

Via Hand Delivery

October 1, 2021

Emma Rodvien, Coordinator
Energy Facility Siting Board
89 Jefferson Boulevard
Warwick, RI 02888

Re: **Prefiled Testimony of Tim Casey, Jacques Alfonso, Danil Lamriben and Nicholas Dube
The Narragansett Electric Company/ Portable LNG Vaporization Project
EFSB Docket No. SB-2021-04**

Dear Ms. Rodvien:

I am enclosing for filing on behalf of The Narragansett Electric Company an original and seven (7) copies of the following prefiled testimony as required by the Rhode Island Energy Facility Siting Board's Order No. 150:

- Prefiled testimony of Jacques Afonso which is marked as Exhibit No. TNEC-5A;
- Prefiled joint testimony of Danil Lamriben and Nicholas Dube which is marked as Exhibit No. TNEC-5B; and
- Prefiled testimony of Tim Casey which is marked as Exhibit No. TNEC-5C.

Very truly yours,



George W. Watson III

Enclosure

Copy to: Service List (by electronic mail)

22886013-v1

SB-2021-04 The Narragansett Electric Company d/b/a National Grid Application for License to Mobilize and Operate a Liquefied Natural Gas (LNG) Vaporization Facility at Old Mill Lane (Portsmouth, RI)

Updated October 1, 2021

Name	E-mail
Ronald Gerwatowski (PUC)	Ronald.gerwatowski@puc.ri.gov ;
Terry Gray (DEM)	terry.gray@dem.ri.gov ;
Meredith Brady (DOA)	Meredith.Brady@doa.ri.gov ;
Patricia Lucarelli (PUC)	Patricia.lucarelli@puc.ri.gov ;
Emma Rodvien (PUC)	Emma.Rodvien@puc.ri.gov ;
Suzanne Amerault (DEM)	Suzanne.amerault@dem.ri.gov ;
Maria Mignanelli (DOA)	Maria.mignanelli@doa.ri.gov ;
George Watson (Robinson Cole)	gwatson@rc.com ;
Leticia Pimentel (Robinson Cole)	LPimentel@rc.com ;
Mark Rielly (National Grid)	Mark.Rielly@nationalgrid.com ;
Linda George (DPUC)	Linda.George@dpuc.ri.gov ;
Thomas Kogut (DPUC)	thomas.kogut@dpuc.ri.gov ;
Christy Hetherington (DPUC)	christy.hetherington@dpuc.ri.gov ;
John Bell (DPUC)	john.bell@dpuc.ri.gov ;
Margaret Hogan (DPUC)	Margaret.L.Hogan@dpuc.ri.gov ;
Al Mancini (DPUC)	al.mancini@dpuc.ri.gov ;
Tiffany Parenteau (AG)	TParenteau@riag.ri.gov ;
Todd Bianco (PUC)	Todd.bianco@puc.ri.gov ;
Cynthia Wilson-Frias (PUC)	Cynthia.WilsonFrias@puc.ri.gov ;
John Harrington (PUC)	John.Harrington@puc.ri.gov ;
Alan Nault (PUC)	Alan.Nault@puc.ri.gov ;
Nicholas Vaz (AG)	NVaz@riag.ri.gov ;
Gregory Schultz (AG)	gSchultz@riag.ri.gov ;
Nicholas Ucci (OER)	Nicholas.Ucci@energy.ri.gov ;
Christopher Kearns (OER)	Christopher.Kearns@energy.ri.gov ;
Carrie Gill (OER)	Carrie.Gill@energy.ri.gov ;
Jennifer West (Town Clerk, Portsmouth)	clerkoffice@portsmouthri.com ;
Richard Rainer, Jr. (Town Administrator, Portsmouth)	rrainer@portsmouthri.com ;
Kevin Gavin (Town Solicitor, Portsmouth)	kevingavinlaw@gmail.com ;

