Newport Naval Station LNG facility.

The Company will be preparing a new gas forecast for Aquidneck Island in the second quarter of 2019 (2019 Forecast). Based on current committed sales, the 2019 Forecast is expected to be upwardly revised relative to the current forecast previously submitted in the Company's response to Division 10-25 in Docket No. 4755. Upon completion of that analysis, and in consideration of the number of committed sales that are converted to actual gas services, the Company will determine how much, if any, incremental firm load beyond

The Narragansett Electric Company
d/b/a National Grid
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the current committed sales may be added to Aquidneck Island prior to a more permanent solution being placed in service.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
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Responses to the Division's Third Set of Data Requests
Issued on March 4, 2019

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Division 3-9

Request:

The response to corrected Division 10-25 in Docket 4755 states in part: "The Company maintains an Operational Balancing Agreement (OBA) with Algonquin, which allows the Company to balance daily gas receipts and deliveries across all of its Algonquin take stations in Rhode Island, including the Portsmouth take station, which serves Aquidneck Island. This operational practice has been in place for decades."

- (a) Please explain whether and how the OBA is being relied upon by the Company to assure reliable service to Aquidneck Island on a design day (68 HDD), taking into account the demand served by Algonquin occurring elsewhere on the Company's system.
- (b) Is it the Company's position that the OBA allow the Company to deliberately exceed its maximum hourly and/or daily quantities at the take stations serving Rhode Island on design days?
- (c) To the extent that the Company places significant reliance on the OBA in planning for design days, please explain why the OBA was never discussed or explained in the Company's Long-Range Plan filed in Docket 4816 when describing how the Company addresses capacity and other supply needs.

Response:

- (a) The Narragansett Electric Company d/b/a National Grid (the Company) maintains an Operational Balancing Agreement (OBA) with Algonquin Gas Transmission, LLC (Algonquin), which allows the Company to balance daily gas receipts and deliveries across all its Algonquin take stations in Rhode Island. The OBA allows undertakes and overtakes at take stations compared to what is scheduled for the day, with one imbalance across all stations at the end of the day. This operational practice has been in place for decades.

The Company assesses design day conditions on the portions of the Rhode Island distribution that take gas from Algonquin as a whole as a part of the annual gas distribution system planning described in the Company's response to Division 1-7. That assessment shows a substantial volume of excess capacity available on the Algonquin system, specifically at the Wampanoag Trail and Dey Street take stations, compared to

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the Company's total contract Maximum Daily Quantities (MDQ) for delivery to those take stations. Additionally, the excess capacity available at those take stations is greater than the amount of predicted quantities in excess of MDQs on a design day at other take stations receiving gas from Algonquin, including the Portsmouth take station.

Historically, and consistent with the Company's rights under the OBA, Algonquin has not imposed limitations on the Company on a per-take station basis. Accordingly, the Company does not rely on the OBA to assure reliable service to Aquidneck Island on a design day. Rather, the Company has understood, both through the OBA and through operational practices consistent for years, that exceeding maximum daily or hourly quantities at individual take stations off the Algonquin system would not and did not imperil reliable service on Aquidneck Island or anywhere else, so long as total demand across the Company's take stations receiving gas from Algonquin did not exceed the total combined MDQs and the allowed imbalance tolerance on the day.

The events of January 21, 2019, demonstrated that the Company no longer can rely on this historical operating paradigm to ensure reliable service to Aquidneck Island, regardless of whether design day conditions are experienced, due to the potential for abnormal operating conditions on the Algonquin system and the sensitivity of Aquidneck Island to the impact of such occurrences. To mitigate this risk, the Company has established portable LNG operations for Aquidneck Island to mitigate the impact of any abnormal operating conditions and any capacity shortfalls until a permanent solution is placed into service.

- (b) The Company does not take the position that the OBA allows it to deliberately exceed its maximum hourly and/or daily quantities at the take stations serving Rhode Island on design days.
- (c) The OBA is an operational agreement. To date, the Company's Long-Range Resource and Requirements Plan (Long-Range Plan) filings, such as Docket No. 4816, have included only capacity agreements. The Company and the Division of Public Utilities and Carriers have been working together on how best to make the Long-Range Plan more robust and can certainly include the OBA in the discussion going forward.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Fourth Set of Data Requests
Issued on March 4, 2019

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Division 4-1

Request:

Referring to the response to Division 1-11, please provide copies of all the referenced Operational Balancing Agreements (including amendments). Please also provide copies of any other Operational Balancing Agreements (including amendments) (i) between the Company and Algonquin and (ii) the Company's affiliates and Algonquin.

Response:

Please see Attachment DIV 4-1 for a copy of the Operational Balancing Agreement (OBA) between The Narragansett Electric Company d/b/a National Grid and Algonquin Gas Transmission, LLC (Algonquin) dated September 15, 2016, which was referenced in the Company's response to Division 1-11. Algonquin uses a standard form OBA on file with the Federal Energy Regulatory Commission.

Contract ID # 4647
T00007584

OPERATIONAL BALANCING AGREEMENT ("AGREEMENT")
BETWEEN
ALGONQUIN GAS TRANSMISSION, LLC
AND
THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID

This Agreement is made and effective as of the 15th day of September, 2016, by THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID ("OBA Party") and by Algonquin Gas Transmission, LLC ("Algonquin"), collectively referred to as "Parties" or individually referred to as a "Party".

WITNESSETH

WHEREAS, the pipeline facilities operated by the Parties interconnect at the interconnection point(s) specified on Exhibit 1 attached hereto and incorporated herein by this reference (hereinafter referred to as "Location", whether one or more); and

WHEREAS, Party or Parties have entered into one or more agreements with third party Service Requesters ("Service Requester(s)") for the transportation of natural gas to or from the Location on the Parties' respective systems (said agreements hereinafter referred to as "Service Requester Agreements"); and

WHEREAS, from time to time, dekatherms of natural gas confirmed and scheduled by the Parties to be delivered to or received from the Location (said quantities hereinafter referred to as "Scheduled Quantities") may be greater than or less than the dekatherms of natural gas which are actually delivered at the Location, resulting in inadvertent over- or under-deliveries of the Service Requesters' Scheduled Quantities; and

WHEREAS, the Parties desire to implement an operational balancing agreement in order to facilitate more efficient operations, accounting, and systems management at the Location and on the Parties' respective systems; and

NOW, THEREFORE, in consideration of the premises and mutual covenants contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

Article 1: Operational Parameters

- (1.1) Prior to the date and time of flow at each Location, the Parties shall confirm and schedule Service Requester(s) nominations which will be delivered or received at each Location. Such confirmation between the Parties shall be made electronically via electronic interface system (such as the Parties' Electronic Bulletin Boards or other successor systems), unless otherwise mutually agreed to by the Parties.
- (1.2) The Parties intend that the total dekatherms of natural gas actually delivered and received each gas day at each Location will equal the Scheduled Quantities for said Location. Each Party will allocate the dekatherms that have been delivered and received at each Location among the Service Requester Agreements on its system pursuant to the Scheduled Quantities at each such Location. Any difference between the total actual physical flow of gas and the total of all Scheduled Quantities at each Location for such gas day is defined for the purposes of this Agreement as the "Daily Operational Imbalance". The sum of all unresolved Daily Operational Imbalances at any given time is defined for purposes of this Agreement as the "Cumulative Operational Imbalance". The Parties shall eliminate such Daily Operational Imbalance and Cumulative Operational Imbalance pursuant to this Agreement.
- (1.3) Unless the Parties otherwise mutually agree, the best available operating data for gas flows at the Location shall be used on a daily basis during any current period to determine the estimated



Contract No.: 510877-R1

Cumulative Operational Imbalance at the Location, with physical flow adjustments to be made during that current period as mutually agreed to by both Parties to attempt to maintain or achieve a Cumulative Operational Imbalance of zero at the Location. The Cumulative Operational Imbalance shall be calculated by Measuring Party no later than the tenth (10th) day of the following month.

- (1.4) Any Cumulative Operational Imbalance calculated pursuant to paragraph (1.3) above for said month shall be cashed-out in accordance with the balancing provisions set forth in Section 25.10 of the General Terms and Conditions of Algonquin's FERC Gas Tariff. Once the Cumulative Operational Imbalance has been cashed out for a particular month, such cash out shall be a Party's sole remedy for resolution of the Cumulative Operational Imbalance, unless mutually agreeable.

Article 2: Term and Effectiveness

- (2.1) Upon the termination of this Agreement, the Parties agree to cash-out any remaining Cumulative Operational Imbalance pursuant to the terms and conditions of this Agreement within thirty (30) days of termination of this Agreement or such other period of time which is mutually agreed upon by the Parties.
- (2.2) Subject to the provisions of this Article 2, this Agreement shall be effective as of the effective date and shall continue from month to month thereafter until terminated by either Party upon not less than thirty (30) days' prior written notice.
- (2.3) Notwithstanding the provisions of Paragraph (2.2), this Agreement can be terminated by either Party under the following conditions:
- (a) Failure by either Party to immediately adjust the operations of its system when informed in writing or by electronic interface system of a critical operating condition(s) by the other Party. A critical operating condition is determined in the sole reasonable judgment of the Party claiming a critical operating condition.

Article 3: Miscellaneous

- (3.1) This Agreement and the terms and conditions herein are subject to all present and future valid laws, orders, rules and regulations established by a governmental body with jurisdiction that is applicable to the Parties and this Agreement.
- (3.2) In the event a conflict exists or arises between this Agreement and the Algonquin FERC Gas Tariff, as amended from time to time, it is agreed and understood that the latter shall control. This Agreement shall supersede any other agreements with respect to the handling of a Daily Operational Imbalance and the Cumulative Operational Imbalance at the Location.
- (3.3) OBA Party hereby acknowledges and agrees that the provisions of Algonquin's FERC Gas Tariff are incorporated herein by reference and made a part of this Agreement for all purposes, and that such FERC Gas Tariff provisions shall be applicable to operations on Algonquin's pipeline system, including any and all rights and obligations of Algonquin pursuant to this Agreement and any and all rights and obligations of OBA Party pursuant to this Agreement. OBA Party also agrees that it shall be required to comply with all of the creditworthiness requirements in Algonquin's FERC Gas Tariff throughout the term of this Agreement.
- (3.4) This Agreement is for accounting and system management purposes only, and is entered into by the Parties with the understanding that the balancing activities provided for hereunder will not subject any non-jurisdictional entity to regulation by the Federal Energy Regulatory Commission as a "natural gas company" under the provisions of the Natural Gas Act. If, at any time, it should

Contract No.: 510877-RI

be determined that such balancing activities do result in such regulation, then this Agreement shall immediately terminate, and any remaining Cumulative Operational Imbalance shall be resolved pursuant to Paragraph (2.1) of this Agreement.

- (3.5) This Agreement is not assignable.
- (3.6) This Agreement shall be construed in accordance with the laws of the State of Texas without regard to conflicts of law principles. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHTS TO TRIAL BY JURY IN ANY ACTION ARISING UNDER THIS AGREEMENT.
- (3.7) No waiver by either Party of any one or more defaults by the other in the performance of any provision of this Agreement shall operate or be construed as a waiver of any continuing or future default or defaults, whether of a like or different character, or a waiver of each of the Parties' obligations to eliminate a Daily Operational Imbalance or the Cumulative Operational Imbalance by adjusting nominations and, or, deliveries and receipts of gas at the Location, as provided herein.
- (3.8) The Parties intend that there shall be no third party beneficiary to this Agreement. Nothing in this Agreement shall entitle any persons other than OBA Party or Algonquin, to any claim, cause of action, remedy or right of any kind relating to the transaction(s) contemplated by this Agreement.
- (3.9) As provided in this Agreement, written notices shall be mailed to the post office address of the Party intended to receive the same, as follows:
- (OBA Party):
Address:
GAS SUPPLY PLANNING
40 SYLVAN ROAD
E3.616
WALTHAM, MA 02451
- Algonquin:
P. O. Box 1642
Houston, Texas, 77251-1642
Attention: Operational Balancing
- (3.10) This Agreement constitutes the entire agreement between the Parties concerning the subject matters of this Agreement, and there are no oral or other written agreements relating to such matters.
- (3.11) This Agreement supercedes and cancels, as of the effective date of this Agreement, the contract(s) between the Parties hereto as described below:

None

Contract No.: 510877-R1

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement by their duly authorized representatives effective on the date set forth hereinabove.

ALGONQUIN GAS TRANSMISSION, LLC

By: Spectra Algonquin Management, LLC,
in its capacity as operator

By: Executed Online by WILLIAM L WHALEY

Name: WILLIAM L WHALEY

(OBA Party)

By: Executed Online by SAMARA A JAFFE

Name: SAMARA A JAFFE

THIS IS A TRUE COPY OF A SIGNED CONTRACT EXECUTED ELECTRONICALLY ON LINK

EXHIBIT 1
To the Operational Balancing Agreement
Between
Algonquin Gas Transmission, LLC
And
THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID ("OBA Party")
Date: 07/01/2017

Location

Algonquin M&R	<u>Description</u>
00004	NATIONAL GRID-DEY ST. (PROVIDENCE,RI) PROVIDENCE CO., RI
00008	NATIONAL GRID-WESTERLY (WASHINGTON,RI) WASHINGTON CO., RI
00010	NATIONAL GRID - E. PROVIDENCE (PROVIDENCE,RI) PROVIDENCE CO., RI
00012	NATIONAL GRID - WARREN (BRISTOL,RI) BRISTOL CO., RI
00013	NATIONAL GRID- PORTSMOUTH (NEWPORT,RI) NEWPORT CO., RI
00033	NATIONAL GRID - TIVERTON (NEWPORT,RI) NEWPORT CO., RI
00044	NATIONAL GRID-BURRILLVILLE (PROVIDENCE,RI) PROVIDENCE CO., RI
00064	NATIONAL GRID-BARRINGTON (PROVIDENCE,RI) PROVIDENCE CO., RI
00083	NATIONAL GRID-CUMBERLAND (PROVIDENCE,RI) PROVIDENCE CO., RI
00842	NATIONAL GRID - CRARY STREET-PROVIDENCE,,RI PROVIDENCE CO., RI

ALGONQUIN GAS TRANSMISSION, LLC

By: Spectra Algonquin Management, LLC,
in its capacity as operator

By: Executed Online by WILLIAM L WHALEY

Name: WILLIAM L WHALEY

(OBA PARTY)

By: Executed Online By SAMARA A JAFFE

Name: SAMARA A JAFFE

THIS IS A TRUE COPY OF A SIGNED CONTRACT EXECUTED ELECTRONICALLY ON LINK

Message

From: Delaney, Richard O. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=RICHARD.DELANEY]
Sent: 1/21/2019 3:22:38 PM
To: Turrini, Ross W. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Ross.Turrini]
Subject: FW: System update

Ross,

Providence is back on line.

Pressure have not started to recover at Portsmouth.

Rich

From: Loiacono, Paul J.
Sent: Monday, January 21, 2019 10:18 AM
To: Delaney, Richard O. <Richard.Delaney@nationalgrid.com>
Subject: System update

Good morning Rich,

Quick note on the outage we experienced at the Providence LNG plant. This morning they tripped offline at 04:48 with an ESD activation. Plant personnel were unable to get the system reset which prevented them from getting back on. They summoned help to the plant to assist with the issue which was identified to be valve on the boiloff system not opening following the shutdown. The plant was flowing approximately 2200/hr at the time of the shutdown. Providence did get back online at 08:28, back to the 2000/hr flow rate. They are struggling at this time to get us more flow.

The loss of the LNG had an immediate impact to our distribution system, the 200 psi line quickly dropped out to 100 psi, and the 99 psi system began to sag off as well. We picked up flow at Crary St and the loss of LNG naturally picked up the flow at Wamponaog Trail. This also had an immediate effect on the AGT G-System which supplies down to the Portsmouth GS on Aquidneck Island. The inlet pressure to Portsmouth has collapsed from 459 psi at the time of the shutdown down to 90 psi. We have I&R standing by on the island top bypass reg stations if needed.

Coupled with the plant shutdown was an issue that AGT was having up in Massachusetts that contributed to the G-System suffering. They had a frozen valve on the Hub Line (Maritimes NE) supply in Weymouth Ma. They have since bypassed this valve and pressures have recovered nicely in the Weymouth – Milton area of MA but will likely take several hours to show any relief on inlets to Cape Cod and Rhode Island which are fed from the G-System.

I'll keep you posted.

Paul Loiacono
Manager, Gas Control NE
[nationalgrid](#)
55 Bearfoot Rd.
Northborough, MA 01532

From: Vaughn, John V.
Sent: Monday, January 21, 2019 4:54 PM
To: Arangio, Elizabeth C. <Elizabeth.Arangio@nationalgrid.com>
Subject: Re: Important: Overdue Learning In LearningLink

Thanks Liz. I saw that we had a few hundred gas customers in RI without gas due to pressure problems. I wasn't sure how much, if any, of the low pressure problems, were due to NG LNG shortcomings. I'm sure it didn't help.

Sent from my iPhone

On Jan 21, 2019, at 4:03 PM, Arangio, Elizabeth C. <Elizabeth.Arangio@nationalgrid.com> wrote:

Hi JVV.

Technically no 'supply' issues -- small cuts here and there but gas is showing up. All P/L pressures.....Transco has large unit on now, so things have settled down....Rich D is concerned when/if they have to take large unit down and switch to smaller one. For now, all Power Gen receiving gas from Transco have been curtailed as of 1:45PM this afternoon (with exception of Caithness as they are firm).

Both Holtsville and GP are on and will remain on through tomorrow morning.

Onto NE. Regarding Tewksbury....equipment is frozen....they are working on it, but it does not look promising for today. On max day, we look to that plant for 83,600 dt...we call for 48,000 for today...that plant is now at 0. Commercial Point, post-construction this summer is still not back to full output capacity (per Tom Smith there is an issue w/ controls -- this one we knew about going into the weekend....not happy about it on January 18th, but nothing we can do). Commercial Point on a max day is 198,000 dt/day....not expected to make even half of that volume today. NGLNG has been struggling all day...it tripped off earlier today....killed pressures...which were already suffering as there were low inlet pressures from AGT. [For the record, as a result we have lost several hundred customers on Aquidneck Island aka Newport, RI -- I'm sure there will be more to follow on that]. For today's gas the nominations into NGLNG totaled 100,000dts.....as of 3PM the plant is expected to only put out 70,000. Same situation yesterday, but instead of pro-rating the cut Boston Gas took the hit (so instead of getting full 35K we got 11K). Told them, per the NGLNG tariff, they need to pro-rate the cuts...so Boston will get less, and so will UGI (the other customer in the tank right now -- they are released ConEd's capacity).

In summary, to replace the volumes from LNG that we aren't getting....for RI we bought 15,000 dt city-gate gas for [REDACTED] per dt. For MA, we are buying 29,000 dt at Dracut for [REDACTED] dt (to fill capacity) and 55,000 dt from [REDACTED] out the back door for [REDACTED] dt.

Will be in touch if anything changes. liz

Liz Arangio

Timeline for Newport, RI outage

04:44 Crary St GS Inlet Pressure 630 psi, flow rate 1222 DTHR

04:44 Wampanoag GS Inlet Pressure 616 psi, flow rate 1908 DTHR

04:44 Portsmouth GS Inlet Pressure is 477 psi, flow rate 877 DTHR

04:45 NGLNG Plant ESD activation, plant offline. Flow rate 2300 DTHR prior to shutdown

04:45 Wampanoag Tr GS flow rate increases to 3864 DTHR, Crary St flow rate increases to 2000 DTHR

04:49 Lowering R-300 at Allen's Ave in attempt reduce demand on Wampanoag Tr GS

04:51 Raising Crary St GS pressure to balance demand with Wampanoag Tr GS

05:04 Raising Smithfield GS and Cranston GS, both supplied from TGP, to help reduce load on AGT supplied stations.

05:41 Raising pressures at Lincoln GS (TGP supplied)

05:56 Requested Exeter LNG to increase flow rate to try and push more pressure into Providence system.

08:28 NGLNG is back online flow rate 1904 DTHR

08:28 Wampanoag Tr GS Inlet Pressure 378 psi, flow rate 3924 DTHR

08:28 Crary St GS Inlet Pressure 454 psi, flow rate 2670 DTHR

08:47 Received call from Wayne Page, Manager of AGT Gas Control explaining issue with frozen valve at Weymouth, MA which will impact pressures on the G-System. Valve was bypassed at that time, AGT pressures in Weymouth Ma showing quick recovery with bypass in operation. The valve in question is the supply from the Maritimes NE system into the AGT system at Weymouth.

09:07 Wampanoag Tr GS Inlet Pressure recovered to 394 with LNG back on, downward trend continued from there.

09:07 Crary St Inlet Pressure 407 psi, showed no recovery after LNG came back, downward trend continued.

09:07 Portsmouth inlet pressure is 174 psi and trending down

10:03 Portsmouth inlet pressure is 94 psi and trending down

10:06 Wellington @ Thames inlet pressure 52 psi and dropping. Notified I&R to be prepared to bypass regulator.

10:26 Wellington @ Thames LP regulator on bypass to maintain 9"wc

10:45 Wellington @ Thames inlet pressure 22 psi and dropping.