Wendy Marshall (Town Clerk, Middletown)	wmarshall@middletownri.com ;
Marisa Desautel	Marisa@desautelesq.com ;
Clarice Parsons	clarice@desautelesq.com ;
Terence Tierney	Tierneylaw@yahoo.com ;
RI Senator Luis DiPalma	Sen-DiPalma@rilegislature.gov ;
Peter Horvath	Pjh11503@yahoo.com
Meg Curran (CLF)	mcurran@clf.org ;
James Crowley (CLF)	jcrowley@clf.org ;
Ellen Ullucci (AG)	EUllucci@riag.ri.gov ;
Sue McDonald	sue@anglesandinsights.com ;
Hank Webster (Acadia Center)	HWebster@acadiacenter.org ;
Steven MacDonald	Semacdonald124@outlook.com ;
Laurie MacDonald	Macdonalds6@cox.net ;

The Narragansett Electric Company
(Portable LNG Vaporization Project)
EFSB Docket No. SB-2021-04

Testimony of:
Jacques Afonso

October 1, 2021

EXECUTIVE SUMMARY

The Narragansett Electric Company (“Company”) witness and Principle Program Manager in the Community & Customer Management department, Jacques Afonso, provides an overview of the outreach to the direct abutters to the Portable LNG Vaporization Operation at Old Mill Lane in Portsmouth, Rhode Island (the “Project”) in this prefiled testimony. Mr. Afonso also specifically responds to the August 23, 2021 letter submitted by the MacDonalds. Mr. Afonso summarizes the communications with the MacDonalds since February 2020 including the latest communication regarding noise associated with Enbridge’s 2021 pigging operation. Mr. Afonso lists two other neighbors who raised noise concerns and outlines the adjustments that the Company has made to mitigate the noise impacts from the Project.

1 INTRODUCTION

2 Q. Please state your name and business address.

3 A. My name is Jacques Afonso. My business address is 280 Melrose Street, Providence,
4 Rhode Island 02907.

5 Q. By whom are you employed and what is your position?

6 A. I am employed by National Grid USA Service Company as a Principal Program Manager
7 in the Community & Customer Management Department.

8 Q. What is National Grid USA Service Company?

9 A. National Grid USA Service Company (the “Service Company”) is a wholly owned
10 subsidiary of National Grid USA, an energy company specialized in the transmission and
11 distribution of electricity and natural gas. The Service Company provides administrative
12 and technical services (such as engineering, accounting and legal services) to the other
13 subsidiaries of National Grid USA, including The Narragansett Electric Company d/b/a
14 National Grid (“National Grid” or the “Company”).

15 Q. What are your responsibilities as Principal Program Manager in the Community &
16 Customer Management Department?

17 A. I am the National Grid liaison and account manager for the Municipalities of East
18 Providence, Barrington, Warren, Bristol, Tiverton, Little Compton, Jamestown,
19 Portsmouth, Middletown and Newport. I am also the National Grid liaison and account
20 manager for large customers including Life Span, Narragansett Bay Commission, Roger
21 Williams University, Rhode Island School of Design, Raytheon, and the U.S. Navy base
22 in Newport. I am the customers’ primary point of contact for any inquiries or requests

1 related to National Grid electric or gas service, including those related to projects,
2 emergencies, and miscellaneous matters.

3 Q. Please describe your education, training and experience.

4 A. I graduated from New England Tech in 2002 with an Associates Degree in Computer
5 Technology and Network Administration. I received a Bachelor of Science in Electrical
6 Engineering with a minor in math and physics from the University of Rhode Island in
7 2006. In 2009, I received a Masters Degree in Science in Electrical and Computer
8 Engineering from Worcester Polytechnic Institute. I received an Executive MBA from
9 Suffolk University in 2012 and a Graduate Certificate in the Business of Energy from
10 Clarkson University in 2016.

11 I have worked for National Grid for 15 years and in that time completed various utility
12 related training courses and held various roles such as: Electric Design Engineering,
13 Electric Asset Strategy, Network Strategy Executive Advisor, Manager of Investment
14 Management and currently Principal Program Manager, Community & Customer
15 Management. I have been in Community & Customer Management for seven years.

16 Q. Are you familiar with National Grid's Portable LNG Vaporization Operation at Old Mill
17 Lane in Portsmouth, Rhode Island (the "Project")?

18 A. Yes.

19 Q. Please summarize your role on the Project.

20 A. I assist with communicating Project updates with municipal, police and fire officials. I
21 also assist with responding to any community and abutter inquiries regarding the Project.

22 Q. Are you familiar with National Grid's application dated May 19, 2021 (the

1 “Application”) that was submitted to the Rhode Island Energy Facility Siting Board (the
2 “Siting Board”) for approval of the Project?

3 A. Yes. I assisted the National Grid Team in providing information related to municipal,
4 community and abutter interactions, questions, concerns and recommendations regarding
5 the Project.

6 SCOPE OF TESTIMONY

7 Q. What is the scope of your testimony in this proceeding?

8 A. In my testimony, I will provide an overview of the outreach to the direct abutters to the
9 Project and specifically respond to the letter from Stephen and Lori MacDonald to the
10 EFSB dated August 23, 2021 regarding noise impacts.

11 OUTREACH

12 Q. Please summarize the outreach efforts you have been involved with concerning the recent
13 LNG operations at Old Mill Lane starting in 2018.

14 A. During each LNG Operation at Old Mill Lane, I provide information and Project updates
15 to municipal officials, coordinate site visits with fire officials, send notices to abutters
16 and residents, attend Town Council meetings and open houses, and respond to abutter
17 and resident questions.

18 Q. Have you met with the direct abutters to the Project?

19 A. Yes.

20 Q. Are you familiar with Stephen and Lori MacDonald?

21 A. Yes, they live at 124 Old Mill Lane, which is located across from the Project site.

22 Q. Have you met and discussed the Project with the MacDonalds?

1 A. Yes. I have corresponded with the MacDonalds since February 2020 via email and
2 telephone. The Operational Supervisor Nicholas Dube and I also met with the
3 MacDonalds in person on January 21, 2021.

4 Q. Are you familiar with the letter they submitted to the EFSB which is dated August 23,
5 2021?

6 A. Yes.

7 Q. Please summarize the discussion you had with the MacDonalds on the January 21 in-
8 person meeting.

9 A. The discussion focused on the winter operations at Old Mill Lane and centered around
10 their concerns with noise, fence/screening, and property maintenance (culvert area). Mr.
11 Dube described the source of the noises that the MacDonalds were hearing and explained
12 what modifications had already been completed and what additional steps the Company
13 was evaluating to potentially further reduce noise.

14 Q. What did you and Mr. Dube identify as the source of the noise heard by the MacDonalds?

15 A. Based on the MacDonalds' description, the noise was generated by the glycol vaporizer
16 cycling on and off to maintain the appropriate temperature and also by the venting of the
17 tanks.

18 Q. Please describe any changes that were made to the operation of the LNG facility
19 following your discussion with the MacDonalds.

20 A. Following the discussion, the Company was able to reduce the frequency of cycling of
21 the vaporizer during the evening hours of operation by adjusting the temperature settings.
22 At times, the vaporizer was turned off altogether during the evening and nighttime hours.

1 The ability to take those action, however, is dependent on the ambient conditions,
2 particularly the outdoor temperature and the wind, as the vaporizer temperature must be
3 maintained at a certain level in order for the system to be readily available in the event of
4 an outage. As noted in the McDonalds' letter, after we implemented these changes, there
5 were still a few evenings when the equipment operated at night. The cycling of the
6 equipment on those occasions was due to lower ambient temperatures.

7 The Company also discussed adding a vapor recovery system, which was under
8 development, to reduce the noise from venting the tanks. The system was completed at
9 the end of the winter 2021, and the Company is planning to utilize the vapor recovery
10 system this winter.

11 Q. Have you had any follow up discussions with the MacDonalDs?

12 A. Yes. We approached them this summer to review the solid fence that we are planning to
13 install along Old Mill Lane. They also contacted us to ask that we remove the portable
14 toilet from the front of the property, which we did. The MacDonalDs also complained to
15 the Division of Public Utilities and Carriers ("DPUC") this summer regarding noise
16 associated with the summer operation associated with maintenance activities on
17 Enbridge's transmission pipeline. Attached as Attachment A is the complaint and the
18 Company's response to the DPUC.