10:46 Wellington @ Thames bypass no longer supporting, pressure dropping across LP system to less than 3"wc

Message

From: Delaney, Richard O. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=RICHARD.DELANEY]
Sent: 1/22/2019 3:27:45 PM
To: Turrini, Ross W. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Ross.Turrini]; Stavrakas, John S. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=John.STAVRAKAS]
Subject: Algonquin Newport Outage Event Preliminary Paper.docx
Attachments: Algonquin Newport Outage Event Preliminary Paper.docx

Ross

Real early. Not complete.

AGT never committed that any valve closed. The said they had a frozen valve.

Rich



Algonquin Newport
Outage Event Pr...

PAGE 1 OF 4

ALGONQUIN SUPPLY NEWPORT OUTAGE - PRELIMINARY LESSONS LEARNED

Date: January 22, 2019

EXECUTIVE SUMMARY

CONTEXT

Algonquin Gas Transmission (AGT) a subsidiary of Enbridge Inc supplies gas to multiple Local Distribution Companies in the Connecticut, Massachusetts and Rhode Island areas. AGT supplies National Grid in Rhode Island on their "G" Lateral. Algonquin has a connection with another subsidiary of Enbridge known as the Maritimes Pipeline. These 2 pipelines connect in Weymouth, MA and the Maritimes pipeline is traditionally utilized to support pressures by supplying gas from Maritimes to the main Algonquin pipeline. Below is a high-level overview of their pipeline. The maximum allowable operating pressure (MAOP) of the G lateral is 750 psig.



We have 8 custody transfer or take stations supplied from their G lateral with the line terminating at our final station in Portsmouth RI. This station feeds portions of Portsmouth, Middletown and Newport Rhode Island. The contractual minimum delivery pressure for the Portsmouth station is 100 psig. January 21st was a Monday, a holiday (Martin Luther King Jr) with forecasted low temperature 24 hours prior to the event of 8 degrees for Providence. Compounding the weather concerns was the high temperature on the day prior of 35 degrees. This factor is a concern for pipelines and LDC's as transitioning from warm weather to cold weather is a challenge as compression and other redundancies are secured during the warmer weather and need to be returned quickly as temperatures drop. Normal cold weather operations were underway with supply and pressures normal.

SUMMARY OF EVENTS ON JANUARY 21

Weather came in significantly colder than forecasted with a Providence low of 2 degrees with a strong NW wind ranging between 15-23 mph. All normal supply restrictions and Operational Flow Orders were issued by both pipelines and National Grid. Non-Firm Customers in Rhode Island were directed to the be off gas on Saturday in preparation for the colder forecasted weather. The National Grid Gas Systems were experiencing a strong morning load. Overnight pressure on the AGT G lateral were declining but at rates that would not be abnormal. Inlet pressures at the Tiverton Gate station directly upstream of Portsmouth were at 515 psig at 6:15 a.m. and at Portsmouth they were 415 psig. Important to note is that the Algonquin supply to Portsmouth is fed by a single 6" transmission main downstream of their Tiverton Gate Station. The supply

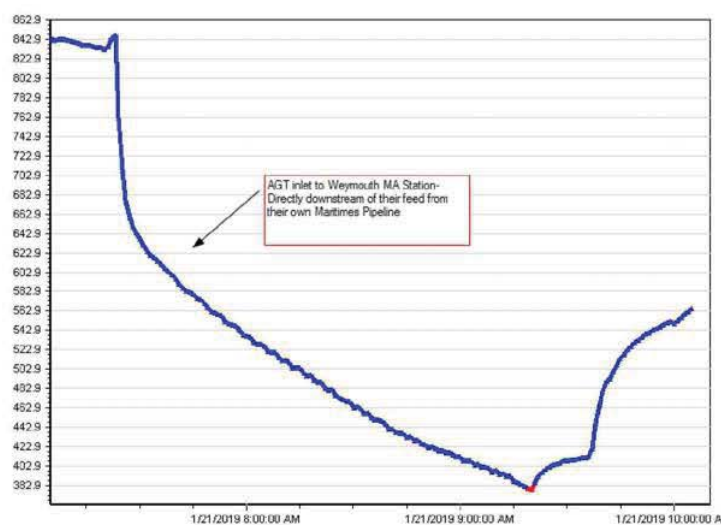
nationalgrid

BUSINESS REVIEW

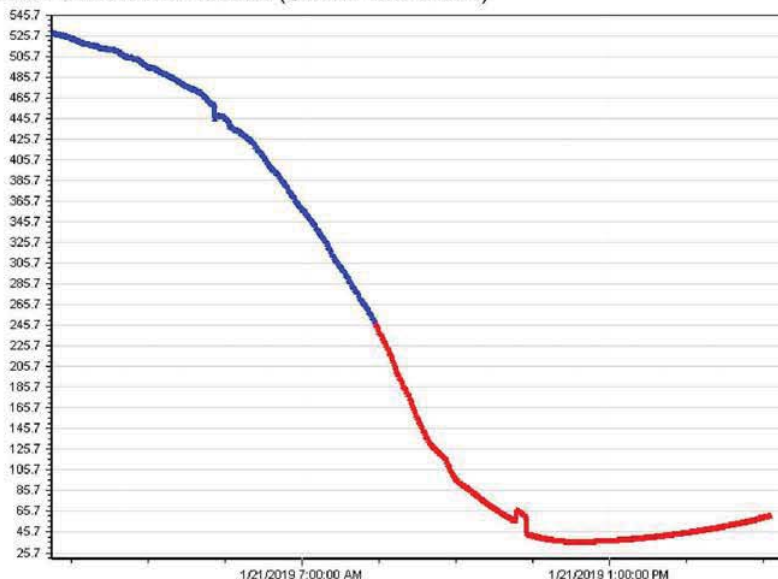
PAGE 2 OF 3

upstream of Tiverton is a mix of looped 6", 12" and 20" lines. As morning load continued to rise and the cold weather persisted, pressures on the G lateral continued to decline. Gas Control inlet to the Portsmouth Gate station went into low alarm at 8:30 am which is not an abnormal condition on very cold mornings. Trending of supply into the AGT system (Weymouth Inlet below) shows their significant loss of pressure at Weymouth. Looking at pressure trends of to the inlet of our Weymouth MA AGT station, AGT lost approximately 500 psig of pressure in 2 hours from approx. 7:30 am to 9:30am. At 9:43 a.m. the manager of AGT Gas Control contacted National Grid to apologize for the low pressures that we were seeing and indicated they had "a frozen valve on their Maritimes feed" and we were going to see continued low pressures.

Algonquin Inlet Pressure to Weymouth Station (Directly downstream of their supply feed from their Maritimes Pipeline)



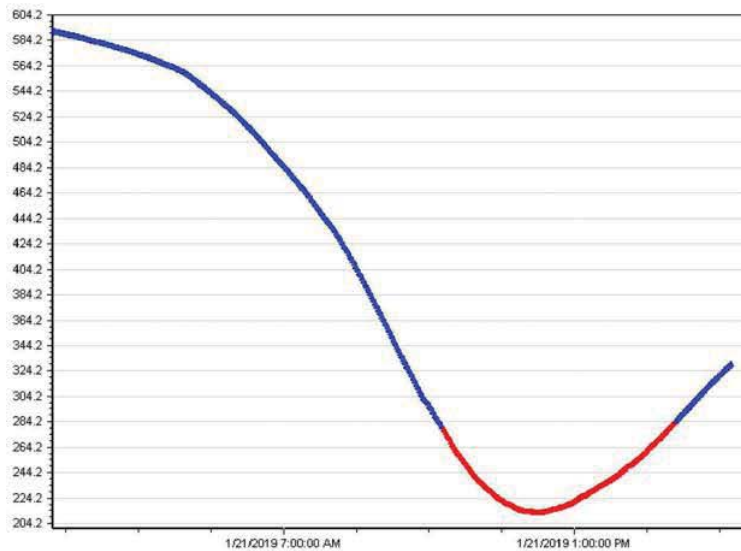
As you can see from the below inlet trend to our Portsmouth Gate Station over the same period the pressure decline was similar. (Similar time frame)



Inlet to Tiverton Gate Station (Directly upstream of Portsmouth)

BUSINESS REVIEW

PAGE 3 OF 3



Gas Control was working with National Grid LNG resources to maintain flows at the Providence LNG plant. While this plant does not feed the Newport area it does back off demand on the G Lateral.

INITIAL RESPONSE POTENTIAL CAUSE

NATIONAL GRID RISK MITIGATION FACTORS

1.

SHORT TERM IMPACTS LONG TERM IMPACTS

Conclusion

x

Message

From: Loiacono, Paul J. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=PAUL.LOIACONO]
Sent: 1/23/2019 2:43:56 PM
To: Delaney, Richard O. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Richard.Delaney]
Subject: RE: Algonquin Newport Outage Event Preliminary Paper.docx
Attachments: Algonquin Newport Outage Event Preliminary Paper (2).docx

My review



Algonquin Newport
Outage Event Pr...

From: Delaney, Richard O.
Sent: Tuesday, January 22, 2019 4:13 PM
To: Loiacono, Paul J.
Subject: Algonquin Newport Outage Event Preliminary Paper.docx

Rough draft.

Give me edits, additions and improvements

<< File: Algonquin Newport Outage Event Preliminary Paper.docx >>

PAGE 1 OF 4

ALGONQUIN SUPPLY NEWPORT OUTAGE - PRELIMINARY LESSONS LEARNED

Date: January 22, 2019

EXECUTIVE SUMMARY

CONTEXT

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SUMMARY OF EVENTS ON JANUARY 21

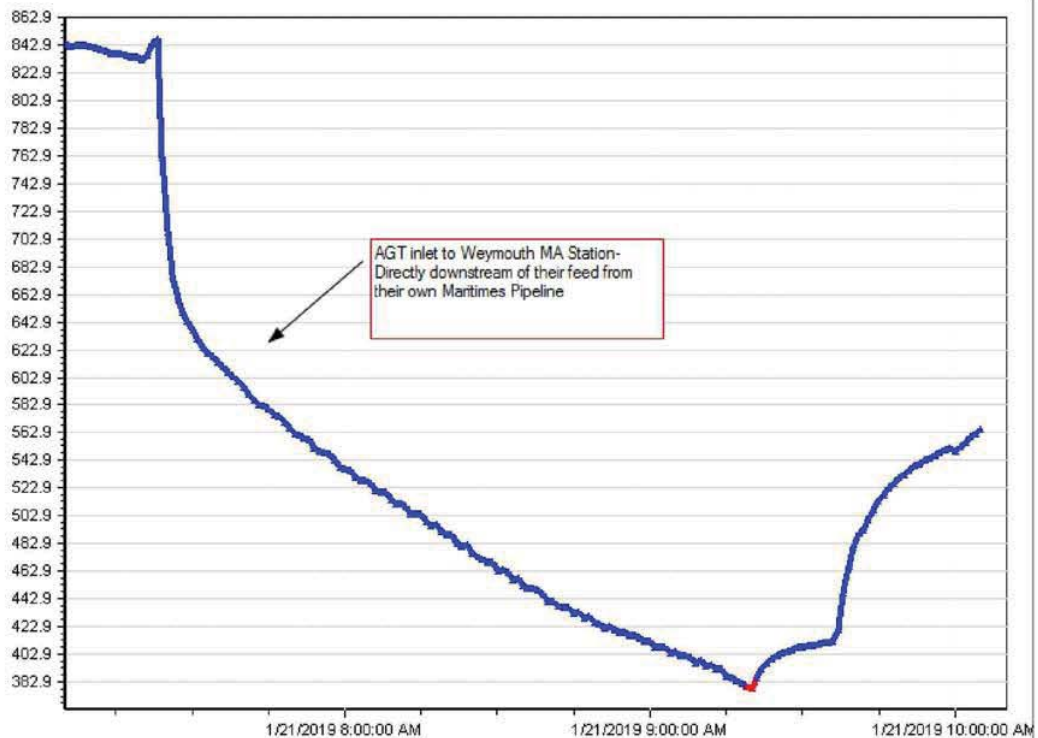
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BUSINESS REVIEW

PAGE 2 OF 4

AGT G lateral were declining but at rates that would not be abnormal. Inlet pressures at the Tiverton Gate station directly upstream of Portsmouth were at 515 psig at 6:15 a.m. and at Portsmouth they were 415 psig. Important to note is that the Algonquin supply to Portsmouth is fed by a single 6" transmission main downstream of their Tiverton Gate Station. The supply upstream of Tiverton is a mix of looped 6", 12" and 20" lines. As morning load continued to rise and the cold weather persisted, pressures on the G lateral continued to decline. Gas Control inlet to the Portsmouth Gate station went into low alarm at 8:30 am which is not an abnormal condition on very cold mornings. Trending of supply into the AGT system (Weymouth Inlet below) shows their significant loss of pressure at Weymouth. Looking at pressure trends of to the inlet of our Weymouth MA AGT station, AGT lost approximately 500 psig of pressure in 2 hours from approx. 7:30 am to 9:30am. At 9:43 a.m. the manager of AGT Gas Control contacted National Grid to apologize for the low pressures that we were seeing and indicated they had "a frozen valve on their Maritimes feed" and we were going to see continued low pressures. National Grid attempted to optimize LNG in Providence to reduce flows on the G lateral but this had limited impact on decreasing pressure. We were challenged at Providence maintaining output due to several operational issues. While this increased our demand on the pipe it appears the larger impact was the loss of pressure on the AGT system.

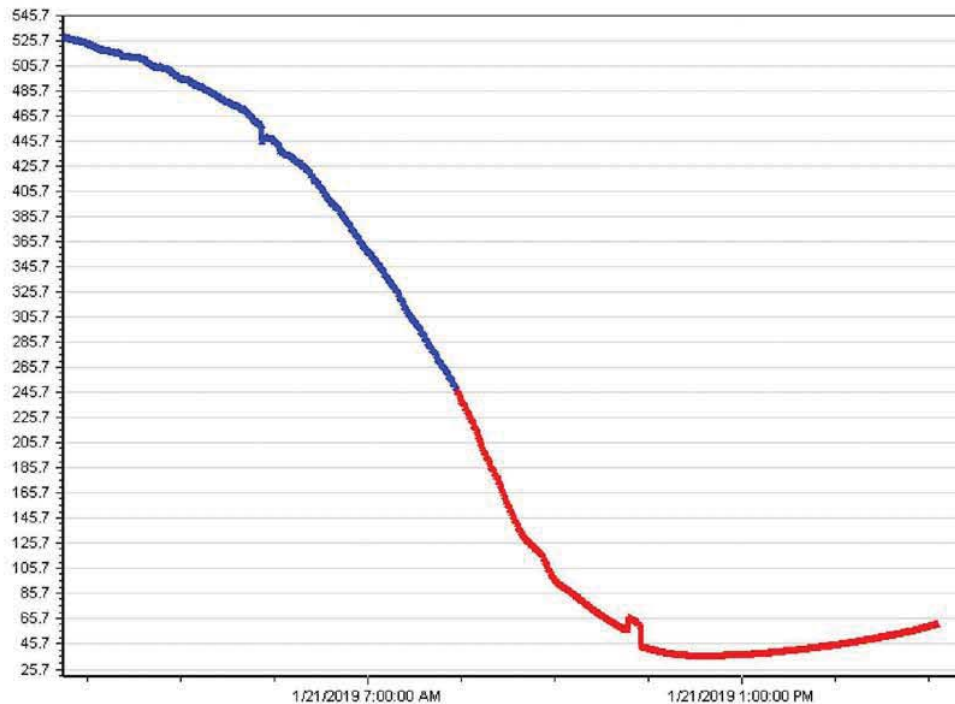
Algonquin Inlet Pressure to Weymouth Station (Directly downstream of their supply feed from their Maritimes Pipeline)



BUSINESS REVIEW

PAGE 3 OF 4

As you can see from the below inlet trend to our Portsmouth Gate Station over the same period the pressure decline was similar. (Similar time frame)



INITIAL RESPONSE

As inlet pressures to our Portsmouth station declined, the outlet of the station began to droop with the loss of pressure. The outlet of this station directly feeds a 99 psig system that then branches down to feed several medium and low-pressure districts. As the 99 psig system drooped the systems supplied drooped. National Grid Instrument and Regulation crews previously dispatched responded to regulators and opened bypasses to continue flow as regulators began to lose inlet pressure. We continued these operations until 12:15 at which time we made the decision isolate the Wolcott Ave regulator station. This station feeds an isolated low-pressure district of approximately 350 customers. We began receiving sporadic poor pressure and no gas calls. At this time, it was unknown the extent of the pressure declines in the LP system due to limited pressure readings returning to SCADA. I&R crews locked the regulator outlet pressures at the current low values to maintain a positive gas pressure in the system. Leadership teams weighing the risk of losing the entire system under extreme weather conditions made the determination to allow the system to flow until a plot of outages could be determined. The hope was that the outages would be limited to the extremities of the system and we could save the core through a limited shut down of impacted areas. Once the extent of outages was determined a decision was made to shut in the entire LP system in Newport. The decision was based on the spread of outages across the LP district in Newport. Concerns related to aged heating equipment that could

BUSINESS REVIEW

PAGE 4 OF 4

potentially have standing pilot boilers and a lack of safety control systems led the team to make this decision out of an abundance of caution for our customers.

POTENTIAL CAUSE

The cause of the National Grid Newport Outage event was the loss on inlet supply pressure to the Portsmouth Gate Station fed of the Algonquin G Lateral.

SHORT TERM IMPACTS

National Grid isolated approximately 6700 customers fed off the LP system in Newport and Wolcott Ave in Middletown. An Incident Command Structure was set up immediately as well as deploying the MEOC and establishing staging facilities for crews. This outage will be a significant effort to isolate, gas back in and relight all the customers individually. We worked with state and local officials to open warming facilities, offer hotels, food and other services. We utilized reverse 911 robocalls to notify customers to the extent of the outage and what to expect. Customer contact teams were deployed into the impacted areas with customer information packet including contact and claim information. We utilized mutual aid assistance through the predefined NGA programs.

LONG TERM IMPACTS

National Grid and Algonquin will be scrutinized regarding operations, design and engineering of the G Lateral, our distribution system and the supply scenario for Rhode Island. Increased regulatory scrutiny and oversight will be forthcoming. We have been raising our concerns about limited supply and over-reliance on single sources of pipeline supply into all the National Grid regions. We are exposed to this similar scenario in each region with this pipeline supplier and others. We as an industry need to work with state jurisdictions to overcome opposition to increased sources of pipeline supply. The requirement for 100% subscription for supply prior to the construction of a new pipeline source does not allow for redundancy and a margin of safety to be developed. We continue to design our supplies and system to meet 100% of our peak day needs with no margins.

Conclusion

The events of the morning of January 21 were unprecedented for National Grid. The loss of inlet supply pressure was unsustainable to the Newport area of Rhode Island. Teams inside National Grid did everything possible to maintain pressures given the challenging sequence of events. The are key lessons learned here including efforts needed to increase supply diversity, increased pipeline capacity to the Portsmouth Gate Station and the need to address some on system constraints.

Message

From: Turrini, Ross W. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=ROSS.TURRINI]
Sent: 1/31/2019 10:26:36 PM
To: Gould, James [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=James.Gould]
CC: O'Hara, Cordelia [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Oharac36d]; Williamson, Danielle [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Hordan]; Kresse, Ted [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Kresstcf5]; Sobolewski, Terence [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Terence.Sobolewski]; O'Shea, Kevin [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=8587f3a75787472d909916aff9e95f37]; Messenger, Mary-Leah [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Assadm8aa]; Seavers, Dean [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Seaved92e]; Reed, Marcy L. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Marcy.Reed]; Horan, Timothy F. [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=TIMOTHY.HORAN]; Ryan, Michael [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=MICHAEL.RYAN]; Perez, Nelson [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Nelson.Perez]; Newman, Joseph [/O=GRID/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=JOSEPH.NEWMAN]
Subject: Re: RI & New England Gas Supply QA Jan 29, 2019.pdf

Jim,

We should tone down what we say about the root cause, as we need to fully understand all of the data and the exact root causes (as there will probably multiple, their valve failure, utilities over taking from pipelines and our LNG facility). I am back in the office on Monday. If you need to talk to me I can be reached on my cell phone tomorrow afternoon.

Ross

Sent from my iPad

On Jan 30, 2019, at 4:00 PM, Gould, James <James.Gould@nationalgrid.com> wrote:

Cordi and Ross:

Attached you'll find a draft QA for the question, "Can the gas disruption event we experienced on Aquidneck Island happen again, or anywhere across Rhode Island? What is National Grid doing to secure supply and ensure reliability?"

Terry pitched in on the answer, turning it into a more strategic response tied to the region's overall supply issues.

See what you think. I'm out of the office the next two days. Dani, who is cc'd here, will manage any suggested changes. Ted will need this ASAP, as queries continue to come in re Aquidneck.

Thanks.