19 Q. Have you had any other Project related communications with abutters and residents along
20 Old Mill Lane?

21 A. Yes. Communication with the MacDonalDs regarding noise has been ongoing since
22 February 2020. The latest communication regarding noise involved the Enbridge 2021

1 pigging operation.

2 Communications from other neighbors were received in February 2020 and December
3 2020. We received an email from an Old Mill Lane neighbor on February 13, 2020
4 regarding light pollution and another email from the same neighbor on February 27, 2020
5 regarding a hissing noise.

6 I received notice of a complaint that had been submitted to the DPUC on December 10,
7 2020, from the owners of 136 Old Mill Lane regarding a noise and light complaint.

8 Q. Please summarize the adjustments made to the operation since the first winter
9 mobilization.

10 A. We made the following changes since the Winter of 2019-2020:

- 11 • Added electric service to remove the need for a generator for source of
12 primary power;
- 13 • Added shades to the lights to reduce the light pollution;
- 14 • Lowered the glycol vaporizer settings at night to reduce the nighttime
15 cycling of equipment and turned it off altogether when conditions allowed;
- 16 • Changed the hours and manner of venting to reduce noise; and
- 17 • Limited the number of lights on at night when the system is in standby.

18 In addition, for this winter we are adding the vapor recovery system to further reduce
19 noise associated with venting the storage tanks.

20 Q. Does that complete your testimony?

21 A. Yes.

From: [Blood, Andrea D.](#)
To: [Brisson, Audrey \(DPUC\)](#); [CSC Regulatory Northboro](#); [Moniz, Diana \(DPUC\)](#)
Subject: RE: EXT || FW: [EXTERNAL] : Complaint Filed
Attachments: [OldMillLane-Letter-to-abutters May 24 2021.docx](#)

Hi Audrey,

Attached is letter dated May 24, 2021, from N GRID Community and Customer Management RI, that was sent to the Old Mill Lane abutters advising them of work being performed by Algonquin Gas Transmission from June 2 - June 8, 2021. The letter contains National Grid contact information for any questions and concerns regarding work being done by NGRID.

Additional information from Community and Management RI is below:

Please note that across the street from 124 OLD MILL LN PORTSMOUTH RI 02871 are two separate properties: Take Station and NGRID Property.

The NGRID setup is behind a fenced area off the main road on the NGRID Property. Although NGRID trucks come and go at times from our property, we minimize the time we're impacting the area. We're also very aware of the abutters concerns with noise and work to minimize this as best we can.

This complaint is most likely related to the Algonquin work which is right at the Take Station. They don't have as much room as NGRID. It is not known if Algonquin sent any information to the abutters about the work being performed.

The MacDonalds have Mr. Afonso's contact information and he has spoken with them previously. The MacDonalds can contact him directly to provide additional information specific to NGRID work. NGRID is not able to address the Algonquin work being conducted.

It is anticipated that Algonquin will be done with their work next week which would then allow NGRID to remove our equipment shortly after.

Thanks,
Andrea

Andrea D. Blood
Senior Analyst
Office of the President
Nationalgrid
401 642 2253 voice
315 460 8714 fax
andrea.blood@nationalgrid.com

-----Original Message-----

From: Blood, Andrea D.
Sent: Friday, June 4, 2021 9:22 AM
To: [Brisson, Audrey \(DPUC\)](#) <Audrey.Brisson@dpuc.ri.gov>; [CSC Regulatory Northboro](#) <CSCRegulatoryNorthboro@nationalgrid.com>; [Moniz, Diana \(DPUC\)](#) <Diana.Moniz@dpuc.ri.gov>
Subject: RE: EXT || FW: [EXTERNAL] : Complaint Filed

Hi Audrey,

Let me see what I can find out.

Thanks,

Andrea

Andrea D. Blood
Senior Analyst
Office of the President
Nationalgrid
401 642 2253 voice
315 460 8714 fax
andrea.blood@nationalgrid.com

-----Original Message-----

From: Brisson, Audrey (DPUC) <Audrey.Brisson@dpuc.ri.gov>
Sent: Friday, June 4, 2021 8:18 AM
To: CSC Regulatory Northboro <CSCRegulatoryNorthboro@nationalgrid.com>; Moniz, Diana (DPUC) <Diana.Moniz@dpuc.ri.gov>
Subject: EXT || FW: [EXTERNAL] : Complaint Filed

-----Original Message-----

From: macdonalds6@cox.net <macdonalds6@cox.net>
Sent: Friday, June 4, 2021 6:46 AM
To: Moniz, Diana (DPUC) <Diana.Moniz@dpuc.ri.gov>; Brisson, Audrey (DPUC) <Audrey.Brisson@dpuc.ri.gov>; Bellows, Casey (DPUC) <Casey.Bellows@dpuc.ri.gov>
Subject: [EXTERNAL] : Complaint Filed

First Name: Lori

Last Name: MacDonald

Account:

Organization:

Street Address: 124 Old Mill Lane

Apartment:

City: Portsmouth

State: Rhode Island

Postal Code: 02871

Phone: 401-793-0582

Fax:

E-mail: macdonalds6@cox.net

Complaint Filed Against: macdonalds6@cox.net

Date and Time of Incident: June 4, 2021 6:30 am

Response Method: E-mail

Complaint: National Grid was moving loud heavy equipment (gas tankers, etc) at its Old Mill Lane site before 7 am. They are also blocking parts of the street creating a safety hazard. I understand routine maintenance however they are doing so way to early for a site located in a residential area. They have been doing this all week.

The Narragansett Electric Company
(Portable LNG Vaporization Project)
EFSB Docket No. SB-2021-04

Joint Testimony of:
Danil Lamriben and
Nicholas Dube

October 1, 2021

EXECUTIVE SUMMARY

The Narragansett Electric Company (“Company”) witnesses Danil Lamriben and Nicholas Dube provide an overview of the Portable LNG Vaporization Operation at Old Mill Lane in Portsmouth, Rhode Island (the “Project”). Mr. Lamriben is the Director of LNG Operation for National Grid USA Service Company and Mr. Dube is the Senior Supervisor of LNG Operation for the Company. Their joint testimony describes the overall operation of the Project. Specifically, Mr. Lamriben and Mr. Dube describe the leakage detection measures at the Project that contains a physical inspection and an automatic component. They also describe when and why sound is generated from the Project, the steps the Company has already taken to address sound concerns, and additional mitigation efforts that were reviewed by the Company. Mr. Lamriben and Mr. Dube also explain the challenges of implementing mitigation at the site.

1 INTRODUCTION (Lamriben)

2 Q. Please state your name and business address.

3 A. My name is Danil Lamriben. My business address is 121 Terminal Road, Providence,
4 Rhode Island.

5 Q. By whom are you employed and in what position?

6 A. I am employed by National Grid USA Service Company as its Director, LNG Operations
7 Rhode Island.

8 Q. What is National Grid USA Service Company?

9 A. National Grid USA Service Company (the “Service Company”) is a wholly owned
10 subsidiary of National Grid USA, an energy company specialized in the transmission and
11 distribution of electricity and natural gas. The Service Company provides administrative
12 and technical services (such as engineering, accounting and legal services) to the other
13 subsidiaries of National Grid USA, including The Narragansett Electric Company d/b/a
14 National Grid (“National Grid” or the “Company”).

15 Q. What are your responsibilities as Director of LNG Operations Rhode Island?

16 A. I direct and manage National Grid’s LNG facilities in Rhode Island to ensure the safe,
17 reliable and efficient production and delivery of vaporized liquefied natural gas while
18 complying with all applicable federal, state, and local codes and regulations.

19 Q. Please describe your education, training and experience.

20 A. I have a degree in Mechanical Engineering from Wentworth Institute of Technology. I
21 have 14 years combined LNG experience as an LNG
22 Operations/Maintenance/Engineering COOP Intern (SUEZ/Tractebel-Distrigas of

1 Mass. LLC), plant supervisor, regional lead engineer, and regional director (National
2 Grid).

3 Q. Are you familiar with National Grid’s Portable LNG Vaporization Operation at Old Mill
4 Lane in Portsmouth, Rhode Island (the “Project”)?