Jim

<RI & New England Gas Supply Answer Jan 29, 2019.pdf>

Bill Yarbley 11:18am 1/30/19 (called me b/c I could call him)

Pro LNG - everything went haywire after that

PHMSA, FERC, etc - asking for tracer data

Weymouth - nothing to do w/ this

tried to not be public, but RWT comment makes it difficult

don't want to throw us under the bus

- RWT stmt re: Weymouth - it's all folks have grabbed onto

Enbridge BOB - pushing BV to defend himself

not running to press, but basically need to call PHMSA, FERC

yesterday data → o/s parties - it'll be compelling to all that your operators are the problem

not sure why PHMSA involved - s/b FERC

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Sixth Set of Data Requests
Issued on March 7, 2019

Confidential
Division 6-3

Request:

Referring to the response to Division 1-1, page 4, it states that the Company "was unable to obtain the necessary glycol to operate [the temporary LNG facilities at Old Mill Lane]." Please explain the function of glycol and why it was important for operation of the LNG facilities. Please explain why the Company did not have glycol available, given the fact that the Company has other temporary LNG facilities in place elsewhere.

Response:

Glycol is a chemical that is used in antifreeze. A glycol/water mix is used in the portable heat exchanger that returns the liquified natural gas (LNG) to a gaseous state for injection into the distribution system. The glycol is necessary to the operation of a portable vaporizer because it lowers the freezing point of the liquid and allows the equipment to remain operational in sub-freezing conditions. The portable equipment that was relocated from storage to Old Mill Lane in Portsmouth uses approximately 1,750 gallons of water/glycol mix. Due to weight limitations and highway safety regulations, the portable vaporizers are stored and transported without the liquid. During the January 21, 2019 event, the Company pursued the parallel path of purchasing new glycol and transferring the liquid from a National Grid storage facility in Lowell, Massachusetts. Due to the emergency request and the holiday, the vendor could not provide new glycol and a clean transportation vessel was not available from the Company's contractor to perform the transfer. Consideration was given to using all water, but it was not practical due to the freezing weather conditions.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Sixth Set of Data Requests
Issued on March 7, 2019

Confidential
Division 6-4

Request:

Referring to the response to Division 1-1, page 2, the fourth paragraph contains a statement: "As part of its broader response, National Grid (1) increased LNG sendout at its facilities in Rhode Island and Massachusetts in an effort to reduce demand on the Algonquin System."

- (a) To which LNG facilities does this statement refer in both Rhode Island and Massachusetts?
- (b) What was the incremental amount of LNG sendout from each of these facilities as a result of this action that would not otherwise been injected if the low-pressure condition on the G system had not occurred?
- (c) At what hours of the day was this additional sendout occurring?
- (d) During the time of this additional sendout, was the Providence LNG facility vaporizing at its full capacity? If not full, please describe the operation level.

Response:

- (a) Rhode Island facilities: Exeter and Providence.
Massachusetts facilities: Commercial Point, South Yarmouth and Wareham.
- (b) and (c)
All plants noted in part (a) above, with the exception of Wareham, already were vaporizing for normal winter operations on the morning of January 21, 2019 before the Company increased sendout. The increased sendout that occurred on January 21, 2019, consisted of increased flow rates above what would normally be required on an hourly basis for several hours throughout the day; National Grid did not send out incremental LNG at these facilities over the period of the gas day January 21, 2019. In other words, the total LNG sendout at the end of gas day January 21, 2019 was normal.

Between the hours of approximately 9:00 a.m. through approximately 7:00 p.m., National Grid increased the flow rates at the LNG plants as follows:

The Narragansett Electric Company
d/b/a National Grid
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Confidential

Division 6-4, page 2

- Exeter, RI – Flow increased from 400 dekatherms (Dth) to 700 Dth, then adjusted to 600 Dth.
 - Providence, RI – Flow increased from 2,000 Dth to 5,100 Dth, then adjusted to 3,800 Dth.
 - Dorchester, MA – Flow increased from 500 Dth to 4,600 Dth to 5,200 Dth.
 - South Yarmouth, MA – Flow increased from 300 Dth to 1,000 Dth, then adjusted to 650 Dth.
 - Wareham, MA – Flow increased from 60 Dth to 135 Dth.
- (d) No, the National Grid LNG LLC facility in Providence was not vaporizing at its full capacity. The facility came back on line at 8:28 a.m. and operated at approximately 82% capacity for a period of time, then at approximately 61% capacity for the remainder of the gas day when needed.

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The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Sixth Set of Data Requests
Issued on March 25, 2019

Division 6-12

Request:

Referring to the response to Division 6-3, why did the Company not have glycol available in inventory to address emergency conditions? Is it common practice at National Grid across all its jurisdictions not to store extra glycol for emergencies? If not why not?

Response:

National Grid had an adequate inventory of glycol available at its facility in Lowell, Massachusetts. As described in The Narragansett Electric Company d/b/a National Grid's (the Company) response to Division 6-3, the Company was not able to obtain a clean transportation vessel from a contractor on the holiday to transport the product from Lowell to Aquidneck Island.

On January 21, 2019, the Company did not have portable LNG operations set up at the Old Mill Lane site in Portsmouth because the Company did not expect that pressures on the Algonquin Gas Transmission, LLC G System into the Portsmouth take station would fall well below the design minimum guarantee of 100 psig and maximum allowable operating pressure of 750 psig. In response to the low-pressure situation that developed at the Portsmouth take station, the Company took numerous actions, including attempting to set up a portable LNG operation at Old Mill Lane as quickly as possible. The Company normally plans portable LNG operations in advance and sets those operations up over multiple days. National Grid maintains sufficient glycol inventories to operate all its LNG facilities, including portable operations. The Company does not expect to set up new portable LNG capabilities to respond immediately to pressure and supply emergencies. Although National Grid had sufficient glycol in inventory to operate the new portable LNG operation at Old Mill Lane that the Company set up on an emergency basis on January 21, National Grid did not have that glycol on-site at Old Mill Lane and could not transport it to Old Mill Lane.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Seventh Set of Data Requests
Issued on March 7, 2019

Confidential
Division 7-1

Request:

Referring to the response to Division 1-7, does the Company's system planning and modeling of its gas distribution systems on Aquidneck Island include contingency scenarios relating to hypothetical system failures or other similar incidents that could cause low pressure conditions? If yes, please identify each of the contingency scenarios that have been modeled and describe any proposed solutions arising out of the analyses – other than those identified in 1-7(d)&(e).

Response:

The Company's system planning and modeling of its gas distribution systems on Aquidneck Island typically does not include contingency scenarios relating to hypothetical system failures or other similar incidents that could cause low pressure conditions. In 2014 and 2015, however, the Company considered a conceptual project to add a distribution pipe connecting the outlet of the Tiverton take station to the 99 psig system on Aquidneck Island. This would create a second source of supply and provide reliability for up to 50 Heating Degree Day conditions in the event the Portsmouth take station was not operational or the supply was restricted at Portsmouth. The project involved the installation of approximately 12 miles of 16-inch and 12-inch 99 psig distribution main, the installation of a 55 psig district regulator station, and a major waterway crossing of the Sakonnet River. As explained in the Company's response to Division 1-43, this project did not progress to a formal proposal because the project was not necessary to meet the forecasted demand on Aquidneck Island and the high costs exceeded the anticipated benefits.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Seventh Set of Data Requests
Issued on March 7, 2019

Confidential
Division 7-2

Request:

Referring to the response to Division 1-7(b), the response states that the Company did not do any modeling for a scenario similar to the one that occurred on January 21, 2019,

- (a) Has the Company modeled any contingency scenarios that assumed any level of low-pressure condition occurring on the Algonquin G system that were out of the Company's control?
- (b) If yes, please provide the details. If not, please explain why the Company has not performed any such modeling.

Response:

- (a) The Company has not modeled any contingency scenarios that assumed any level of low-pressure condition occurring on the Algonquin G system that were out of the Company's control.
- (b) The modeling of contingency scenarios that assume a low-pressure condition occurring on the Algonquin G system or any other transmission lateral out of the Company's control is not part of the reliability planning performed by the Company.

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Division 7-6

Request:

Please explain why the Company's approach to system modeling and planning does not use scenarios for "worst case" to harden the system, including contingences for issues like what happened on January 21, 2019?

Response:

The Narragansett Electric Company d/b/a National Grid's (the Company) approach to system modeling and planning assumes that transmission pipeline companies will deliver gas to the take stations at pressures equal to at least the minimum guaranteed contractual pressure. It is unreasonable to plan the system for "worst case" scenarios similar to what occurred on January 21, 2019, where Algonquin Gas Transmission, LLC delivered gas to the Portsmouth take station at pressures far below the contractual minimum pressure. There are 14 take stations through which the Company receives gas supply to its Rhode Island distribution system. If the Company designed the distribution system for "worst case" scenarios at each take station to prepare for an event similar to what occurred on January 21, 2019, then the scope and scale of the additional system hardening projects that the Company would need to design for the distribution would be cost prohibitive.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Ninth Set of Data Requests
Issued on March 20, 2019

Confidential
Division 9-2

Request:

What was the heating degree day temperature for that day (March 7, 2014) and March 6, 2014?

Response:

Gas Day March 7, 2014 verified at 31 heating degree days (HDD) and Gas Day March 6, 2014 verified at 43 HDD.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Ninth Set of Data Requests
Issued on March 20, 2019

Confidential
Division 9-4

Request:

If the Navy was an interruptible service customer, why does the response describe this as “proactively reaching out” to the Navy to “request” that they cease using natural gas if the Company had the unilateral right to interrupt the customer and require the Navy to cease taking gas deliveries without the permission of the Navy under the tariff terms? See Section 8 of Rate 61, stating: “The Customer will curtail or discontinue service when, in the sole opinion of the Company, such curtailment or interruption is necessary in order for it to continue to supply the gas requirements of its firm customers at such time. The Company will attempt to give the Customer three (3) working days’ notice of such curtailment, except in emergency situations, when at least one hour’s notice shall be given.”

Response:

On March 7, 2014, the Company informed the U.S. Navy that the Navy Base needed to switch to its alternate fuel due to low pressure conditions from the Algonquin Gas Transmission, LLC G Lateral affecting service to the Portsmouth take station. As a courtesy to this interruptible customer, the Company requested that the Navy accommodate this need. The Company’s proactive “request” was a form of notice to the Navy, which is required under the tariff as described in this data request. Whether or not the Company gave the Navy the courtesy request to curtail gas service, the Company had the right under its tariff to interrupt the Navy and require the Navy to curtail or discontinue gas service.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Ninth Set of Data Requests
Issued on March 20, 2019

Confidential
Division 9-6

Request:

If the cause of the outage was an “upstream supply issue on Algonquin” (as indicated in the response), how would/did the installation of a 99 psig gas main along Gibbs Avenue relate to avoiding the same upstream supply issue in the future?

Response:

The local distribution system gas main improvement on the 99 psig system along Gibbs Avenue would not avoid an upstream supply issue or prevent one from happening in the future. The installation of the 99 psig gas main along Gibbs Avenue connected two laterals on the 99 psig distribution system, which is a primary feed from the Portsmouth take station to downstream distribution systems on Aquidneck Island. The project improved downstream pressures, thus making the distribution system more resilient to lower Algonquin Gas Transmission, LLC delivery pressures into the Portsmouth take station.

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Division 11-3

Request:

In a recent meeting with the Division in connection with the investigation, the Company explained that a moratorium on Aquidneck Island is now needed because the Company could no longer rely on its Operational Balancing Agreement (OBA) with Algonquin to exceed peak hourly limits, because of a notice that was sent out by Algonquin on January 29. However, on March 1, when the Company filed corrected Division 10-25 in Docket 4655, the response addressed a mistake in forecasting the peak hourly limit at Portsmouth. It then stated:

“For the 2018/19 winter, the Company contracted for sufficient resources in its portfolio, including pipeline capacity on both Tennessee Gas Pipeline and Algonquin, to meet the Company’s total load requirements, including those for Aquidneck Island. The Company maintains an Operational Balancing Agreement (OBA) with Algonquin, which allows the Company to balance daily gas receipts and deliveries across all of its Algonquin take stations in Rhode Island, including the Portsmouth take station, which serves Aquidneck Island. This operational practice has been in place for decades.”

- (a) If the January 29 notice caused a dramatic change in planning, why did the Company reference the OBA in the response, which left the impression on March 1 that the Company was providing assurances to the Division that the OBA addresses the risk of exceeding the peak hourly limit?
- (b) On March 1, did the sponsors of Division 10-25 already have an understanding that the Company could no longer rely on the OBA to exceed peak hourly limits because of the notice of January 29 from Algonquin? If so, why was this fact not disclosed? If not, when did the sponsors draw the conclusion that the OBA could not be relied upon and why did it take so long to realize it?

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Division 11-3, page 2

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) has been evaluating whether and how much it should alter its planning for and ability to serve incremental firm load on Aquidneck Island since receiving the January 29, 2019 notice (the Notice) from Algonquin Gas Transmission, LLC (Algonquin), and, indeed, began considering those issues after the January 21 service interruption. After receiving the Notice, there was concern that the Notice could limit the Company's right to balance takes under the Operational Balancing Agreement (OBA). Because of those concerns and the Company's near-term inability to increase supply for delivery to the Portsmouth take station, the Company considered that it may need to impose a moratorium. After further analysis of the Notice and additional steps the Company could take to address capacity concerns, the Company developed a plan for Aquidneck Island involving both traditional and non-pipeline alternative solutions to forestall the need for a moratorium in the near-term and allow the Company to focus on long-term supply and capacity solutions.

When the Company and the Division of Public Utilities and Carriers (Division) met on March 25, 2019, the Company believed that a moratorium on gas sales might be necessary to assure reliability of service to existing customers on Aquidneck Island. The Company continued to analyze the situation and has determined that it can permit new customer connections if it implements both traditional and non-pipeline alternative solutions. If those solutions do not come to fruition, the Company may need to implement a moratorium on new gas services on Aquidneck Island.

- (a) The Notice did not cause a dramatic change in the Company's planning. The Company's corrected and supplemental response to Division 10-25 in Docket No. 4755 referenced the OBA to explain why the Company's procurement of gas supply across its portfolio was sufficient for gas supply planning despite the forecast that demand during the peak hour on a design day would exceed the calculated contractual peak hourly limit at the Portsmouth take station. The Company plans its gas supply with the understanding that its OBA with Algonquin facilitates system-wide planning for total supply – not take station-by-take station procurement. This flexible planning process remains in place and is necessary for multiple reasons, including: (1) the variability of actual demand from forecasted demand; and (2) the volume of gas supplied by third-party marketers on behalf of customers that is delivered to take stations other than those take stations that actually serve those customers.
- (b) The sponsors of the corrected and supplemental response to Division 10-25 in Docket No. 4755 were aware of the Company's concerns regarding the Notice on March 1, 2019. At that time, however, the Company had not yet reached a final decision on whether it could serve

The Narragansett Electric Company
d/b/a National Grid
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Division 11-3, page 3

incremental firm load notwithstanding the Notice. For that reason, the Company believed it was premature to reference those concerns and the possibility of a moratorium in its corrected and supplemental response to Division 10-25 in Docket No. 4755.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Twelfth Set of Data Requests
Issued on April 8, 2019

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Division 12-12

Request:

Please detail the process the Company follows once a weather or other event has resulted in a need to use portable LNG vaporizer equipment on short notice, including the process to support and mobilize staff and mobilize equipment to ensure the portable LNG vaporizer equipment is set up, glycol is available, and the equipment is staffed and ready to go in advance of the event.

Response:

Portable LNG operations are not intended for short notice pressure and supply emergencies. A standardized process is not in place for emergency use of portable LNG vaporization operations. Mobilizing portable LNG operations generally takes multiple days and requires the planning and coordination of the LNG Operations, Instrumentation and Regulation, and Gas Control groups, and at times other personnel, to begin the process of delivering the vaporizers, odorant injection equipment, glycol, and LNG to the designated site. Please see Attachment DIV 12-4 for a description of the process to mobilize portable LNG operations.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Twelfth Set of Data Requests
Issued on April 8, 2019

Confidential – Investigatory Record
Division 12-13

Request:

Please provide a complete explanation of why the Company made a decision to mobilize the temporary portable operations to Old Mill Lane and what the Company believed it might accomplish with the mobilization.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) decided to mobilize temporary portable LNG operations to Old Mill Lane on Monday, January 21, 2019, because: (1) Algonquin Gas Transmission, LLC (Algonquin) had informed the Company that it had experienced operational problems at its regulator station in Weymouth, Massachusetts, and (2) the Company had observed decreased inlet pressures to the Portsmouth take station from the Algonquin G System. The Company believed it might have been able to mobilize portable LNG on Aquidneck Island quickly to inject gas into the Aquidneck Island distribution system and increase pressures on that system.

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Division 12-14

Request:

Please provide a narrative of the sequence of actions taken with respect to the mobilization of the temporary portable LNG equipment to Old Mill Lane, from the time that Kathleen Sullivan began mobilizing (as described in Division 1-1, page 2) through the time that the Company came to the conclusion it could not operate the equipment because of a lack of glycol. When providing this narrative, please also provide a timeline.

Response:

Between 9:30 a.m. and 11:30 a.m. on January 21, 2019, after the Gas Control group had informed the Director of LNG Operations about the potential need for portable LNG operations on Aquidneck Island, the Director of LNG Operations notified the Manager of Special Projects/Maintenance Group/Portable LNG and directed him to begin the planning process for setting up temporary portable LNG equipment at Old Mill Lane in Portsmouth. During this time period, the Manager of Special Projects/Maintenance Group/Portable LNG:

- Contacted people to make arrangement to transport portable LNG vaporizing equipment from Leominster, Massachusetts to the Old Mill Lane site;
- Inquired with National Grid's contracted third-party glycol transporter to request transportation of glycol to operate the portable LNG operation from storage in Lowell, Massachusetts to the Old Mill Lane site; and
- Communicated to the full Special Projects/Maintenance Group/Portable LNG group that National Grid would need them to work to set up the portable LNG operation at the Old Mill Lane site.

Between at approximately 10:15 a.m. and 11:30 a.m., Kathleen Sullivan started communicating to Rhode Island LNG personnel that they would be needed to assist with setting up the portable LNG operation at Old Mill Lane.

Ms. Sullivan also notified the Company's Community and Customer Management group that the Company would be setting up the emergency portable LNG operations so that group could communicate with the local government officials about the operation.

Ms. Sullivan also notified National Grid's Corporate Security group to have a security guard assigned to the site for the emergency portable LNG operation.

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Also during this time period, the Gas Control group had begun coordinating with the third-party portable LNG transporter for the delivery of LNG to the Old Mill Lane site.

At approximately 10:45 a.m., the Lead Specialist for Rhode Island LNG began making arrangements to transport the portable containment equipment necessary to protect surrounding areas from potential spills, from Cumberland to Old Mill Lane. The Company had obtained this equipment specifically for use at the Old Mill Lane facility during previous operations and had stored it at the Cumberland facility. Portable containment equipment is designed specifically on a site-by-site basis.

At approximately 11:00 a.m., the Lead Engineer for Rhode Island LNG and the Senior Supervisor for the Exeter LNG facility began making telephone calls to arrange for the following activities that were necessary to set up the emergency portable LNG operation at Old Mill Lane:

- Installation of matting at the Old Mill Lane site by a third-party contractor, which was necessary because the site is wet and the matting stabilizes the area to make it safe for the equipment;
- Preparation of rolled hay in netting (wattles) around the perimeter of the site as an environmental control to protect the wetlands in the area, consistent with the Company's environmental policies;
- Arranging for delivery and set up of portable bathroom facilities and trailer for operators of the portable LNG operation;
- Arranging for the set up of electrical connections at the site;
- Arranging for an emergency generator at the site; and
- Engaging a contractor to obtain sand and spill containment supplies to be used with the portable containment equipment.

At 11:30 a.m., the planning steps to set up the portable LNG operation had been performed and Ms. Sullivan and her team began the process of mobilizing the portable LNG operation at Old Mill Lane.

At approximately 12:00 p.m., the Manager of Special Projects/Maintenance Group/Portable LNG determined that the Company's contracted glycol transporter did not have a clean transport vehicle available to transport glycol to the Old Mill Lane site. At this time, he began seeking out alternate third-party transporters. Simultaneously, the Senior Supervisor for the Exeter LNG facility began reaching out to glycol suppliers to purchase a new glycol supply to be delivered directly to Old Mill Lane.

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At approximately 1:00 p.m., the Lead Engineer for Rhode Island LNG traveled to the Old Mill Lane site to coordinate and supervise the set up of the portable LNG operation. Also at approximately this time, employees from the Customer Meter Services (CMS) group arrived at the Old Mill Lane site to ensure that the header valve in the 90 psig line where the portable LNG equipment would inject gas into the system was open. Those employees found the valve full of water and frozen, and they began the process of defrosting the valve.

At approximately 1:45 p.m., the matting began to arrive and be installed at the Old Mill Lane site.

At approximately 3:00 p.m., Ms. Sullivan arrived at the Old Mill Lane site to assist with the coordination and supervision of the set up of the emergency portable LNG operation.

At approximately 4:00 p.m., the Lead Specialist for Rhode Island LNG and Senior Supervisor for the Exeter LNG facility arrived at the Old Mill Lane site with the portable containment equipment that had been at the Cumberland location. Also at approximately this time, the portable bathroom facilities arrived at the site.

At approximately 4:30 p.m., the supervisor for the LNG transport company conducted a safety assessment at the Old Mill Lane site to ensure proper access for the trucks that would deliver the LNG to the facility.

Also at approximately 4:30 p.m., the CMS group successfully completed defrosting and opening the header valve in the 90 psig gas line where the portable LNG equipment would inject gas into the distribution system.

At approximately 5:00 p.m., the Company (1) received notification from the contractor that provides sand and spill containment supplies that it did not have the support staff necessary because of the holiday and could not deliver until 7:00 a.m. the following day, and (2) determined that it had not been able to identify a transport company with a clean vehicle to transport the glycol that day, nor a glycol supplier able to provide the amount of glycol necessary for the unit. The Company continued to seek out other options for delivery of sand and spill containment equipment and glycol.

At approximately 5:15 p.m., the Company identified a contractor that said it would be able to provide the sand and spill containment supplies by 9:00 p.m.

At approximately 7:00 p.m., the contractor completed the installation of the matting at the site.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
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Responses to the Division's Twelfth Set of Data Requests
Issued on April 8, 2019

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By 7:00 p.m., the Company had made the decision to shut down the entire low-pressure distribution system in Newport and shut off gas service to all customers served by that system. Accordingly, the urgency of efforts to set up the portable LNG operation at the Old Mill Lane site dissipated until the low-pressure distribution system went back online. The Company had worked as quickly as it could to take all the actions needed to safely set up portable LNG operations at Old Mill Lane, which ordinarily occurs over multiple days. The Company continued to take steps to complete the set-up of the operation, but it no longer planned to vaporize and inject LNG into the system on an emergency basis on January 21, 2019. If the Company had been able to transport or obtain glycol for the operation on January 21, 2019, the Company would have been able to begin vaporizing LNG in the evening after the sand and spill containment supplies arrived and after the first vaporizer arrived from Leominster, Massachusetts at approximately 8:30 p.m.

The Company worked to complete the set-up to be available, if necessary, for additional forecasted cold weather. The Company had the glycol and sand and spill containment supplies delivered on the morning of January 22, 2019. The second vaporizer also arrived on January 22, 2019. Beginning the afternoon of January 24, 2019, the Company performed operational testing. On January 28, 2019, the Company determined that it should install a tap in the 60 psig distribution line. The Company completed the installation of that tap on January 29, 2019.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Twelfth Set of Data Requests
Issued on May 6, 2019

Confidential – Investigatory Record
Division 12-16

Request:

Does the Company plan proactively to have portable LNG available for forecasted weather events? If so, why did the Company not plan to have portable LNG available on Aquidneck Island ahead of the January 20-21, 2019 weather event? If not, why not?

Response:

Yes, The Narragansett Electric Company d/b/a National Grid (the Company) plans proactively to have portable LNG available for forecasted weather events, when necessary. For example, the Company deploys portable LNG for distribution system pressure support during peak usage conditions if existing distribution facility infrastructure is predicted to be inadequate to maintain continuous service to existing customers. The Company also would consider deploying portable LNG to make up for insufficient gas resources, including pipeline capacity and LNG resources. In addition, the Company deploys portable LNG when required as a contingency during transmission pipeline company scheduled operations and maintenance activities that could impact deliveries of pipeline gas to the Company and affect continuous service to existing customers.

The Company did not plan to have portable LNG on Aquidneck Island ahead of the January 20-21, 2019 weather event because the Company had procured sufficient resources, including pipeline capacity and LNG resources, to meet forecasted supply requirements for that day. January 20-21, 2019 was not forecasted to reach or exceed peak day conditions, and did not reach or exceed peak day conditions. Moreover, the Company's contracted supply resources were sufficient to satisfy forecasted peak day demand. Accordingly, the Company did not have reason to plan to have portable LNG available on Aquidneck Island ahead of January 20-21.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Twelfth Set of Data Requests
Issued on May 6, 2019

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Division 12-26

Request:

Referring to the response to Division 12-14, the response indicates that the first vaporizer did not arrive in Portsmouth until 8:30 pm, which was nine hours from the point at which Ms. Sullivan began the planning steps to set up the portable LNG operation. Why did it take so long for the first vaporizer to arrive?

Response:

The contracted vendor for transporting the vaporizer did not have personnel on its property that was immediately available because of the holiday. The vendor brought in personnel and responded to the request to transport the equipment as soon as the personnel arrived on site. After the vendor's personnel responded, they traveled to the Leominster, Massachusetts facility where the vaporizer was located, connected the trailer, performed the necessary safety checks, and then traveled with the vaporizer to the Old Mill Lane site in Portsmouth.

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Division 13-3

Request:

Please explain the Company's understanding of why the service area on Cape Cod recovered from the low-pressure condition on the G system, in contrast to what occurred on Aquidneck Island?

Response:

The Portsmouth take station is the lowest point on the Algonquin Gas Transmission, LLC (AGT) G-System. Therefore, The Narragansett Electric Company d/b/a National Grid (the Company) understands that low-pressure conditions on the G-System impact the Portsmouth take station most acutely. Additionally, the Company understands that the single six-inch diameter transmission line on the AGT G-System feeding into the Portsmouth take station contributes to the Portsmouth take station experiencing greater impacts from low-pressure conditions on the G-System.

The Company further understands that the National Grid service area on Cape Cod did not experience service outages as a result of the lower inlet pressures from AGT to its take stations, and that those inlet pressures did not drop as low as the inlet pressures to the Company's Portsmouth take station.

The inlet pressures to the Cape Cod take stations and the Portsmouth take station both recovered as expected once the low-pressure condition on the G-System dissipated. Pressures on the Aquidneck Island distribution system also recovered. However, because service outages occurred on the low-pressure distribution system on Aquidneck Island, it was necessary to shut down that system for the safety of customers to ensure that there were no dangerous conditions caused by the increased pressures returning to the system.

Accordingly, the difference between what occurred on Cape Cod and what occurred on Aquidneck Island was not a difference in how the systems recovered from the low-pressure condition. Rather, it was a difference in the impact the low-pressure condition on the G System had on the two service areas.

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Division 15-2

Request:

Was it the Company's understanding that the low-pressure distribution system on Aquidneck Island was vulnerable to an outage when the low-pressure conditions were experienced from the "G System" on January 21, 2019? Please explain the basis for that understanding.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) did not consider the low-pressure distribution system on Aquidneck Island to be vulnerable to an outage in advance of the events of January 21, 2019. The Company does not expect that it will receive delivery of gas from its transmission providers at lower than the minimum contracted pressures. Once the Company observed that pressures from the Algonquin Gas Transmission, LLC (Algonquin) G System were dropping, however, the Company expected that, if any outages were going to occur, such outages most likely would occur on the low-pressure distribution systems in Newport and Middletown.

The Portsmouth take station is the inlet point to the Aquidneck Island distribution system from the Algonquin G System. That take station is most likely to experience the lowest delivery pressures from Algonquin because it is the lowest point on the G System (i.e., the last delivery point on the transmission line). Because the Portsmouth take station is the lowest point on the G System, as the Company and other Algonquin customers take gas from the transmission system (including possible overtaking by other local distribution companies), and/or when gas supplies scheduled for delivery into the Algonquin system (either into the G System or upstream of the G System) fail to be delivered, the volume and pressure of the gas available to continue down the line to the Portsmouth take station dissipates. Additionally, Algonquin delivers gas to the Portsmouth take station via a single 6-inch transmission main, which is a less robust delivery main than is typical. Therefore, it is more difficult for Algonquin to maintain gas flow into the Portsmouth take station at higher inlet pressures when the G System is taxed.

Similarly, the low-pressure distribution systems in Newport and Middletown are the final points of delivery on the Company's Aquidneck Island distribution system. Accordingly, as the Company delivers gas to other points on its distribution system, the gas volumes and pressures available to be delivered to the low-pressure systems dissipate. Additionally, the low-pressure distribution systems carry gas at lower pressures under normal operating conditions, making reduced pressures on the low-pressure systems more likely to be impactful.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Fifteenth Set of Data Requests
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Any time inlet pressures into the distribution system from Algonquin are lower than the outlet pressures for which the Company's distribution system is designed, there is a risk of gas service outages if the necessary pressures cannot be maintained to deliver gas to all service points. This circumstance can arise anywhere on the Company's distribution system where the Company receives gas supply from Algonquin (or any other gas transmission company) at lower-than-contracted pressures. Not every circumstance in which Algonquin delivers gas at lower-than-contracted pressures, however, results in gas service outages. Depending on numerous factors – including, but not limited to, weather conditions, customer demand, and the degree to which delivery pressures fall below contracted minimums – the Company may be able to manage the distribution system to avoid service outages.

Thus, although the low-pressure distribution systems on Aquidneck Island were more likely than other points on the Company's distribution system to experience outages when low-pressure conditions occurred on the G System, the Company did not and does not understand those low-pressure distribution systems to be vulnerable to outages.

The Narragansett Electric Company
d/b/a National Grid
In Re: Summary Investigation Into the Aquidneck Island
Gas Service Interruption of January 21, 2019
Responses to the Division's Sixteenth Set of Data Requests
Issued on May 6, 2019

Confidential – Investigatory Record
Division 16-1

Request:

Please explain why the Company chose to shut down the entire low-pressure system, instead of (i) shutting off individual residences or places of business experiencing low pressure or an outage of gas and/or (ii) isolating and shutting off sections of the system as it experienced low pressure or outages?

Response:

Please see The Narragansett Electric Company d/b/a National Grid's (the Company) response to Division 1-1 for a description of why the Company shut down the entire low-pressure system. The Company did not (i) shut off individual residences or places of business experiencing low pressure or an outage of gas and/or (ii) isolate and shut off sections of the system as it experienced low pressure or outages because the outages were spread across the entire low-pressure system, requiring the full system be shut-down for safety reasons. There were no unaffected sections of the system that could be maintained based on the scope and breadth of the reported outages. In addition, for safety reasons, the Company does not shut off individual locations for a large-scale outage because it relies on customer reports to determine the outage area and cannot be certain that all outages have been reported.

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Division 17-1

Request:

How many employees/crews were available to (i) operate the various regulator stations for bypassing the stations' valves, (ii) answer low gas and outage calls, and (iii) address other matters that needed personal presence of personnel on Aquidneck Island? Please provide a general breakdown of the numbers of employees and/or contractors and what tasks each employee or set of employees were performing up until the time that service was curtailed around 7:00 pm on January 21.

Response:

- (i) The Instrumentation and Regulation (I&R) group was available to operate the various regulator stations and for bypassing stations if necessary. There were supervisors and 10 field technicians scheduled to work on January 21, 2019. By approximately 9:55 a.m., all I&R personnel had been dispatched to Aquidneck Island. Over the course of the day, the I&R personnel: (a) placed regulator stations on Aquidneck Island on bypass in an effort to mitigate dropping pressures, (b) removed regulator internals at the Portsmouth take station to increase outlet pressures, (c) shut down the regulator station serving the Middletown low-pressure system, (d) replaced the regulator internals at the Portsmouth take station to put the station back into normal service, (e) shut down the regulator stations on the low-pressure system in Newport, and (f) monitored pressures and system operations over the course of the day
- (ii) The Customer Meter Services (CMS) group was available to answer low gas and outage calls on January 21, 2019. A total of 93 CMS employees were scheduled to work on January 21, 2019 and were assigned to various shifts. Those employees included six supervisors and 87 field technicians. Upon receiving notification from Gas Emergency Dispatch at approximately 10:45 a.m., CMS management personnel began to reallocate field resources from scheduled assignments to Aquidneck Island to respond to numerous "no gas/poor pressure" orders. The CMS personnel investigated "no gas / poor pressure" orders and shut off and secured gas services at meter locations across the impacted area.
- (iii) The Gas Field Operations team was available to address other matters that needed personal presence of personnel on Aquidneck Island. For this team, five Construction and Maintenance crews consisting of three people each were dispatched to Aquidneck

The Narragansett Electric Company
d/b/a National Grid
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Island and were available in the event support was needed. Additionally, the I&R personnel and the CMS personnel also were available to address other matters when not actively working on the tasks identified above. Finally, the Narragansett Electric Company d/b/a National Grid began the process of activating mutual aid support from other utilities in parallel with its deployment of Rhode Island resources to assist with necessary response tasks, and that mutual aid began arriving on the evening of January 21, 2019.

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Division 17-5

Request:

Please identify and describe the system and explain how Gas Dispatch tracks “no gas” calls, the list of which was provided in Attachment Division 1-14, including without limitation (a) who receives the calls, (b) how they are recorded in the system, (c) how the information is shared or provided to decisionmakers assessing the conditions and planning actions in real time, (d) how the information is utilized by the emergency response team to address conditions occurring in real time, and (e) how long it takes for the outage information to reach those in command of the emergency response.

Response:

Customer Service fields “no gas” calls from customers and inputs the information into the Customer Service System (CSS). CSS generates orders in the iScheduler dispatch application, which Gas Dispatch uses to send a Customer Meter Services (CMS) crew to investigate the call, determine the cause, and assess what steps must be taken to resolve the issue. If the CMS crew determines that work on the gas mains or service lines is necessary, then it will communicate that information back to Gas Dispatch, and Gas Dispatch will send a Gas Field Operations crew to perform that work.

Once the “no gas” calls have been logged into CSS and orders have been generated in iScheduler, Gas Dispatch is able to query the entries in iScheduler and historical reports of “no gas” calls are available through CSS.

The Narragansett Electric Company d/b/a National Grid (the Company) treats all “no gas” calls as a high priority, but not every “no gas” call results in activation of the Company's Incident Command Structure (ICS). Gas Dispatch shares information about the addresses, total number, and any other known details about “no gas” calls via email, telephone call, and in-person conversations with Gas Control, CMS, and Gas Field Operations, as necessary and appropriate. If the “no gas” call is for an outage impacting multiple services, then Gas Dispatch shares this information with a wide distribution list to ensure that all necessary personnel are aware of the situation. For example, please see Attachment DIV 4-5-2 for copies of the email communications from Gas Dispatch on January 21, 2019 sharing information about the outages on Aquidneck Island. If the Company has determined that an emergency condition exists related to the “no gas” calls, Gas Dispatch will remain in regular communication with the Company's decisionmakers for the response to the emergency condition. If the emergency condition triggers the activation of an ICS, then these regular communications will be provided to the leadership of the ICS. The Company's decisionmakers use this information, in real time, to determine the

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scope and breadth of the situation, develop a strategy to resolve the issues, and to prioritize the steps to be taken as part of the response.

During an outage event, Gas Dispatch provides these communications at pre-determined intervals, which are established based on the particular facts and circumstances of the event. Additionally, Gas Dispatch communicates any critical information – such as a significant change in the number of customers impacted, an event that can be expected to impact the scope of the outage, or a change in condition that poses an imminent threat to life and property – immediately upon receiving it.

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d/b/a National Grid
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Division 17-7

Request:

Referring to the response to Division 1-1, page 4, did Gas Dispatch provide a "list of no gas calls" at any time prior to 4:30 pm? If not, why not? Did Gas Dispatch provide any information about "no gas calls" prior to 4:30 pm? Did the Company do any mapping of outages prior to receiving the "list of no gas calls" referenced in the response to Division 1-1? If not, why not?

Response:

Yes. In preparing this response, The Narragansett Electric Company d/b/a National Grid (the Company) identified that Gas Dispatch first provided a list of no gas calls to a member of the team focused on the response to the Aquidneck Island emergency at 4:05 p.m. The reference to 4:30 p.m. in the Company's response to Division 1-1 is the time that the leadership team managing the response to the situation on Aquidneck Island received the list and directed that the list should be mapped to determine the geographic scope of the outages relative to the low-pressure system.

Although Gas Dispatch did not provide a printed list of no gas calls earlier in the day, Gas Dispatch was in frequent communication with the Company's decision makers managing the response to the events of January 21, 2019. Therefore, although there was significant information shared regarding no gas calls throughout the day as Gas Dispatch assisted with the response to the events of the day as they unfolded, the creation of the physical list of no gas calls and then mapping that list did not occur until the pressures began to recover and the Company shifted its focus to determining where it would need to shut off service to ensure the safety of customers.

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Division 17-8

Request:

Please describe the level of awareness that the emergency response command had between 11:06 am and 4:30 pm of the number of outages and the location of the outages throughout Aquidneck Island. In providing this description, please explain the process by which those in command identified the locations and extent of the outage prior to the mapping occurring after 4:30 pm.

Response:

For purposes of this response, The Narragansett Electric Company d/b/a National Grid (the Company) defined the term “emergency response command” to refer to the team in charge of making decisions about how to address the low-pressure conditions on Aquidneck Island on January 21, 2019, led by the U.S. Chief Gas Engineer, and also including the Vice President, Asset Management; the Vice President, Field Operations, New England; the Director, Gas Control, U.S.; the Manager, Gas Control, New England; and the President, Rhode Island.

During the period from 11:06 a.m. to 4:30 p.m. on January 21, 2019, the emergency response command was in regular communication with Gas Dispatch. Additionally, the emergency response command was monitoring the SCADA system and observed the abnormally low pressures on the low-pressure systems on Aquidneck Island. The emergency response command also was aware that the Company was receiving reports of poor pressure or no gas, which the emergency response command determined were consistent with the pressures it had observed on the SCADA system. The emergency response command received regular updates from Gas Dispatch regarding the number of reported outages. Gas Dispatch also had the addresses of each reported outage, and Customer Meter Services (CMS), following normal protocol, responded to those addresses. As the number of outages grew, CMS assigned additional crews to the area and to outlying streets to assess the extent of the outage. CMS also provided regular updates on the geographic extent of the outage to the emergency response command. Accordingly, the emergency response command had knowledge of the number of confirmed outages and also had a general understanding of the extent and location of the outages throughout Aquidneck Island.

During this time, however, the emergency response command focused its efforts on maintaining and restoring pressures to Aquidneck Island to minimize the need for load shed. Once the emergency response command observed that pressures were recovering, it shifted its focus to identifying the areas where the system would have to be shut down for safety reasons. To accomplish this task, the emergency response command requested the map of the outages, which confirmed that the outages were widespread across the Newport low-pressure system and would require that the entire system be shut down. If the emergency response command had completed

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the mapping earlier in the day, it would not have had a material impact on the shut down process because the pace of the pressure drop did not allow for sufficient time to isolate an area of the integrated low-pressure system to prevent the additional outages on the other parts of the system. Additionally, based on the information received from Gas Dispatch and CMS over the course of the day, the emergency response command had a general sense that the outage was widespread throughout the integrated low-pressure system. The mapping confirmed those suspicions and confirmed that the Company would have to shut down the entire Newport low-pressure system for safety reasons.

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Division 17-12

Request:

Referring to the response to Division 17-1(ii):

- (a) How many CMS employees were on Aquidneck Island when the first “no gas/low pressure” calls were received around 11:06 am?
- (b) By what time did the Company have a full complement of CMS employees available on Aquidneck Island and what was that total?
- (c) Does the Company have a means of tracking the location of CMS employees, such as the “DriveCam” system? If so, please describe.
- (d) If the answer to (c) was yes, please provide the clock times when each of the available CMS employees arrived on Aquidneck Island and became available to assist in the effort and the hours of the remainder of the day on January 21. To the extent possible, please also provide the location of the field technicians for each of the clock times, in a manner similar to what was provided for field technicians in response to Division 17-9(g).

Response:

The responses to parts (a) and (b) follow the response to part (c).

- (c) The Narragansett Electric Company d/b/a National Grid (the Company) uses an Automated Vehicle Location System (AVLS) from Track Star International, Inc. on the Company vehicles used by its Customer Meter Services (CMS) employees. To prepare its response to this data request, the Company: (1) ran an AVLS trip report to gather location information for each Company CMS vehicle during the day of January 21, 2019; and (2) consulted the notes and recollection of the CMS supervisor who coordinated the deployment of CMS technicians on January 21, 2019. The AVLS does not capture the location information for every CMS vehicle for at least two reasons. First, not every CMS vehicle is equipped with AVLS. Second, the AVLS relies on information transmitted through a modem, and if the modem on a particular vehicle is not functioning, the AVLS will not have any data to report on that vehicle.

In addition to the Company's CMS technicians, the Company received assistance from other qualified resources employed by other National Grid affiliates, third-party contractors, and other regional utilities through the Company's mutual aid arrangements. These resources began to arrive on January 21, 2019. The Company does not have AVLS data for these other resources, but by January 22, 2019, there were hundreds of

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additional personnel assisting with the response to the outage from these additional resources. The specific data provided as part of this response relates only to Company-employed CMS technicians.

- (a) As of 11:06 a.m. on January 21, 2019, the Company had four (4) CMS vehicles on Aquidneck Island, each with at least one CMS technician.
- (b) For purposes of this response, the Company understands this part of the request to be asking at what time the Company had the greatest number of CMS technicians on Aquidneck Island. According to the AVLS data, combined with the notes and recollection of the CMS supervisor, the Company had a total of 60 CMS vehicles that spent at least a portion of the day on Aquidneck Island. This includes six (6) CMS vehicles for which the Company does not have AVLS data, but for which the CMS supervisor's notes indicate the vehicle was on Aquidneck Island during the day. Each vehicle transported either one or two CMS technicians. The greatest number of Company CMS vehicles on Aquidneck Island at any one time on January 21, 2019 was 55. That number of Company CMS vehicles was on Aquidneck Island between 8:32 p.m. and 9:00 p.m. and between 9:12 p.m. and 9:55 p.m. The Company continued to increase the number of CMS vehicles and technicians it had on Aquidneck Island once the Company began to receive no gas calls.