5 A. Yes.

6 Q. Please summarize your role on the Project.

7 A. I direct and manage the Project.

8 Q. Are you familiar with National Grid’s application dated May 19, 2021 (the
9 “Application”) that was submitted to the Rhode Island Energy Facility Siting Board (the
10 “Siting Board”) for approval of the Project?

11 A. Yes. I contributed input on the Application with respect to Project operation and site
12 improvements. I also provided testimony and answered questions related to the Project
13 operation during the May 18, 2021 Rhode Island Public Utilities Commission technical
14 session and the August 12, 2021 EFSB preliminary hearing.

15 INTRODUCTION (Dube)

16 Q. Please state your name and business address.

17 A. My name is Nicholas Dube. My business address is 53 South County Trail, Exeter,
18 Rhode Island 02822.

19 Q. By whom are you employed and in what position?

20 A. I am employed by National Grid as its Senior Supervisor LNG Operations.

21 Q. What are your responsibilities as Senior Supervisor LNG Operations?

1 A. I manage all aspects of operating and maintaining LNG facilities in RI including Exeter
2 LNG and Old Mill Lane Portable facilities.

3 Q. Please describe your education, training and experience.

4 A. I spent 6 years in the U.S. Navy as a Nuclear Operator followed by 11 years with Bechtel,
5 Exelon Nuclear, Dominion Nuclear and NextEra Energy performing Electric Utility and
6 Government Contract work (operations, maintenance, supervision). For the last year, I
7 have worked for National Grid as Senior Supervisor LNG Operations.

8 Q. Are you familiar with the Project?

9 A. Yes.

10 Q. Please summarize your role on the Project.

11 A. I manage the setup, mobilization and demobilization of the Project along with Winter
12 Operations and provide oversight of the contracted operating vendor.

13 Q. Are you familiar with the Application?

14 A. Yes, I provided input on equipment staging and setup, site improvements and equipment
15 operations.

16 SCOPE OF TESTIMONY

17 Q. What is the scope of your joint testimony in this proceeding?

18 A. Our testimony will provide details regarding the equipment used at the Project and the
19 overall operation of the Project, particularly with regard to leaks and noise and the
20 mitigation of noise related impacts.

21 TESTIMONY

22 Q. Please explain the equipment used for the Project.

1 A. The equipment consists of five LNG storage trailers, an LNG pump trailer, a glycol
2 vaporizer, an ambient vaporizer, an odorant trailer, an emergency generator and an office
3 trailer. The vaporizers convert the LNG from liquid to gas. The ambient vaporizer is a
4 heat exchanger that uses forced air to heat the liquid LNG. The glycol vaporizer is
5 essentially a boiler that transfers heat to the liquid LNG allowing it to change into a gas.
6 The glycol is mixed with the water because it lowers the freezing temperature.

7 Q. Please summarize how the Project operates.

8 A. For the seasonal operation, mats are arranged to provide a stable platform for the
9 equipment and a fence is installed to secure the site. The equipment is then delivered and
10 connected to the existing manifold. Once the equipment is connected, a third-party
11 vendor delivers LNG to the site by truck and transfers it into the LNG storage trailers.
12 While the equipment is in standby, the vaporizer periodically cycles on in order to
13 maintain a threshold temperature so that it is ready to be activated quickly in the case of
14 an outage. In addition, the storage trailers must occasionally be vented to maintain
15 proper pressure.

16 During the vaporization process, the LNG flows from the storage tank to the LNG pump
17 to the glycol vaporizer and then to the manifold which is the connection to the natural gas
18 distribution system. The ambient vaporizer is onsite as a backup to the glycol vaporizer.
19 The heated gas is odorized before it is injected into the natural gas distribution system.

20 Q. Are you familiar with the leak detection measures at the Project?

21 A. Yes. One measure is physical inspection. There is an operator on site around the clock
22 on a shift rotation. Equipment walkdowns are performed every shift to monitor the

1 equipment. Operators are trained on the LNG equipment and the operation and shutdown
2 process. In the event of a leak, the LNG equipment is outfitted with red shutdown
3 buttons to stop vaporization. Remote buttons are located on stanchions for manual
4 shutdown. Leak detection also occurs using automated systems. Trailers are equipped
5 with gas detection sensors that will trigger an automatic shutdown if a leak is detected.