The number of Company CMS vehicles and technicians on Aquidneck Island steadily increased throughout the day, as the Company redirected employees to Aquidneck Island from other assignments, and as the Company called on employees otherwise scheduled not to work to come and assist with the response on Aquidneck Island. As reflected in the Company's response to Division 17-1, the Company had six CMS supervisors and 87 CMS field technicians available over the course of the day, and as the data reflects, these personnel arrived and worked on Aquidneck Island at various times over the course of the day.

Please see Attachment DIV 17-12-1 for a graph of the number of the Company's CMS vehicles on Aquidneck Island throughout calendar day January 21, 2019.

According to the AVLS data, 24 CMS vehicles remained active on Aquidneck Island through the night of January 21, 2019, and into the morning of January 22, 2019. Additionally, the CMS supervisor's notes indicate that an additional six (6) CMS vehicles

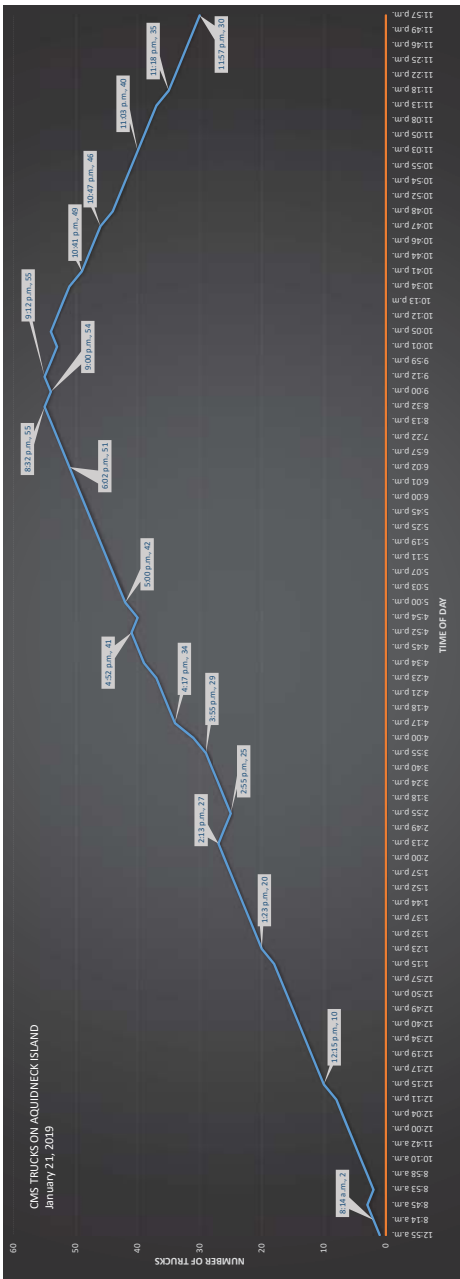
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for which the Company does not have AVLS data were on Aquidneck Island on January 21, 2019. Those notes do not indicate the time when those vehicles left Aquidneck Island.

The Company could not deploy all CMS technicians to Aquidneck Island on January 21, 2019. To ensure proper response in areas outside Aquidneck Island, the Company maintained some technicians in other portions of Rhode Island to respond to emergency calls such as odor complaints or “no-gas” calls. According to the AVLS data, the Company had 12 CMS vehicles that were active during parts of January 21, 2019, to attend to work elsewhere in Rhode Island other than on Aquidneck Island.

- (d) Please see Attachment DIV 17-12-2 for a copy of the Trip Report for each of the Company's CMS vehicles that transmitted AVLS data on January 21, which includes locations and clock times for each vehicle.



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d/b/a National Grid
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Division 18-1

Request:

Please provide an explanation why the Company did not sectionalize the low-pressure system in Newport, instead of curtailing the entire area.

Response:

Please see The Narragansett Electric Company d/b/a National Grid's (the Company) response to Division 16-1 for an explanation of why the Company did not sectionalize the low-pressure system in Newport, instead of curtailing the entire area.

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Division 18-2

Request:

To what extent is the low-pressure system in Newport capable of being sectionalized during emergency conditions, other than shutting off the entire low-pressure system at the regulator stations? Please describe.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) can sectionalize the low-pressure system in Newport during emergency conditions if there is a confined area experiencing the emergency conditions that necessitate a shut off. The Company is capable of isolating sections of the system by identifying existing valves (where mapped, accessible, and operational), and/or making physical openings in the distribution system to install stop off devices. By doing this, the Company can preserve pressure in core parts of the low-pressure system and limit the outage area. The Company's ability to sectionalize is dependent on the location and accessibility of the valves and stop off points, as well as the nature of the outage (e.g., whether the outage is localized to a confined area or widespread). During routine operations when damage occurs on the low-pressure system, the Company sectionalized the system in this manner to limit the shutdown area to the smallest extent feasible and lessen the impact to customers. Also, please see Attachment DIV 8-6-4 (Response to Unplanned Outage and Restoration of Service Guideline [GEN02003]) for additional information responsive to this request.

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Division 18-3

Request:

If the Company had identified a confined area of the low-pressure system where most of the gas service was lost, did the Company have in place a process and method for isolating the area, as opposed to shutting off the entire low-pressure system? If so, please explain. If not, please explain why not.

Response:

Yes, The Narragansett Electric Company d/b/a National Grid (the Company) has a process and method for isolating a segment of the low-pressure system for shut-off – rather than shutting off the entire low-pressure system. Please see the Company's response to Division 18-2 for a description of the means by which the Company would sectionalize the system. If the Company had identified a confined area of the low-pressure system where most of the gas service was lost, then the Company's process to isolate that area of the low-pressure system would have been to identify any accessible stop-off valves and to create any physical openings necessary to section off that area of the low-pressure system by closing the valves and installing stop-off devices. Also, please see Attachment DIV 8-6-4 (Response to Unplanned Outage and Restoration of Service Guideline [GEN02003]) for additional information responsive to this request.

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Division 18-4

Request:

Please identify the number and location of all emergency shutoff valves installed along the mains of the low-pressure systems on Aquidneck Island (where service was curtailed on January 21, 2019) where the flow of gas could have been shut off on January 21, 2019, including without limitation any maps that identify these locations. If the Company does not have this information, please explain why not.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) has identified 449 emergency shutoff valves on the Newport low-pressure system and 46 emergency shutoff valves on the Middletown low-pressure system for a total of 495 emergency shutoff valves on the low-pressure systems on the areas of Aquidneck Island where service was curtailed on January 21, 2019. Please see Attachment DIV 18-4-1 and Attachment DIV 18-4-2 for maps that identify the locations of the Newport shut-off valves, and Attachment DIV 18-4-3 for maps that identify the locations of the Middletown shut-off valves. The symbol for main shut-off valves are green and are designated with an arrow on each map. Please see Attachment DIV 18-4-4 for a legend identifying the symbols on the other three attachments.

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Division 18-8

Request:

As “no gas” calls were received by the Company on January 21, 2019, was personnel dispatched to those customer accounts to shut off service? If so, please describe how many customer locations were individually shutoff between 11:00 am and 6:30 pm and where it occurred. If not, please explain why not.

Response:

Yes, The Narragansett Electric Company (the Company) dispatched personnel to addresses for which it had received a customer report of no gas or poor pressure. The Company received 735 no gas calls from customers on Aquidneck Island between 11:00 a.m. and 6:30 p.m. on January 21, 2019. As it became clear that the outage area was expanding on Aquidneck Island, the Company decentralized dispatch of service technicians and established a local dispatch operation in the area. From the local dispatch operation, technicians continued to be assigned to respond to customer reports of no gas or poor pressure. The technicians completed their investigations using manual outage cards. The technicians shut off service to all locations found to have no gas or poor pressure. The Company cannot provide a specific count of how many locations were shut off between 11:00 a.m. and 6:30 p.m. because the manual outage cards are not stored in a searchable format that can be easily aggregated.

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Division 18-9

Request:

On April 26, the Division held a technical session with the Company in connection with the Aquidneck Island Investigation. During the session, the Division asked Mr. John Stavrakas questions about the Company's ability to sectionalize the low-pressure system in Newport. In responding to this question, Mr. Stavrakas stated that the low-pressure system does not have shut-off valves that would allow such sectionalizing to be done through shutoff valves. When probed about the lack of valves, Mr. Stavrakas stated that it is not unusual for a low-pressure system to not have valves that would allow such sectionalizing.

In Division Set 18A, the Division asked more specific questions about sectionalizing the low-pressure system. In the response to Division 18-2, the Division asked a question regarding the extent to which the low-pressure system was capable of being sectionalized. In Division 18-4, the question asked the company to identify the number and location of emergency shutoff valves on the low-pressure system on Aquidneck Island.

The response to Division 18-2 affirmatively states that the system is capable of being sectionalized. The response to Division 18-4 identifies 495 shutoff valves.

Please explain why Mr. Stavrakas stated at the meeting of April 26 that there were no valves that would allow sectionalizing, given the written responses to Division 18-2 and 18-4.

Response:

During the technical session on April 26, 2019, Mr. Stavrakas indicated that the low-pressure system does not have shut-off valves that would allow the low pressure system to be sectionalized. The Narragansett Electric Company d/b/a National Grid (the Company) does not install valves on low-pressure systems, and the Company does not establish sectionalizing districts complete with identified and maintained valves for that purpose.

The Company's response to Division 18-2 indicated that it could sectionalize areas of the low-pressure system, if necessary, by accessing valves, if they exist and are available, in combination with excavating the gas main to squeeze off or stop off the flow of gas. According to Mr. Stavrakas, this process is consistent with the discussion during the technical session on April 26, 2019.

Furthermore, according to Mr. Stavrakas, the discussion at the April 26, 2019 technical session also explained in detail (consistent with the Company's responses to Division 1-1, Division 16-1,

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Division 18-9, page 2

and Division 18-1) that the entire low-pressure system in Newport had been impacted by the lack of pressure and needed to be shut down in its entirety, obviating the need to attempt to sectionalize the system, even while the Company worked to limit the extent of the shut down.

Although the Company does not install valves on low-pressure systems, it is not unusual that, over the many decades of operation, some valves have been installed on the low-pressure systems as reflected in the Company's response to Division 18-4. Although there are valves on the low-pressure systems in Newport and Middletown, those valves are not associated with specific sectionalizing districts.

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Division 18-10

Request:

When technicians were deployed to Aquidneck Island, did the staff have maps or other access to data that identified the location of the shutoff valves referenced in the response to Division 18-4. If so, please explain. If not, please explain why not.

Response:

No, the technicians deployed to Aquidneck Island on January 21, 2019, did not have maps that identified the location of the shutoff valves referenced in the response to Division 18-4. The CMS field technicians did not need maps because Gas Dispatch directed them to the locations where they were needed to respond to the No Gas Calls the Company was receiving. Additionally, for the reasons set forth in The Narragansett Electric Company d/b/a National Grid's responses to Division 1-1 and Division 16-1, the I&R field technicians were later directed to curtail the entire low-pressure system – not to sectionalize portions of it. The I&R field technicians have access to flow diagrams of the stations they needed to identify the valves needed to isolate the entire low-pressure system on Aquidneck island. As a result, access to maps or data identifying the location of shutoff valves that might be used for sectionalizing was unnecessary for both groups to perform their work.

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Division 18-11

Request:

Does the Company have any annual or periodic maintenance plans in place to assure that the 495 valves identified in Division 18-4 are operational under emergency conditions? If so, please describe. If not, please explain why not.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) does not have a specific annual or periodic maintenance plan in place to assure that the 495 valves identified in the response to Division 18-4 are operational under emergency conditions. As described in the Company's response to Division 18-9, these 495 valves are not associated with specific sectionalizing districts that would require annual maintenance to ensure they are operational. Therefore, the Company does not rely on the operability of the valves to respond to emergency conditions.

If the Company discovers that a valve is not operational or is otherwise faulty during the course of its operations (such as through the survey of the gas mains or when performing work on a section of the distribution system), then the Company will repair or replace the valve if a repair or replacement is cost-effective for customers.

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Division 18-12

Request:

The response to Division 18-8 states in the last sentence: “The Company cannot provide a specific count of how many locations were shut off between 11:00 am and 6:30 pm because the manual outage cards are not stored in a searchable format that can be easily aggregated.”

- (a) Does the Company have possession of all of the referenced manual outage cards? If not, please explain why not. If, yes please describe how they are stored.
- (b) If the answer to (a) was yes, please provide the total number of manual outage cards that were filled out on January 21, 2019.
- (c) Please provide a sample copy of one of the manual outage cards that was filled out on January 21, 2019.

Response:

- (a) Yes. The Narragansett Electric Company d/b/a National Grid (the Company) has possession of all the referenced manual outage cards. The cards are organized by geographic zone, stored in boxes, stacked on pallets, and shrink wrapped. The pallets are stored at the Company's office at 280 Melrose Street in Providence.
- (b) Because the manual outage cards are organized and stored geographically by outage zone, not by date, the Company cannot readily determine how many cards were filled out on January 21, 2019.
- (c) Please see Attachment DIV 18-12.

Gas Outage Management Report

nationalgrid

Date: 1-21-19

Address:

Apt. Number:

Number of Meters in Bldg: 1

Meter Number:

387361-1134

Location:

OYTSIDE Rtgtr

Zone:

LOW PRESSURE SYSTEM

~~METER OFF~~

METER ON

Meter Found:

☒ On☐ Off

Meter Turned On:

☒ Yes☐ No

Meter Shut Off at:

☐ Curb Valve☒ Meter

Reason Left Off:

☐ CGI☐ Water in House Lines☐ Safety Violation☐ Fitter Required

Technician's Name:

Technician's Name:

Technician's Phone Number:

Technician's Phone Number:

Additional Info:

☐ On Back

Technician's Phone Number:

☒ Residential☐ Commercial

Customer's Phone Number:

☐ Medical☐ Handicap

Do not wake customer between:

to

☐ Hospital/Nursing Home☐ Locksmith Needed

Special instructions per customer:

Additional comments on back

Date:

Time:

Responder:

ID Number:

Comments:

Date:

Time:

Responder:

ID Number:

Comments:

Other Comments (place customer contact info or instruction):

CM5127 (2/12)

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Division 19-1

Request:

Referring to the response to Division 18-8, to what extent will the Company's "Gas Business Enablement" initiative change (i) the way technicians are dispatched to locations, (ii) report the actions taken by the technicians at customer locations, (iii) allow for the aggregation of data for post-event reports, and/or (iii) allow the Company to receive information about actions being taken by technicians on the day of and during emergency conditions such as what occurred on January 21, 2019?

Response:

The implementation of National Grid's Gas Business Enablement (GBE) program, which is occurring in multiple phases, will modernize how The Narragansett Electric Company d/b/a National Grid (the Company) dispatches technicians and responds to emergency conditions. It will improve existing processes and information flow among field employees, dispatchers, and supervisors.

- (i) Currently, the Company follows a paper process for work assignment using manual outage cards for large scale gas outages. A list of meters would be generated for those customers impacted by an outage based on the information in the Company's Geographic Information System (GIS) mapping system, and the dispatch of this work would be decentralized to a local onsite supervisor team.

With the most recent release of Program Anchor 2.3 on July 22, 2019, GBE has implemented Salesforce Field Service Lightning (FSL), which delivers scheduling and dispatching functionality that provides the ability to schedule and dispatch work, perform work bundling, view and update resource assignments, view work and field technician locations on a map, track work progress in real time, and view resource skills and classification. The FSL software application deployed to all field employees and supervisors on Apple iPads will be connected remotely to National Grid information technology systems through standard wireless service providers (e.g., Verizon or AT&T). Field employees will receive electronic notifications of assigned work, retrieve job information, and complete all work in FSL utilizing the mobile device.

Employees also will have the capability to generate new or follow-up work orders directly in the field from the device. Data will be captured electronically through the FSL mobile application and asset data will be stored with the asset record through the integration with the work and asset management system (IBM Maximo). The FSL

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application will have validation rules for data capture to improve data quality and requirements to enter field information to complete a work order. The data capture capability in FSL also will utilize the functionality of the mobile device to take pictures and scan barcodes to improve data quality and improve customer satisfaction. The software application also will have the capability to provide turn-by-turn directions to the job location with live traffic information, which will allow for route optimization to minimize travel between job locations and improve emergency response time.

- (ii) The implementation of FSL provides the capability to view the status of work in real time. This enables improved scheduling through better monitoring and management of planned work and same day activities to improve productivity, increase the percentage of the work completed on the first visit, and respond to emergencies.

A new Graphical Information System (ESRI GIS) application is deployed and integrated with FSL, allowing access to asset information, including service, meter and premise information in the GIS application on the mobile devices through the FSL application. Supervisors and dispatchers will have dashboards to manage employees with the capability to view available resources and their associated skills and qualifications to better schedule and dispatch work orders. Additionally, FSL will provide visibility to the work order lifecycle with alerts to highlight upcoming jobs and associated due dates. Supervisors and dispatchers also will have the capability to view the locations of field employees on a map with real-time status of the job.

- (iii) A key feature of the FSL application will be the capability to allow visibility to job information and complete data capture in locations where a wireless signal is not present. The FSL application will store the data locally on the device and synchronize with National Grid information technology systems once a wireless signal becomes available. GBE systems will enable on-demand reporting for post-event reports, which will have the capability to provide timestamps of when the technicians are onsite at customer locations. The Company expects these enhancements to the GBE system to be implemented in November 2019.

The Narragansett Electric Company
d/b/a National Grid
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Gas Service Interruption of January 21, 2019
Responses to the Division's Nineteenth Set of Data Requests
Issued on July 15, 2019

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Division 19-2

Request:

Does the Gas Business Enablement initiative include any system modifications which will allow an incident command team to know the location of “no gas/low pressure” calls on a real time or more timely basis while responding to emergency conditions, as opposed to waiting for the information to be provided by Gas Dispatch as occurred on January 21? If so, please describe.

Response:

Gas Business Enablement improvements will allow an incident command team to know the location and status of “no gas/low pressure” calls near real-time through the use of an integrated solution to manage assets (IBM Maximo), work management (Salesforce Field Service Lightning), and geographic information system (ESRI ArcGIS PRO) when responding to an event rather than wait for data to be collected manually and provided by Dispatch in an Excel spreadsheet as in January 2019.

The ability to get real-time customer account status (i.e., On/Off/Relight) will be available with our upcoming November release (PA 3.2) via the Salesforce Customer Relationship Management (CRM) application (this is the application used by the Call Center Representatives). A Call Center Representative will be able to see all addresses affected by an outage and the status of each order (i.e., Turn-On, Turn-Off, Relight). Reports/queries will be available to users to provide status updates.

Additionally, with the release coming in November 2019, the Salesforce Dispatch Console (this is the application used by the Scheduling & Dispatch group) will allow a dispatcher to be able to see real-time the location of all Customer Meter Services technicians on a map in the Salesforce Dispatch Console and order status (i.e., On-Route, On-site, In-Progress, Complete). The Dispatch console will not have the capability to show all orders and status associated with the outage. Reports/queries on job status will be available to users to provide status updates.

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Division 19-3

Request:

In addition to any improvements identified in response to Division 19-1 and 19-2, to what extent will the Gas Business Enablement initiative improve the way the Company will be able to respond to emergency conditions similar to what occurred on January 21?

Response:

As described more fully in The Narragansett Electric Company d/b/a National Grid's (the Company) responses to Division 19-1 and Division 19-2, because work orders will be dispatched by a centralized group that has visibility to all the impacted addresses, Gas Business Enablement (GBE) improvements will enable more efficient dispatch work and provide centralized visibility to what work is ongoing and still needs to be completed. GBE provides better and more timely visibility in both normal operating conditions and emergency conditions than the existing manual process with paper cards and records to be summarized in an Excel spreadsheet.

In circumstances that involve Company affiliates providing mutual aid, affiliate personnel will not have access to Salesforce Field Service Lightning by November 2019. As a result, those personnel will continue to be dispatched using existing processes, including the use of paper cards and records. The Company is investigating interim solutions to improve information flow in mutual aid circumstances until GBE implementation is complete for Company affiliates and their field employees.

The Narragansett Electric Company
d/b/a National Grid
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Division 21-1

Request:

Please provide the Gas Emergency Response Plan of The Narragansett Electric Company, d/b/a National Grid (Company).

Response:

Please see Attachment DIV 21-1 for a copy of the National Grid Rhode Island Gas Emergency Response Plan dated May 2019.



National Grid Rhode Island Gas Emergency Response Plan

May 2019



The Narragansett Electric Company
d/b/a National Grid
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Division 21-2

Request:

Please provide all Company After Action Review Reports or similar reports that assessed company performance regarding the Aquidneck Island gas incident that occurred on January 21, 2019.

Response:

Please see Attachment DIV 21-2 for a copy of the After Action Report/Improvement Plan for the Newport/Middletown, RI Gas Emergency Event, dated April 26, 2019. This is the only written assessment of The Narragansett Electric Company d/b/a National Grid's performance regarding the Aquidneck Island gas incident that occurred on January 21, 2019.