6 Q. What is the most likely source of a leak?

7 A. The hose connections would be the most likely source of a leak, although this has never
8 happened on this site. To be clear, a leak is a release that results from a malfunction or
9 failure of the equipment. When filling the LNG tanks, there are limited releases that
10 occur when the hoses are removed from the delivery trucks. These releases are small and
11 do not pose a danger or hazard.

12 Q. In the past two winter mobilizations, have there been any leaks?

13 A. No, there have been no leaks.

14 Q. Is there an alarm that would be triggered by a leak?

15 A. Yes, the gas detection sensors have both a visual and audible alarm. Trailers are equipped
16 with gas detection sensors that will cause a shutdown when activated.

17 Q. How often is the system tested for leaks?

18 A. On site personnel perform a “walk down” of the systems prior to operation and during
19 equipment walk downs once per shift. During these walk downs, a portable gas detector
20 is used to test for leaks throughout the system and especially at hose connections while
21 operating.

22 Q. Are you familiar with the sound generated during the operation of the equipment?

1 A. Yes.

2 Q. When is sound generated?

3 A. Sound is generated when the system is vaporizing as certain equipment is running to
4 support the vaporization process. This includes the LNG pump trailer and glycol
5 vaporizer (or ambient vaporizer as a backup).

6 When the system is in standby, noise is only generated when the glycol vaporizer cycles
7 in order maintain water bath temperature (just like a boiler in a home). A target
8 temperature for the water bath is set on the vaporizer which ensures system availability in
9 the event it is called to operate. If the temperature is allowed to drop too low, it will take
10 an excessive amount of time to heat up which would delay the ability of the Project to
11 reliably backup the natural gas system.

12 Sound is also emitted when the LNG storage trailers require venting. Venting is
13 manually controlled and done during the daytime hours.

14 Q. On a normal winter day, how often is the equipment cycling and how long does the cycle
15 last?

16 A. Glycol vaporizer cycling is completely dependent on outside ambient conditions. Under
17 normal winter weather conditions the glycol vaporizer can cycle approximately every
18 four hours and last for approximately 30 minutes each cycle.

19 Q. Are you familiar with the letter from Stephen and Lori MacDonald to the EFSB dated
20 August 23, 2021?

21 A. Yes.

22 Q. Has the Company looked at ways to mitigate the noise impacts?

1 A. Yes, the Company has examined several potential noise mitigation measures and has
2 already implemented certain measures in an effort to reduce the noise impacts.

3 Q. What mitigation measures has the Company implemented and/or assessed?

4 A. The Company has implemented operational changes to reduce the frequency of
5 equipment cycling and is assessing the following additional noise mitigation measures:

- 6 • Reconfiguring the site and equipment layout;
- 7 • Installing sound barriers;
- 8 • Using quieter equipment; and
- 9 • Making improvements to the MacDonald's residence, like new windows, to
10 reduce the noise impact.

11 Q. Explain the operational changes and how they addressed the MacDonald's concerns?

12 A. The vaporizer is the noisiest piece of equipment used at the facility. The Company
13 adjusted the temperature settings on the vaporizer to reduce the frequency of the cycling.
14 Also, when conditions have allowed, specifically during milder temperature and wind
15 conditions, the Company has been limiting the cycling of the glycol vaporizer by turning
16 it off at night and back on in the morning. We cannot eliminate the cycling of the
17 vaporizer altogether, however, because during freezing overnight conditions, the
18 glycol/water bath temperature could drop too low and jeopardize the ability of the system
19 to respond quickly if needed.
20 We are also planning to reduce the noise from venting of the storage trailers by flowing
21 the vented gas into the distribution system.

22 Q. What options did the Company explore on the MacDonald's property?

1 A. The Company consulted with HDR Engineering, Inc. (“HDR”) regarding the possible
2 installation of new windows at the MacDonald’s home. HDR advised that new windows
3 would not be an effective noise mitigation measure.