Emergency Planning After Action Review Program

Newport/Middletown, RI Gas Emergency Event

After-Action Report/Improvement Plan
April 26, 2019

The Narragansett Electric Company
d/b/a National Grid
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Gas Service Interruption of January 21, 2019
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Division 21-4

Request:

Please identify other utilities of which the Company is aware that use manual outage cards systems (or similar manual systems) to that used by the Company on January 21, 2019 for the Aquidneck Island gas incident.

Response:

The Narragansett Electric Company d/b/a National Grid (the Company) has understood that most gas utilities use manual outage card systems or similar manual systems when responding to gas emergencies. To confirm this understanding, the Company inquired with the American Gas Association (AGA) and the Northeast Gas Association (NGA). NGA confirmed that almost all gas utilities use manual systems to handle outages and informed the Company that, in the Northeast United States, currently only Unitil has a semi-automated system. Like the Company, other gas utilities are working to convert to a computerized outage management system. For example, Eversource and Vermont Gas have reported that they expect to transition to a computerized outage management system.

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Division 21-5

Request:

During the interview on July 18, Steve Caliri indicated that the Company had performed modeling to determine the lowest psi level that could have been experienced on January 21 without the Company experiencing the gas outages. He indicated that the level was 85 psi. Please indicate whether the 85 psi level was inlet or outlet at the take station. Please also provide a description and explanation of how the modeling was performed to determine this psi point.

Response:

The Narragansett Electric Company d/b/a National Grid's (the Company) analysis did not provide certainty that the Company would not have experienced gas service interruptions if the inlet pressure had dropped to 85 psig at the Portsmouth take station. To conduct this analysis, the Company used its Synergi modeling software to adjust inputs regarding conditions on its Aquidneck Island distribution system. First, it set Aquidneck Island demand at the volume recorded for the peak hour on January 21 (7:00 AM – 8:00 AM) of 972 DTH. Then, the Company adjusted the input for inlet pressure at the Portsmouth take station and observed the modeled impact on downstream distribution system main pressures. The Company adjusted the inlet pressure downward until it reached a point at which downstream distribution system main pressures would likely have been expected to maintain uninterrupted gas service to customers. The 85 psig inlet pressure at the Portsmouth take station yielded operating pressures of 4.8"wc on the extremities of low-pressure system in Newport. The minimum operating pressure on that system is 4.5"wc. Although, based on its knowledge and experience, the Company expects that it could have maintained gas service to customers without interruption at this pressure level, the Company is not certain that there would have been no service interruptions if the inlet pressure to the Portsmouth take station had fallen to, and remained at, 85 psig. For example, the Synergi model may not exactly reflect observed system main pressures because of variables such as unforeseen distribution system conditions (e.g., debris/water in the mains and services, closed valves), individual customer usage (e.g., model predicted versus actual), and regulator station performance (e.g., model predicted versus actual).

The Narragansett Electric Company
d/b/a National Grid
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Responses to the Division's Twenty-Second Set of Data Requests
Issued on September 16, 2019

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Division 22-1

Request:

Please provide an estimate of the total incremental costs that were incurred by the Company related to the outage of January 21 and the restoration process to completion. To the extent the Company has accounted for the costs, please provide. However, if substantially all the costs have not been finalized to a reasonable degree of certainty, the Division requests whatever “order-of-magnitude” estimate that can reasonably be provided within 14 days of the issuance of this question, with any caveats the Company believes appropriate to provide.

Response:

The Narragansett Electric Company d/b/a National Grid's (the Company) most current estimate of the total incremental costs it incurred related to the gas service interruption on Aquidneck Island on January 21, 2019, and the ensuing restoration process is \$25.1 million. The Company has not yet completed its final accounting for the event. This amount is an estimate only and is subject to change. The Company has prepared this estimate as a snapshot in time based on the current status of its accounting for the event.

The Company determined its current estimate of total incremental costs based on its estimate of total costs related to the gas service interruption and restoration, less the Company's current estimate of the base labor costs for union and management employees. The table on the following page reflects this calculation and its components.

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**THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID
Estimated Incremental Costs to Date Related to January 21, 2019 Gas Service
Interruption and Restoration**

1. Internal company labor, including overtime		\$ 8.5m
2. Contractors		
a. Mutual Aid & Contractors	\$2.7m	
b. Mutual Aid Accrual ¹	\$2.0m	
c. Other work support (locksmiths, plumbers)	\$3.0m	
d. Outside Claims Administration	\$0.7m	
e. Police & RIEMA	<u>\$0.9m</u>	\$ 9.3m
3. Meals, Lodging, and Logistics ²		\$ 3.8m
4. Customer Claims		\$ 2.0m
5. Claims Reserve ³		\$ 3.0m
6. Business Restoration/Charitable Donations		\$ 0.5m
7. LNG Portables from Colonial		\$ 0.1m
8. Outside Legal Costs ⁴		\$ 0.6m
	Total Costs	<u>\$27.8m</u>
	Base Labor	(\$2.7m)
	Total Incremental Costs	\$25.1m

¹ The Company is still accruing \$2 million for outstanding Mutual Aid invoices as of August 31, 2019.

² Logistics consists of materials, transportation, and other coordination-related activities.

³ The Company is still maintaining a \$3 million reserve for payment of outstanding customer claims.

⁴ This is a current estimate of outside legal costs related to the outage.

Division Data Request 1-3 (continued)

- b. The Algonquin East to West project provides capacity to economically meet future load growth in an area where pipeline capacity has consistently been constrained and expensive to expand.
- i Under normal weather conditions its impact on reliability is to improve the Company's ability to serve the area in the event of an outage or emergency. (Note that the Algonquin gate station in Westerly was flooded this past spring and the entire Westerly load was served through the Montville Yankee path. Under cold winter conditions the additional capacity would have been needed to provide service without curtailments.) The additional capacity will also improve service to and add revenue from non-firm customers.
- ii Under design winter conditions, the new capacity can provide up to 1,500 DT/day of supply to the Westerly area with the balance available to serve the system as a whole.
- iii The current forecasted design peak day is 5,928 DT. This would be expected to result in a peak hour of 296.4 DT/hour. The existing, pre-expansion, pipeline capacity is 6,295 DT/day and 290 DT on peak hour. Thus, peak day pipeline capability is adequate while peak hour can only be met by either retaining the LNG facility or by utilizing the new capacity.
- iv The capacity would be available every day at 100% of the 1,500 DT/day of delivery capability to meet cold snap conditions in Westerly or on the system as a whole.

Excerpt

- c. The Algonquin East to West project provides capacity to Aquidneck Island to economically meet future load growth in an area where pipeline capacity has consistently been constrained and very expensive to expand.
- i Under normal weather conditions it would eliminate the use of LNG at Newport for the next several years.
- ii Under design winter conditions it would eliminate the use of LNG at Newport for the next few years.
- iii The current forecasted design peak day would require almost 3,100 DT more than existing pipeline capacity of 16,089 DT/day. A design peak day would also be expected to result in a peak hour of 984 DT/hour, 189 DT more than the 795 DT of contract capacity. Thus, current peak day and peak hour pipeline capacities can only be met for the current load by vaporizing 4 truckloads of LNG. With the new capacity in place, the full peak hourly load can be met with pipeline capacity, but only for a few years assuming typical peak hour growth. The Aquidneck Island area had the most rapid growth rate on the RI system during the last housing construction boom period.

Division Data Request 1-3 (continued)

- iv The capacity would be available every day at 100% of the 6,000 DT/day of delivery capability to meet cold snap conditions on Aquidneck Island or on the system as a whole. It would eliminate all LNG at the Newport LNG facility.
- d. The Company does not model deliveries to each gate station. Instead, it models four load centers: Providence, Bristol-Warren, Valley and Westerly. Below, the Company provides the requested normal annual and design day data for all customers using utility capacity for the three load centers that represent the affected systems: Montville (Westerly), Portsmouth and Tiverton (Providence), and Warren (Bristol-Warren).

Natural Gas Requirements for All Customers Using Utility Capacity (MMBtu)
From 2010Q3 Forecast
Normal Year

	2010/11	2011/12	2012/13
Westerly	588,980	585,820	581,419
Providence	25,473,367	25,336,720	25,146,351
Warren	674,809	671,190	666,147

Natural Gas Requirements for All Customers Using Utility Capacity (MMBtu)
From 2010Q3 Forecast
Design Day

	2010/11	2011/12	2012/13
Westerly	5,928	5,947	5,921
Providence	256,386	257,187	256,099
Warren	6,792	6,813	6,784

Prepared by or under supervision of: Elizabeth D. Arangio

Chronological Explanation of the Events of January 21, 2019

On January 21, 2019, Algonquin Gas Transmission (“Algonquin”) experienced a low-pressure situation on its G-System, which delivers natural gas to local gas utilities in areas including Providence, Bristol, and Newport Counties in Rhode Island. Algonquin operates an interstate pipeline system that provides a service by transporting and delivering natural gas owned by others. The amount of gas delivered to Algonquin’s customers is based on contracts with those customers. Algonquin’s customers, including local gas utilities, participate in a daily process to request, or nominate, in advance the amount of natural gas that they expect will be needed to serve their customers. Algonquin then facilitates the transportation of those natural gas supplies to support the customers’ requests for the subsequent gas delivery day. Depending on which contracts the customers have nominated service from, a maximum hourly flow rate entitlement can be established for each customer for that gas delivery day. Some customers may also have the contractual right to adjust the rates at which natural gas is taken throughout the gas day to reflect changes in demand on their systems. However, even during those hours of increased takes, every customer is subject to a contractual maximum hourly flow rate limit for that gas delivery day.

Hourly takes on the Algonquin System were higher on January 21, 2019 than any day in the previous 10-year period. The peak hourly rate on January 21, 2019 was approximately 3.3 billion cubic feet per day, compared to the previous high rate in January, 2015 of approximately 2.9 billion cubic feet per day. These record high takes occurred between the hours of 4 am and 10 am Central (5 am and 11 am Eastern), with the highest takes occurring between 5 am and 8 am Central (6 am and 9 am Eastern).

On the G-System, total actual hourly takes on January 21, 2019 significantly exceeded customer nominations beginning at 3:30 am Central (4:30 am Eastern), and continuing until 9:30 am Central (10:30 am Eastern).

For Algonquin’s ten delivery points on the G-System in Rhode Island specifically, total actual hourly takes on the morning of January 21, 2019, significantly exceeded maximum hourly limits based on the scheduled quantities requested by the customers and the associated hourly entitlements of those scheduled quantities. For the six hours beginning at approximately 4:00 am Central (5:00 am Eastern), actual hourly takes at those ten delivery points on the G-System in Rhode Island averaged more than 33% above maximum hourly limits based on the scheduled quantities requested by the customers and the associated hourly entitlements of those scheduled quantities. Those actual hourly takes reached as high as approximately 54% above the maximum hourly limits for the hour beginning at 6:00 am Central (7:00 am Eastern). Actual hourly takes at Providence area meters significantly exceeded nominations beginning at approximately 3:45 am Central (4:45 am Eastern), and continuing until 10:30 am Central (11:30 am Eastern).

National Grid owns an existing LNG facility in the Providence area, which is physically connected to its distribution system. National Grid’s LNG facility is used at times to supplement its supply of natural gas from the Algonquin system. Algonquin was informed by National Grid personnel that National Grid’s LNG facility had experienced problems during the hours of the significantly increased takes of natural gas in the Providence area on the morning of January 21.

The sustained and dramatic increase in customers' hourly takes of natural gas from the Algonquin G-System, both overall and in Rhode Island specifically, over an extended period of time caused a significant decrease in gas available to the G-System. Algonquin believes National Grid's inability to use their LNG supplies in the Providence area during this time also caused National Grid to take increased volumes of natural gas from Algonquin in the Providence area. The material increase in takes from the G-system coincides with the time frame in which National Grid would have experienced their LNG facility problem.

Following this significant increase in demand, Algonquin's Houston Gas Control located in Houston, TX (HGC) adjusted the volume of gas flowing from Maritimes & Northeast Pipeline and Northeast Gateway LNG ships through the Weymouth mainline regulator station into the Algonquin system. Approximately three hours after the significant increase in the hourly rate of gas taken in Rhode Island, Algonquin experienced an equipment malfunction at Weymouth, which temporarily restricted available natural gas supplies flowing through Weymouth to the east end of the Algonquin System. Specifically, when HGC initiated a flow setpoint increase at Weymouth at 6:20 am Central (7:20 am Eastern) and a secondary meter run (Meter Run # 2) began to open, issues at Weymouth prevented the full flow increase into the Algonquin system. After receiving notification from HGC at 6:41 am Central (7:41 am Eastern), a local Measurement Technician initially worked with HGC to attempt to resolve the situation remotely. When that was not successful, he left for Weymouth, arriving on site at 8:10 am Central (9:10 am Eastern). After an initial assessment, he started manual control of the control valve at 8:20 am Central (9:20am Eastern) and reestablished stable flow as directed by HGC by 9:29 am Central (10:29 am Eastern). An issue with the Remote Terminal Unit Program for Meter Run # 2 was corrected at 10:18 am Central (11:18 am Eastern), and the station was placed back in normal HGC Auto Control at 10:55 am Central (11:55 am Eastern).

The above is a preliminary analysis of the facts and circumstances related to the events of January 21, 2019. Algonquin's investigation is ongoing, and Algonquin reserves its right to modify or supplement with additional information pertinent to these issues as more information becomes available.



Mr. Terry Sobolewski
National Grid, USA

24 January, 2019

The Division of Public Utilities and Carriers would like to thank all the employees and contractors of National Grid for their time and effort to restore gas service to all of Aquidneck Island. Although, the Division will eventually engage in a comprehensive review of the sequence of events that led to the outage, our focus now is on service restoration for the health and safety of the citizens of Rhode Island.

In that context, the Division does have an immediate concern that we believe the Company must address before the restoration is completed: the reliability of gas service to Aquidneck Island for the remainder of the winter. Our exclusive intent with this letter is to raise a forward-looking concern with the Company to protect the health and safety of Rhode Islanders.

In various dockets before the PUC, the Company has stated that Aquidneck Island is a capacity constrained area of the Company's service area. The Division also knows from publicly available records that the quantities scheduled to the Portsmouth Take Station approximated the full contracted capacity on the day of the incident. We believe the Company should take appropriate steps to put contingency plans in place that can provide reasonable assurance that an event like the one that has just occurred will not occur again.

In 2018, the Company indicated in responses to information requests that it was establishing a permanent portable LNG site at the Old Mill Land Gate Station in Portsmouth. When the Division asked about the extent to which portable LNG would be used to provide support to Aquidneck Island, the Company responded that it did not expect the need for LNG during the 2018-19 winter period and only intended to use it as back up during the summer when Algonquin performs work on its pipeline.

However, we note that an article in the Providence Journal on January 23rd describes the Company's first response to the low-pressure condition on Monday, stating: "National Grid started setting up a facility at the Portsmouth station to use trucked-in liquefied natural gas to restore pressure, but because of the time required, it wasn't an immediate solution." From the Division's perspective, this raises the question whether the portable LNG site should be made operational for the remainder of the winter.

The Division's concern is in part based on data from Algonquin Pipeline informational reports showing that the quantities scheduled to the Portsmouth Take Station have on numerous occasions been equal to the maximum daily contracted delivery quantity on days when the temperatures have not been as cold as the temperatures experienced on January 21. This leads to the question whether the constraint risks on Aquidneck Island call for reconsideration of the Company's decision not to activate the LNG site as a means for backing-up the supply to Aquidneck Island, or utilize another back-up source such as portable/trucked CNG.

With this letter, the Division is seeking assurances from the Company that National Grid has evaluated all of the risks associated with the capacity constraints in light of the recent events and believes it will be taking all appropriate steps to assure the reliable supply of gas on the coldest days for the rest of the winter.

Thank you,

A handwritten signature in black ink, appearing to read 'KML', with a long horizontal stroke extending to the left.

Kevin M. Lynch
Deputy Administrator
Rhode Island Division of Public Utilities and Carriers

January 25, 2019

VIA ELECTRONIC MAIL

Kevin M. Lynch, Deputy Administrator
Rhode Island Division of Public Utilities and Carriers
89 Jefferson Boulevard
Warwick, Rhode Island 02888

RE: Aquidneck Island

Dear Mr. Lynch:

I write in response to your letter dated January 24, 2019. We understand the Division of Public Utilities and Carriers (the “Division”) has raised concerns regarding the reliability of gas distribution service to Aquidneck Island for the remainder of the winter. National Grid¹ addresses the Division’s concerns in this letter, and would like to meet with the Division next week to discuss the Division’s questions in more detail.

First, this will confirm that National Grid has sufficient pipeline capacity in its portfolio to meet the Company’s load requirements for Aquidneck Island this winter. For the Company to ensure the highest scheduling priority for its gas on Algonquin Gas Transmission’s (“Algonquin”) pipeline, the Company must nominate gas on the pipeline from a primary receipt point to a primary delivery point. For Aquidneck Island, the Company nominates volumes of gas to the Portsmouth take station as the primary delivery point, which feeds Aquidneck Island. The nominated volumes of gas may or may not be physically pulled from the Portsmouth take station. Instead, gas may be drawn from another one of the Company’s take stations where Algonquin delivers gas to the Company. In other words, the Company’s Operational Balancing Agreement with Algonquin allows the Company to balance daily gas receipts and deliveries across all of its take stations in Rhode Island.

As explained during the recent Gas Cost Recovery proceeding before the Public Utilities Commission in Docket No. 4872, the Company did not expect to need LNG operations on Aquidneck Island in winter 2018-19, assuming performance of the suppliers, but instead expected it would need LNG operations on Aquidneck Island during the spring and/or summer of 2019 to assist the transmission pipeline company’s (i.e., Algonquin’s) periodic inspection of its pipe. The Company is exploring whether any options exist that will be large enough to provide supplemental supply on Aquidneck Island for the remainder of the winter.

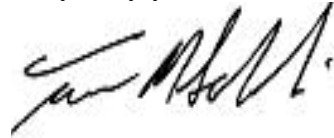
¹ The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”).

Kevin M. Lynch, Deputy Administrator
Aquidneck Island
January 25, 2019
Page 2 of 2

We look forward to having a continuing dialogue with the Division regarding gas service on Aquidneck Island. Please let me know if there is a day next week when the Division is available to meet with the Company's subject matter experts to further discuss this information.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Terence Sobolewski", written in a cursive style.

Terence Sobolewski

cc: Macky McCleary, Administrator
Timothy Horan
Ross Turrini
Bill Malee

LINK System Informational Postings

InfoPost QA

Algonquin Gas Transmission, LLC : Critical

2/22/2019

[BackPrint](#)

TSP: 006951446
TSP Name: Algonquin Gas Transmission, LLC
Critical Notice Description: Critical notice
Notice Effective Date: 01/29/2019
Notice Effective Time: 08:21:58 AM
Notice End Date: 04/01/2019
Notice End Time: 09:00:00 AM
Notice Identifier: 81195
Notice Status Description: Initiate
Notice Type: Capacity Constraint
Posting Date: 01/29/2019
Posting Time: 08:21:58 AM
Prior Notice Identifier:
Required Response
Indicator Description: No response required
Response Date:
Response Time:
Subject: G System Notification

Notice Text:

With the impending colder weather beginning Wednesday January 30, 2019 and in order to maintain the operational integrity of the "G" system, Algonquin Gas Transmission, LLC (AGT) is requesting all customers/point operators on the "G" system to fully nominate their 6% "G" system contracts to the appropriate "G" system meter station. In the event customers do not properly nominate in such a manner, point operators will be limited in their ability to take non-ratable/accelerated deliveries above scheduled volumes to these meters for 6 consecutive hours.

Furthermore, AGT requires that customers/point operators on the "G" lateral be aware of the impact non-ratable hourly takes from the system and the impact it could have on system operations. Delivery pressures could reach lower than desire levels to the extent point operators' hourly takes exceed their maximum hourly transportation quantity (MHTQ) based on their scheduled quantities. AGT's "G" lateral is not designed to sustain delivery pressures above contractual pressure obligations if:

- 1) Point operators' hourly rates are exceeding their MHTQ levels based on nominated quantities or
- 2) Point operators' hourly rates are exceeding 1/24th of the daily nominated quantity for more than 6 consecutive hours (or greater than 6 hours on any gas day)

Furthermore, if customers/point operators do not manage hourly takes from the system within their scheduled MHTQ limits AGT may be required to impose further restrictions or courses of action in order to maintain the operational integrity of the system including the issuance of an hourly OFO pursuant to General Terms and Conditions Section 26.7(d).

Please contact your operations account representative should you have any questions.

[BackPrint](#)

ALGONQUIN GAS TRANSMISSION SYSTEM

National Grid's Portsmouth Meter Pressure Reduction Incident – January 21, 2019 (Gas Day January 20-21, 2019)

- All times reflected below are approximations by Algonquin Gas Transmission's Gas Control Center, and are stated in Central Standard Time.
- Modeled flow is based upon currently available data, and may be subject to further analysis and refinement.
- Analysis is preliminary, and based on currently available data.

Hourly deliveries on the Algonquin Gas Transmission System (AGT System) were higher on January 21, 2019 than any day in the previous 10-year period. The peak hourly delivery rate on January 21, 2019 was approximately 3.3 billion cubic feet per day, compared to the previous high delivery rate in January, 2015 of approximately 2.9 billion cubic feet per day. These record high deliveries occurred between the hours of 4am and 10am, with the highest deliveries occurring from 5am – 8am.

Customers nominate in advance an amount of gas they plan to take from the AGT System on a daily basis. Algonquin then injects an amount of gas into its System that supports the customers' requests for natural gas deliveries based on their forecasted demand. While those deliveries can be taken at a relatively equal rate across a 24-hour time period of the gas day, some customers have the right to adjust their delivery rates throughout the gas day to reflect changes in demand. Even during those hours of increased deliveries, a maximum hourly rate is established based on customers' contracts with AGT, AGT's FERC tariff, nominations and historical utilization information.

On the G-System, total actual hourly deliveries on January 21, 2019 significantly exceeded customer nominations beginning at 3:30am, and continuing until 9:30am. Actual hourly deliveries to National Grid's Providence Area meters significantly exceeded National Grid's nominations beginning at 3:45am, and continuing until 10:30am.

The sudden and dramatic increase in deliveries at National Grid's Providence Area meters over an extended period of time caused a significant decrease in gas available to the remainder of the G-System, which led to the loss of pressure at the delivery point in the Newport Area and Aquidneck Island. National Grid owns an existing LNG facility in the Providence Area, which is physically connected to its distribution system. National Grid's LNG facility is used to reduce or replace its need for natural gas from the AGT System. Algonquin was informed that National Grid's LNG facility was experiencing problems during the hours of the significantly increased deliveries to the Providence Area.

Beginning at 6:20am on January 21, 2019, (3 hours after the start of the significantly increased delivery rates), Algonquin experienced an equipment malfunction at its Weymouth (Boston Area) Meter Station which temporarily restricted one supply source of available natural gas supplies to the east end of the Algonquin System. This equipment malfunction and temporary supply restriction did not cause the significant reduction of pressure at the Portsmouth Meter, but may have extended the time the pressure reduction existed.

As part of our commitment to meeting the region's energy needs, Algonquin plans for and frequently provides gas deliveries above customer nominations; however, in this instance, the sudden, unexpected and dramatic increase in deliveries at the Providence Area meters over an extended time period resulted in an isolated event during which the pressure could not be maintained.

We understand many people were challenged by this service interruption and continue to express our concern for all those affected. Algonquin remains committed to safe and reliable operations.

###

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4755
In Re: 2018 Energy Efficiency Plan
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000
Responses to the Division's Tenth Set of Data Requests
Issued on November 27, 2018

Division 10-25 Corrected and Supplemental

Request:

Please provide the Company's most recent gas peak hourly load growth forecast for the area of Aquidneck Island, both with and without the assumption of the CHP project going forward. In addition, please indicate the point at which the Company could not serve incremental firm load without adding additional capacity infrastructure into the Aquidneck Island area, under both scenarios (including the peak hourly demand limit and any forecasted date when the limit would be hit).

Original Response:

Please see table below for The Narragansett Electric Company d/b/a National Grid's (the Company) most recent gas peak hourly load growth forecast for the area of Aquidneck Island, both with and without the assumption of the CHP project for the ten-year period 2018/19 through 2027/28.¹

Scenario	Peak-Hour Growth Forecast for Portsmouth Take Station (Dth)									
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Planning Load + FT-1 Storage & Peaking Load +C/E Load Without Navy CHP Project	1,202	1,210	1,216	1,216	1,219	1,231	1,221	1,243	1,241	1,247
Planning Load Without Navy CHP Project	1,107	1,115	1,121	1,121	1,124	1,136	1,126	1,148	1,146	1,152
Planning Load + FT-1 Storage & Peaking Load +C/E Load With Navy CHP Project	1,343	1,351	1,357	1,357	1,360	1,372	1,362	1,384	1,382	1,373
Planning Load With Navy CHP Project	1,248	1,256	1,262	1,262	1,265	1,277	1,267	1,289	1,287	1,293
Note: Navy CHP Project = 141 dth/hr										

Planning Load + FT-1 Storage & Peaking + C/E Load reflects: (1) Total firm load for which the Company is responsible to plan capacity resources; (2) FT-1 Capacity Eligible load, for which the Company is responsible to plan for the pipeline portion of that load (which is 49% of total forecasted load), but not the storage and peaking portion of that load (which is 51% of total

¹ Peak hourly load reflects 1/20th of the respective peak day load.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4755
In Re: 2018 Energy Efficiency Plan
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000
Responses to the Division's Tenth Set of Data Requests
Issued on November 27, 2018

Division 10-25, page 2

forecasted load); and (3) FT-1 Capacity Exempt load, for which the Company is not responsible to plan capacity resources. The load for which the Company is not responsible to procure capacity resources is to be provided by third-party marketers for the FT-1 customers.

The Company maintains 22,089 dekatherms (Dth) of capacity per day to meet its forecasted planning load on the Algonquin Gas Transmission system with delivery to the Portsmouth city gate, which serves Aquidneck Island. The Company's peak hourly limit is 1,122 Dth, which is comprised of 1/24th and 6% hourly volumes pursuant to the respective transportation contracts. Removing the customer group loads for which the Company is not responsible to plan capacity resources reduces the 2018/19 forecasted peak hour planning load projection to 1,107 Dth. Based on the current load forecast, this load is forecasted to gradually increase to 1,124 Dth by the 2022/23 winter. Therefore, based on current project forecasts, 2022/23 is the point at which the Company could not serve incremental firm planning load without adding additional capacity resources with delivery to the Aquidneck Island area. If the Navy CHP load were also active on the peak hour of a day at 68 Heating Degree Days in 2022/23, the amount by which the Company projects it would exceed its peak hourly contractual limit would increase to 143 Dth.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4755
In Re: 2018 Energy Efficiency Plan
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000
Responses to the Division's Tenth Set of Data Requests
Issued on November 27, 2018

Division 10-25, page 3

Corrected² and Supplemental Response:

Please see table below for The Narragansett Electric Company d/b/a National Grid's (the Company) most recent gas peak hourly load growth forecast for the area of Aquidneck Island, both with and without the assumption of the CHP project for the ten-year period 2018/19 through 2027/28.³

Scenario	Peak-Hour Growth Forecast for Portsmouth Take Station (Dth)									
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Planning Load + FT-1 Storage & Peaking Load +C/E Load Without Navy CHP Project	1,202	1,210	1,216	1,216	1,219	1,231	1,221	1,243	1,241	1,247
Planning Load Without Navy CHP Project	1,107	1,115	1,121	1,121	1,124	1,136	1,126	1,148	1,146	1,152
Planning Load + FT-1 Storage & Peaking Load +C/E Load With Navy CHP Project	1,343	1,351	1,357	1,357	1,360	1,372	1,362	1,384	1,382	1,373
Planning Load With Navy CHP Project	1,248	1,256	1,262	1,262	1,265	1,277	1,267	1,289	1,287	1,293
Note: Navy CHP Project = 141 dth/hr										

Planning Load + FT-1 Storage & Peaking + C/E Load reflects: (1) Total firm load for which the Company is responsible to plan capacity resources; (2) FT-1 Capacity Eligible load, for which the Company is responsible to plan for the pipeline portion of that load (which is 49% of total forecasted load), but not the storage and peaking portion of that load (which is 51% of total forecasted load); and (3) FT-1 Capacity Exempt load, for which the Company is not responsible to plan capacity resources. The load for which the Company is not responsible to procure capacity resources is to be provided by third-party marketers for the FT-1 customers.

The Company maintains 22,089 dekatherms (Dth) of capacity per day to meet its forecasted planning load on the Algonquin Gas Transmission (Algonquin) system with delivery to the Portsmouth city gate, which serves Aquidneck Island. The Company's peak hourly limit is 1,045 Dth, which is comprised of 1/24th and 6% hourly volumes pursuant to the respective transportation contracts⁴. Removing the customer group loads for which the Company is not

² Footnote 4 reflects the correction to the original response. The remaining portions of the response reflect the Company's supplemental response to the original response.

³ Peak hourly load reflects 1/20th of the respective peak day load.

⁴ The Company's original response included volumes on one contract as providing a 1/20th hourly delivery rate instead of a 1/24th hourly delivery rate.

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4755
In Re: 2018 Energy Efficiency Plan
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000
Responses to the Division's Tenth Set of Data Requests
Issued on November 27, 2018

Division 10-25, page 4

Corrected and Supplemental Response continued

responsible to plan capacity resources reduces the 2018/19 forecasted peak hour planning load projection to 1,107 Dth. Based on the current load forecast, the Company's forecasted planning load peak hour for 2018/19 (1,107 Dth) exceeds the contractual peak hourly limit (1,045 Dth). For the 2018/19 winter, the Company contracted for sufficient resources in its portfolio, including pipeline capacity on both Tennessee Gas Pipeline and Algonquin, to meet the Company's total load requirements, including those for Aquidneck Island. The Company maintains an Operational Balancing Agreement (OBA) with Algonquin, which allows the Company to balance daily gas receipts and deliveries across all of its Algonquin take stations in Rhode Island, including the Portsmouth take station, which serves Aquidneck Island. This operational practice has been in place for decades.

**Algonquin Gas Transmission
Response to PHMSA Information Request
January 27, 2019**

PHMSA Information Request Dated 1/23/2019

Item 1: Was there a frozen valve or some other malfunction at the Weymouth take station or elsewhere on the AGT system on January 21?

Item 2: If there was such a condition, can Enbridge provide us an explanation?

Algonquin did experience a system malfunction at the Weymouth Meter Station on Monday, January 21, 2019, that lasted less than two hours. At 6:21 AM CST, the Control Room increased the flow rate set point from 550,000 dekatherms/day to 700,000 dekatherms/day, which resulted in a second meter run, Meter No. 2, opening. When Meter No. 2 opened, Pressure Regulator No. 2, which is used to control the flow of natural gas to the Algonquin pipeline system, quickly began to cycle between open and closed, and restricted the flow of natural gas to a rate of approximately 150,000 dekatherms/day. The Control Room recognized the cycling flow and dispatched a local Technician.

Algonquin continues to investigate the irregularities experienced at the Weymouth Meter station on January 21, 2019. While other information may be discovered in the course of the investigation, the following factors have been identified and have contributed to this event.

- (i) an incorrect meter factor was stored in the Remote Terminal Unit for Meter No. 2; and
- (ii) the extreme cold temperatures on the control equipment for Pressure Regulator No. 2 may have restricted the movement of the Regulator and thus limited the flow rate even more.

An incorrect meter factor for Meter No. 2, which converts pulses from the meter to a volumetric flow rate, was stored within the Remote Terminal Unit. The incorrect meter factor caused the system to significantly inflate the calculation of natural gas flow through the meter facility, causing two control valves to continue cycling until Pressure Regulator No. 2 was set to manual by the Technician. The Technician took manual control of the Pressure Regulator No. 2 on Monday, January 21st, at 8:14 AM CST, and restored natural gas flow to pre-event conditions. Prior to leaving, the Technician also corrected and verified the meter factor for Meter No. 2.

There was no evidence of liquids or ice within the control valves or sense lines for the control valves. However, external freezing of the control valve actuators impacted the response time of the control valves, which may have caused further flow restrictions.

Algonquin Gas Transmission
Response to PHMSA Information Request JH 21 and 33
March 15, 2019

PHMSA Information Request Dated 02/11/2019 and 2/20/2019

Item JH 21: Pressures and flows for Weymouth (with notation that flows are not accurately represented) from 01/20 -22

Attached file titled *JH No. 21- Pressures and Flows for Portsmouth* is enclosed.

Item JH 33: Under National Grid's contracts, are they permitted to balance usage among various M&R stations on the G-system?

No, National Grid does not have the contractual right to balance usage amongst the various M&R stations on the G-system.

Under the Algonquin tariff and its transportation service agreements, National Grid is required each day (i) to nominate its intended daily delivery quantity to its delivery points on the Algonquin pipeline system and (ii) to manage physical deliveries (hourly and daily) at each delivery point to such nominations, as scheduled and confirmed.

Certain of the National Grid contracts, such as contract number 93011E, provide National Grid with certain limited aggregate delivery point flexibility so that the sum of each of the contractual maximum daily delivery obligations in a group of delivery points identified in the contract may exceed the aggregate maximum daily delivery obligation for that same group of points, provided that the actual delivery quantity at those delivery points in aggregate on any given day does not exceed the aggregate maximum delivery obligation for those points, and provided further that actual deliveries for each delivery point equals nominations at that point. This limited flexibility related to the daily contractual delivery point obligations does not allow National Grid, without advance notice, to shift delivery volumes among delivery points once gas is flowing during the gas day. In every case, National Grid is required to nominate the intended daily delivery quantity to each delivery point prior to the gas day, up to contractual entitlements, and to manage to its scheduled and confirmed nominations.

National Grid also is party to an Operational Balance Agreement with Algonquin that covers inadvertent underdeliveries/overdeliveries at specified delivery points on the Algonquin pipeline system. This Operational Balancing Agreement provides that any variance between actual and scheduled/confirmed quantities will be resolved in kind promptly or cashed out. The agreement does not, and is not intended to, allow National Grid to nominate gas to certain delivery points but physically take gas at alternative delivery points.

Contains confidential business/commercial or sensitive security information protected from disclosure under FOIA, 5 U.S.C. § 552.

**Algonquin Gas Transmission
Response to PHMSA Information Request on JH 37 - 43
May 31, 2019**

PHMSA Information Request Dated 05/23/2019

Item JH 37: In reviewing slides 2 (G System Deliveries) and 3 (Total G System Deliveries), can you please explain how they are different?

Slide 2 provides the AGT load forecast while Slide 3 provides the contractual allowable maximum hourly deliveries. The legends for the two slides are provided below.

Slide 2:

- Blue line – Customer nominations
- Yellow line – Actual deliveries
- Green line – AGT load forecast based on customer nominations, contractual maximums, weather forecast, historical flowrates, and other factors

Slide 3:

- Blue line – Customer nominations
- Green line – Actual delivers
- Purple line – Maximum hourly limit based on customers' scheduled delivery quantities requested by the customers and the associated hourly entitlements of those scheduled quantities

Item JH 38: Looking at the G System Delivery graph at 6:30 am on Jan. 21, actuals exceeded nominations by about 140 DTH/d on the Total G system Deliveries. On the Narragansett Electric Providence Area Deliveries, the delta was about 80 DTH/d. Previously it was provided that, "The Link Segment Report indicates that National Grid holds 54% of capacity on the G System (254,473 Dth/d out of 471,305 Dth/d). This includes Narragansett Electric and Colonial Gas – both are National Grid subsidiaries". Who/where was the rest of the delivery above nomination? Did other NG M&R stations or any other companies' M&R delivery exceed their nominations on the G system on Jan. 21?

GT confirms that the quantity of gas delivered to some other G-System customers on calendar day January 21, 2019 during certain hours exceeded their respective maximum hourly limit based on their scheduled delivery quantities requested by the customers and the associated hourly entitlements of those scheduled quantities. AGT does not believe the identity of those customers is relevant or necessary for PHMSA's investigation, but rather that the information provided regarding the quantity of exceedances is sufficient for these purposes.

**Algonquin Gas Transmission
Response to PHMSA Information Request on JH 44 - 46
June 12, 2019**

PHMSA Information Request Dated 05/30/2019

Item JH 44: Can you please provide a contact at TGP so I can ask them about the issues at the Mendon interconnect on Jan. 21? Believe it was compressor related.

TGP Manager of Gas Control is [REDACTED]

Item JH 45: When/how/to whom did National Grid make Enbridge aware that they had issues at their Providence LNG plant?

At approximately 8:45 am CST on January 21, 2019, Enbridge Gas Control called National Grid to notify them of the equipment issues at Weymouth Meter Station and system pressure conditions on AGT. During that call, National Grid mentioned having issues with the LNG plant but did not provide specific information. During a post-incident meeting between Enbridge and National Grid held on January 29, 2019, National Grid explicitly mentioned that the National Grid LNG plant was unavailable for a period of time on January 21, but did not provide specific details.

It is important to note that the issue at National Grid's LNG plant did not affect Enbridge's response to the low pressure event on AGT.

Item JH 46: One last modeling request. The purpose - determine if the Weymouth K-factor issue did not happen, but the Providence LNG plant experienced issues and other overtakes occurred on other gate stations on the G-system due to weather, what pressure would AGT have needed to supply at the head of the system to maintain a minimum of 100 PSI at Portsmouth gate station? Please model the G-system in steady state using the actual gate station takes at 6AM CST on Jan. 21, 2019 with the inlet to the Portsmouth gate station set at 100 PSI and solve for the pressure at the head of the G-system.

Using actual flows for the G-System for 6AM CST on Jan. 21, 2019:

[REDACTED]

Contains confidential business/commercial or sensitive security information protected from disclosure under FOIA, 5 U.S.C. § 552.

Algonquin Gas Transmission
Response to PHMSA Information Request on JH 49 - 50
August 7, 2019

PHMSA Information Request Dated 07/15/2019

Item JH 49: Has Enbridge drawn any conclusions (preliminary or otherwise) regarding the extent to which the low-pressure conditions on the G-System would have been mitigated – and, thus, avoided the severe drop in pressure at the Portsmouth take station – had the control valve at Weymouth functioned properly? If so, can you please describe Enbridge’s perspective on this question, with supporting explanation?

See response to Item JH 50.

Item JH 50:

- a) Has Enbridge modeled a scenario in which (i) the Providence LNG plant shuts down (as actually occurred), (ii) other overtakes occur (as actually happened) on other gate stations on the G-system, and (iii) the control valve at Weymouth functions properly?**
- (b) If so, can you please provide the modeling results?**
- (c) If such a modeling run was done, did the modeling result provide an estimate of how low the pressure would have reached at the Portsmouth take station, compared to what actually occurred? If so, please provide.**
- (d) If such a scenario has not been run, does Enbridge intend to run such a modeling scenario?**
- (e) If such a scenario has not been run, how long would it take to run such a scenario that answers the question referenced in (c) above?**

Hourly takes on the Algonquin Gas Transmission System (AGT System) were higher on January 21, 2019 than any day in the previous 10-year period. The peak hourly rate on January 21, 2019 was approximately 3.3 billion cubic feet per day, compared to the previous high rate in January, 2015 of approximately 2.9 billion cubic feet per day. These record high takes occurred between the hours of 4am and 10am Central, with the highest takes occurring from 5am – 8am Central.

On the G-System, total actual hourly takes on January 21, 2019 significantly exceeded customer nominations beginning at 3:30am Central, and continuing until 9:30am Central.

For Algonquin’s ten delivery points on the G System in Rhode Island specifically, total actual hourly takes on the morning of January 21, 2019, significantly exceeded maximum hourly limits based on the scheduled quantities requested by the customers and the associated hourly entitlements of those scheduled quantities. For the six hours beginning at approximately 4:00 am

Algonquin Gas Transmission
Response to PHMSA Information Request on JH 49 - 50
August 7, 2019

Central, actual hourly takes at those ten delivery points on the G System in Rhode Island averaged more than 33% above maximum hourly limits based on the scheduled quantities requested by the customers and the associated hourly entitlements of those scheduled quantities. Those actual hourly takes reached as high as approximately 54% above the maximum hourly limits for the hour beginning at 6:00 am Central. Actual hourly takes at Providence area meters significantly exceeded nominations beginning at approximately 3:45 am Central, and continuing until 10:30 am Central.

National Grid owns an existing LNG facility in the Providence area, which is physically connected to its distribution system. National Grid's LNG facility is used at times to supplement its supply of natural gas from the Algonquin system. Algonquin was informed by National Grid personnel that National Grid's LNG facility had experienced problems during the hours of the significantly increased takes of natural gas in the Providence area on the morning of January 21.

The sustained and dramatic increase in customers' hourly takes of natural gas from the Algonquin G-System, both overall and in Rhode Island specifically, over an extended period of time caused a significant decrease in gas available to the G-System. Algonquin believes National Grid's inability to use their LNG supplies in the Providence area during this time also caused National Grid to take increased volumes of natural gas from Algonquin in the Providence area. The material increase in takes from the G system coincides with the time frame in which National Grid would have experienced their LNG facility problem.

Following this significant increase in demand, Algonquin's Houston Gas Control located in Houston, TX (HGC) adjusted the volume of gas flowing from Maritimes & Northeast Pipeline and Northeast Gateway LNG ships through the Weymouth mainline regulator station into the Algonquin system. Approximately three hours after the significant increase in the hourly rate of gas taken in Rhode Island, or approximately 6:20 am Central, Algonquin experienced an equipment malfunction at Weymouth, which temporarily restricted available natural gas supplies flowing through Weymouth to the east end of the Algonquin System. The malfunction was corrected and the station was placed back in normal HGC Auto Control at 10:55 am Central.

To inform Algonquin's perspective, Algonquin modeled different scenarios examining three conditions that occurred on that day. Those conditions were (1) the problems at National Grid's LNG facility in the Providence area; (2) customer takes that exceeded their contractual hourly limits based on customer nominations; and (3) the malfunction at Algonquin's Weymouth Meter

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Station. As is the case for all flow modeling exercises, Algonquin made certain assumptions in building the model.

Base Case Scenario

- Hourly takes for customers on the G System (other than National Grid) were as experienced on January 21.
- National Grid's hourly takes at Providence were as experienced on January 21.
- The malfunction occurred at Weymouth Meter Station.

The result of this model scenario was a minimum pressure of approximately ■■■ psig at the Portsmouth Meter Station.

Model Scenario 1

- Hourly takes for customers on the G System (other than National Grid) were as experienced on January 21.
- National Grid's hourly takes at two Providence meters were limited to lower volumes to account for an assumed amount that would have been provided by National Grid's LNG plant if it had continued to operate. (This assumes National Grid's Providence LNG plant continued to operate.)
- The malfunction occurred at Weymouth Meter Station.

The result of this model scenario was a minimum pressure of approximately ■■■ psig at the Portsmouth Meter Station.

Model Scenario 2

- Hourly takes for customers on the G System (other than National Grid) were as experienced on January 21.
- National Grid's hourly takes at Providence were limited to volumes allowed by their contracts.
- The malfunction occurred at Weymouth Meter Station.

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The result of this model scenario was a minimum pressure of approximately [REDACTED] psig at the Portsmouth Meter Station.

Model Scenario 3

- Hourly takes for customers on the G System (other than National Grid) were limited to volumes allowed by their contracts.
- National Grid's hourly takes at Providence were as experienced on January 21.
- The malfunction occurred at Weymouth Meter Station.

The result of this model scenario was a minimum pressure of approximately [REDACTED] psig at the Portsmouth Meter Station.

Model Scenario 4

- Hourly takes for customers on the G System (other than National Grid) were as experienced on January 21.
- National Grid's hourly takes at Providence were as experienced on January 21.
- Weymouth Meter Station did not experience a malfunction and flow through Weymouth was held at an accelerated rate of 650Mmdth/d during those morning hours.

The result of this model scenario was a minimum pressure of approximately [REDACTED] psig at the Portsmouth Meter Station.

Model Scenario 5

- Hourly takes for customers on the G System (other than National Grid) were limited to volumes allowed by their contracts.
- National Grid's hourly takes at Providence were limited to volumes allowed by their contracts.
- The malfunction occurred at Weymouth Meter Station.

The result of this model scenario was a minimum pressure of approximately [REDACTED] psig at the Portsmouth Meter Station.

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Model Scenario 6

- Hourly takes for customers on the G System (other than National Grid) were as experienced on January 21.
- National Grid's hourly takes at two Providence meters were limited to lower volumes to account for an assumed amount that would have been provided by National Grid's LNG plant if it had continued to operate. (This assumes National Grid's Providence LNG plant continued to operate.)
- Weymouth Meter Station did not experience a malfunction and flow through Weymouth was held at an accelerated rate of 650Mmdth/d during those morning hours.

The result of this model scenario was a minimum pressure of approximately [REDACTED] psig at the Portsmouth Meter Station.

For all 6 modeled scenarios, the estimated low pressure at the Portsmouth Meter Station is substantially higher than the 38 psig actually experienced on January 21, 2019. Algonquin does not have information about National Grid's system downstream of the Portsmouth Meter Station. Thus, Algonquin does not know the pressure at which National Grid would have been required to shut in some or all of its customers downstream of Portsmouth.

From: [Lodmore, David C.](#)
To: [Halliday, Julie \(PHMSA\)](#)
Cc: [Katchmar, Peter \(PHMSA\)](#)
Subject: RE: EXT || Additional Data Requests - RI Gas Outage - Jan. 21, 2019
Date: Tuesday, June 11, 2019 4:11:36 PM

Hi Julie, here are the answers to your IRs. Please let me know if you have any further questions.

1. Please provide any reports or studies produced internally or by consultants following the issues experienced at the Providence LNG plant on Jan. 21, 2019.

National Grid LNG, LLC ("NGLNG") has analyzed the issues experienced at the Providence LNG plant on January 21, 2019. NGLNG has determined that an automatic plant shutdown occurred because of an interruption in power supply on the automatic plant shutdown system. When that automatic plant shutdown occurred, the boil-off valve closed. The plant was unable to restart immediately because the relay on the boiloff value failed to reset. The weather conditions, which included rapidly dropping temperatures and freezing rain, caused the boil-off valve and the fuel valves to the vaporizers to quickly freeze closed. The plant operators were able to manually open the boil-off valve and thaw the fuel valves and restart the plant (the fuel valves continued in automatic as the compressor valve was still manual). Additionally, after the plant restarted vaporizing, operators identified problems with the burner management system on vaporizer 3 and the damper on vaporizer 2 that reduced the plant output. Subsequent to January 21, 2019, NGLNG replaced the burner management controller, air proving pressure switch, and ignitor on vaporizer 3 and replaced the bolts holding the damper in place on vaporizer 2, which resolved the problems NGLNG experienced with the operation of those vaporizers on January 21, 2019 which restored full plant output capability. Additionally, NGLNG sent the actuator, which operates to automatically open and close the boil-off valve, to be repaired. The repaired actuator has now been re-installed.

NGLNG also has analyzed and corrected the problem that occurred with the automatic plant shutdown system on January 21, 2019. NGLNG had been experiencing unexpected automatic plant shutdowns since March of 2018, which, until January 21, 2019, had been intermittent and after which plant equipment restarted immediately without incident. NGLNG had been working with CHI Engineering, the firm that designed and installed the automatic plant shutdown system, as well as other engineering firms, to identify the cause of these automatic plant shutdowns and had taken steps to try and correct them, including installing an electrical time delay on the relay system. Subsequent to January 21, 2019 NGLNG performed voltage testing and monitoring to determine the nature of the electrical interruption that had triggered automatic plant shutdowns, concluding that there were intermittent interruptions in the output from the uninterruptible power supply (UPS) that powered the automatic plant shutdown system. After reaching that conclusion, NGLNG transferred the electrical feed for the automatic shutdown system to a different UPS to correct that problem. Since shifting the power supply for the automatic plant shutdown system, NGLNG has operated the plant regularly and has not experienced any automatic plant shutdowns. NGLNG will be conducting a test of the system in September to ensure

that it is operating properly in advance of the 2019-2020 winter.

NGLNG has not had any written reports or studies produced internally or by consultants regarding the problems experienced on January 21, 2019.

2. Are alarms, pressure/flow readings or other data that is viewed from the Providence LNG control room viewable from at any other location? Alternatively, can the controllers at Providence LNG control room view any data for other parts of National Grid infrastructure (including Narragansett Electric) such as the pressure at the Portsmouth gate station?

A. National Grid LNG LLC's ("NGLNG") control room and the control rooms for the National Grid-affiliated gas distribution operating companies ("Gas Control") are separate operations with separate systems that monitor different things. The alarms, pressure/flow readings and other data regarding the operations of the NGLNG plant that are available in the NGLNG control room are not available from any other location. The only information Gas Control can see regarding the NGLNG operations is the sendout and boil-off pressures and flows being delivered from the NGLNG plant onto the distribution system. Similarly, the operators in the NGLNG control room cannot view data from Gas Control on the distribution system, such as the pressure at the Portsmouth gate station.

Many thanks,

David Lodemore

Senior Counsel
National Grid USA
40 Sylvan Road
Waltham, MA 02451

Phone: (781) 907-3704

From: Halliday, Julie (PHMSA) <julie.Halliday@dot.gov>

Sent: Friday, May 31, 2019 9:14 AM

To: Lodemore, David C. <David.Lodemore@nationalgrid.com>

Cc: Katchmar, Peter (PHMSA) <Peter.Katchmar@dot.gov>

Subject: EXT || Additional Data Requests - RI Gas Outage - Jan. 21, 2019

Hi David,

Two data requests:

1. Please provide any reports or studies produced internally or by consultants following the issues experienced at the Providence LNG plant on Jan. 21, 2019.
2. Are alarms, pressure/flow readings or other data that is viewed from the Providence LNG control room viewable from at any other location? Alternatively, can the controllers at Providence LNG control room view any data for other parts of National Grid infrastructure

(including Narragansett Electric) such as the pressure at the Portsmouth gate station?

Thanks,

Julie

Julie Halliday, Senior Accident Investigator
US DOT PHMSA Accident Investigation Division
Cell 202-389-2039
National Pipeline Incident Coordinator (NPIC) 888-719-9033
Investigate – Analyze - Prevent

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**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DIVISION OF PUBLIC UTILITIES AND CARRIERS
89 JEFFERSON BOULEVARD
WARWICK, RHODE ISLAND 02888**

IN RE: UNDOCKETED

SUMMARY INVESTIGATION INTO THE AQUIDNECK ISLAND GAS
SERVICE INTERRUPTION OF JANUARY 21, 2019

ORDER

Decision in Response to Joint Motion from The Narragansett
Electric Company d/b/a National Grid and the Division's
Advocacy Section to Amend the March 13, 2019 Protective Order.

Whereas: The Division of Public Utilities and Carriers ("Division") has opened an investigation into the gas service interruption that occurred on Aquidneck Island during the week of January 21, 2019. At present, the investigation is designated as a "summary" investigation, which the Division is authorized to conduct under Rhode Island General Laws, Section 39-4-13. The scope of this investigation is designed to examine the causes of the outage and whether there exist any gas capacity or supply constraints on Aquidneck Island.

If, after making a summary investigation, the Division becomes satisfied that sufficient grounds exist to warrant a formal hearing being ordered as to the matters so investigated, the Division will open a formal docket and furnish official notice to both National Grid and the public in accordance with the

provisions of Rhode Island General Laws, Sections 39-4-14 and 39-4-15. After such a formal hearing and review, the Division would issue a final written decision containing its findings and any directives.

Whereas: On March 8, 2019, National Grid filed a motion with the Division, seeking confidential treatment and protection from public disclosure, on what National Grid describes as, “certain confidential, competitively sensitive, and proprietary information, including Critical Energy Infrastructure Information (“CEII”),” contained in its responses to the First Set of Data Requests issued by the Division’s Advocacy Section on February 5, 2019. National Grid’s motion indicated that the Division’s Advocacy Section had reviewed and assents to the motion.

Concomitant with its motion, National Grid also requested that the Hearing Officer enter a protective order, “directing that the Division shall not share any of National Grid’s Confidential Information with any third party, except on the terms set forth in the Protective Order attached as Exhibit A.”

“Exhibit A” to National Grid’s motion is reproduced below:

PROTECTIVE ORDER

WHEREAS, The Narragansett Electric Company d/b/a National Grid (National Grid or the Company) and the Rhode Island Division of Public Utilities and Carriers (the Division) (collectively, the Parties) moved for entry of a protective order concerning the Division’s Summary Investigation Into the Aquidneck Gas Service Interruption of January 21st, 2019 (the Investigation);

WHEREAS, National Grid maintains that certain documents and information National Grid discloses to the Division constitute information for

which the Company has independent legal obligations to maintain as confidential and privileged;

WHEREAS, certain documents and information National Grid discloses to the Division may constitute Critical Energy Infrastructure Information (CEII) that should be maintained as confidential;

WHEREAS, the Parties agree that the disclosure of confidential or proprietary information to third parties should not take place in the absence of a protective order appropriately limiting the use and dissemination of such confidential or proprietary information; and

WHEREAS, good cause has been shown for the entry of this Protective Order;

NOW, THEREFORE, THIS HEARING OFFICER ORDERS the following:

1. National Grid may provisionally designate as "CONFIDENTIAL Contains Privileged and Confidential Information – Do Not Release" any such documents, information, tangible things, or other material it provides to the Division that it maintains is Confidential Information as defined below. As used in this Protective Order, the term "Confidential Information" is defined as material or information which contains trade secret information, confidential business information, private personal information, or other information that National Grid has an independent legal obligation to maintain as confidential and privileged.
2. National Grid may provisionally designate as "CONFIDENTIAL – Contains Critical Energy Infrastructure Information (CEII). Do Not Distribute or Copy" any such documents, information, tangible things, or other material it provides to the Division that it maintains is Critical Energy Infrastructure Information. Materials designated "CONFIDENTIAL – Contains Critical Energy Infrastructure Information (CEII). Do Not Distribute or Copy" will provisionally be considered "Confidential Information" pursuant to this Protective Order.
3. If the Division disagrees with the Company's provisional designation of information as Confidential Information, the Division retains the right to file a motion at any time with the Hearing Officer disputing the provisional designation, with proper notice to the Company, who shall be given an opportunity to respond, and the Hearing Officer shall retain the authority to make a determination of whether the information in dispute should retain its status as Confidential Information. The Parties retain their right to appeal any determination that certain information is or is not Confidential

Information or that such information should or should not be subject to the requirements of this Protective Order. The information shall be provisionally maintained as Confidential Information until the Parties' available administrative and judicial remedies have been exhausted.

4. Subject to paragraph 3, all information that has been provisionally designated by the Company as Confidential Information pursuant to this Protective Order shall be used solely for the purpose of the Investigation or any other legitimate purpose relating to the Company that is within the authority and duties of the Division, subject to the Company's right to challenge the use of such information on any appropriate legal basis, and for no other purpose whatsoever, and shall not be disclosed to any person except in accordance with the terms hereof.

5. Prior to the Division disclosing any Confidential Information to any person who is not an employee of the Division, the Division shall provide such person with a copy of this Protective Order and obtain from such person a written acknowledgment in the form attached as Exhibit A, stating that he or she has read this Protective Order and agrees to be bound by its provisions. All such acknowledgments shall be retained by the Division.

6. Any person in possession of Confidential Information must maintain the confidentiality of that Confidential Information consistent with the efforts that such party or entity would take to maintain the confidentiality of its own confidential information. All Confidential Information, whether physical documents or electronically stored information, must be maintained in a secure location that limits access to only those persons authorized to view Confidential Information.

7. No Confidential Information shall be disclosed to a person unless that person is also permitted to view or receive Confidential Information pursuant to this Protective Order.

8. Any person that receives Confidential Information pursuant to this Protective Order must notify National Grid and the Division in writing if he or she receives a subpoena or court order concerning the Confidential Information. That person shall cooperate with respect to all reasonable procedures requested by National Grid to protect disclosure of Confidential Information. If National Grid or the Division seeks a protective order to prevent disclosure of Confidential Information, the person shall not disclose Confidential Information before a final determination by the court or agency from which the subpoena or order issued.

9. At the conclusion of the Investigation, within 60 days, all Confidential Information provided to third parties by the Division under the terms of this Protective Order shall be returned to the Division or destroyed; provided, however, that any third party who continues to provide engineering services to the Division may retain such copies of CEII as the Division permits. In such case, the Division will notify the Company that such party is retaining the information and the provisions of this Protective Order shall continue to apply. The third party who retains such copies of CEII for the purpose of continuing to provide engineering services to the Division shall use the CEII only for matters relating to the Company and for no other purpose whatsoever, and subject to the Company's right to challenge the use of such information on any appropriate legal basis. When the services contract between such third party and the Division is terminated or terminates in accordance with its terms, such CEII information shall be returned to the Division or destroyed.

10. The Parties may take all actions they deem appropriate, including seeking injunctive relief and/or sanctions, to enforce the terms of this Protective Order before the Hearing Officer assigned to the Investigation or other appropriate adjudicatory body having jurisdiction.

EXHIBIT A

I, the undersigned, do depose and state as follows:

1. My address is _____. My current employer is _____. My current occupation is _____.
2. I have received a copy of the Protective Order in the above-captioned matter, and I have carefully read and understand its provisions. I will comply with all the provisions of the Protective Order. I will hold any information designated Confidential Information in confidence and I will not disclose such information to anyone not qualified under the Protective Order.
3. Promptly upon termination of the Investigation, I will return all Confidential Information to the Division.
4. I hereby submit to the jurisdiction of this Hearing Officer for the purpose of enforcement of the Protective Order in this matter.

Signed under the pains and penalties of perjury, this ____ day of _____, 20__.

Signature

Printed Name

Whereas: After reviewing and considering National Grid's request, the Division granted National Grid's March 8, 2019 Motion for Protective Treatment of Confidential Information and for a Protective Order on an interim basis through Order No. 23461, issued on March 13, 2019.

Whereas: Subsequently, on April 18, 2019 the Division's Advocacy Section and National Grid filed a "Joint Motion to Amend the March 13, 2019 Protective Order." In its motion, the parties note that the process provided in the Division's March 13, 2019 protective order for designating documents as 'Confidential Information' currently only applies to National Grid. The parties now seek to extend this process to other entities and individuals from which the Advocacy Section of the Division may seek information related to the instant investigation. To accommodate this request, the parties have asked the Hearing Officer to consider amending the March 13, 2019 protective order to add the additional paragraphs:

11. Any other person or entity that provides documents and information to the Division as part of the Investigation shall have the right to protect any information that it maintains is Confidential Information pursuant to the terms of this Protective Order by designating any such documents and information as set forth in paragraphs 1 and 2 of this Protective Order, subject to the procedures set forth in paragraphs 3 and 4 of this Protective Order, and with all protections for such documents and information provided by paragraphs 5 through 12 of this Protective Order. The term "Confidential Information" in this paragraph is further defined to include material or information which contains trade secret information, confidential business information, private personal

information, or other information that the entity or individual providing the information has an independent legal obligation to maintain as confidential and privileged.

12. When provisionally designating materials provided to the Division in this summary investigation as "Confidential," "CONFIDENTIAL Contains Privileged and Confidential Information – Do Not Release" pursuant to paragraph 1 of this Protective Order, or "CONFIDENTIAL – Contains Critical Energy Infrastructure Information (CEII). Do Not Distribute or Copy" pursuant to paragraph 2 of this Protective Order (or any other designation of confidentiality), the entity or individual providing the Confidential Information (the "Responder") shall make that designation by labeling all designated documents using the following labeling protocol to identify the nature of the confidentiality designation:

(a) "Confidential – Investigatory Record": This is placed on all responses that do not fall under one of the other categories set forth below. It assures that materials provided during the investigation (not otherwise confidential) retain the "investigatory record" exemption under the Access to Public Records Act (APRA), R.I. Gen. Laws § 38-2-2(4)(P). It is not an assertion of confidentiality beyond the exemption that applies pursuant to that subsection of APRA. A designation with this label does not preclude the Division from including such documents in its final report of the results of the Investigation.

(b) "CONFIDENTIAL – CEII Material" or "This Document Contains Critical Energy Infrastructure Information (CEII) – Do Not Release": This is a claim by the Responder that this is critical energy infrastructure information.

(c) "CONFIDENTIAL – Customer Specific Information": This is information that the Responder believes should be confidential because it relates to personal or business information of individual

customers that the Responder typically treats as confidential.

(d) “CONFIDENTIAL – Customer Usage”: This is disaggregated energy consumption information of individual customers that the Responder typically treats as confidential.

(e) “CONFIDENTIAL – OTHER”: This is information that falls under paragraph 12(a) above, but that the Responder claims is exempt from public disclosure under APRA on additional grounds. The Responder shall identify the section(s) of APRA that sets forth the exception(s) that the Responder asserts applies and provide a reasonable explanation justifying its claim(s) of confidentiality.¹

Whereas: The parties have additionally requested that the Hearing Officer further amend the protective order “to provide that any entity or individual that has provided Confidential Information to the Division before the entry of the amended protective order (that added the labeling protocol above) shall review such Confidential Information and inform the Division of the label that applies to any such Confidential Information within a reasonable time, including a justification for any that fall under category (e) above. A reasonable time shall be defined as: (a) for Confidential Information provided on or before February 28, 2019, no later than April 26, 2019; and (b) for Confidential Information provided after February 28, 2019, no later than May 15, 2019.”²

Whereas: The Division finds the moving parties’ request to amend the protective order, previously issued on March 13, 2019 in this matter, to be

¹ See April 18, 2019 Motion at pp. 2-3.

² Id., p. 3.

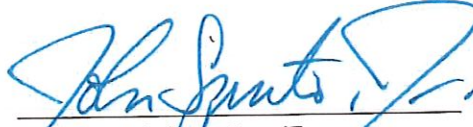
reasonable. However, the Division must reiterate that it has not inspected any of the documents subject to the protective order and is only approving these requests for protective treatment on an interim basis.

Now, therefore it is

(23548) Ordered:

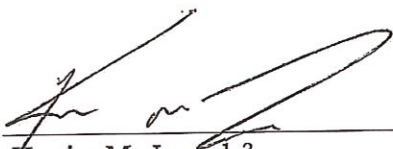
1. That the Division's Advocacy Section's and National Grid's April 18, 2019 "Joint Motion to Amend the March 13, 2019 Protective Order," is hereby granted on an interim basis.
2. That the parties shall act in accordance with the findings and directives contained herein and in Order No. 23461, as amended.

Dated and Effective at Warwick, Rhode Island on April 22, 2019.



John Spirito, Jr., Esq.
Hearing Officer

APPROVED:



Kevin M. Lynch³
Deputy Administrator

³ Normally, the Administrator of the Rhode Island Division of Public Utilities and Carriers ("the Administrator") would approve and sign Orders such as this. In his absence, and pursuant to the authority granted by R.I.G.L. §§ 42-20-3 and 42-20-5, Deputy Administrator Lynch has been designated and authorized by the Administrator to sign Orders such as this issued by the Division of Public Utilities and Carriers.