4 Q. Would reconfiguring the layout help to reduce the noise impact?

5 A. HDR did advise that reconfiguring the equipment layout could potentially help to reduce
6 the noise impact. The current physical constraints of the site, however, make this option
7 unfeasible because of the space required to provide a clear route for the delivery trucks to
8 enter and exit the property. Expanding the footprint of the site could allow the Company
9 to reconfigure the equipment to achieve some sound mitigation.

10 Q. Can the Company install sound barriers?

11 A. Again, the size of the usable property does not allow for the installation of sound barriers.
12 To be effective, sound barriers must be installed in proximity to the equipment, and there
13 is not sufficient room in the existing footprint while still complying with the safety
14 requirements for the spacing of equipment. Expanding the footprint of the site could
15 potentially allow the Company to install sound barriers to achieve some sound mitigation.

16 Q. Could the Company utilize quieter equipment?

17 A. The equipment used at Old Mill Lane is supplied and operated by a third-party
18 contractor. The Company has asked Stabilis, its current vendor, whether quieter
19 equipment is available. Stabilis responded that it did not have quieter equipment and had
20 no plans to acquire such equipment. Thus, using quieter equipment is not an available
21 option to mitigate noise this winter. Going forward, the Company intends to include the
22 use of quieter equipment in its Requests for Proposals and to evaluate the bidders based

1 on their ability to use quieter equipment at the site.

2 Q. Does the ambient vaporizer require cycling like the glycol vaporizer?

3 A. No.

4 Q. Could the Company rely on the ambient vaporizer instead of the glycol vaporizer?

5 A. No. The ambient vaporizer does not support the higher flows required to backup the
6 distribution system. It is only there as a backup to the glycol vaporizer. It should also be
7 noted that based on noise tests, when the ambient vaporizer is in operation, it is the
8 loudest piece of equipment.

9 Q. Does that complete your testimony.

10 A. Yes.

The Narragansett Electric Company
(Portable LNG Vaporization Project)
EFSB Docket No. SB-2021-04

Testimony of:

Tim Casey

October 1, 2021

EXECUTIVE SUMMARY

The Narragansett Electric Company (“Company”) witness and Senior Environmental Scientist and Acoustics Program Manager at HDR Engineering, Inc., Tim Casey, provides an overview of the noise study and recommended mitigation options for the Portable LNG Vaporization Operation at Old Mill Lane in Portsmouth, Rhode Island (the “Project”) in his prefiled testimony. Mr. Casey explains that HDR has developed a 3-D noise model to estimate project-related noise levels off-site, and that the results suggest LNG facility-related noise has the potential to exceed the maximum allowable noise levels at some locations beyond the LNG facility property lines. Mr. Casey opines on various available noise mitigation measures including: (1) using quieter equipment; (2) rearranging the physical layout of the equipment on-site so that the loudest noise sources are furthest away from the abutters; and/or (3) installing a noise barrier close enough to the equipment to break the line of sight between noise sources and abutters; and (4) making improvements to butting residential buildings. Mr. Casey also notes the challenges of implementing each measure. Finally, Mr. Casey opines on the effectiveness of the new fence proposed along the front of the property.

1 INTRODUCTION

2 Q. Please state your name, employer, and business address.

3 A. My name is Tim Casey. I am employed by HDR Engineering, Inc. (“HDR”), a global
4 employee-owned technical consulting firm. My business address is 1601 Utica Avenue
5 South, Suite 600, St. Louis Park, Minnesota.

6 Q. What is your position at HDR?

7 A. I am a Senior Environmental Scientist, and the founder and leader of HDR’s acoustics
8 program.

9 Q. Please describe your education, training, and experience.

10 A. I earned a BS in biology in 1988, and completed graduate courses in environmental
11 engineering at Illinois Institute of Technology in Chicago, and also in environmental
12 health at University of Minnesota in Minneapolis. I started working for HDR in Chicago
13 in 1989 and have over three decades of experience in the field of environmental
14 acoustics. While with HDR in Chicago I learned how to use a sound level meter and
15 traffic noise modeling software. I also researched train noise modeling algorithms at
16 Northwestern University’s Transportation Engineering Library and wrote my first train
17 noise model for a railroad grade separation project.

18 Around 1991 I moved to Minneapolis to join HDR’s environmental group, where I
19 continued to do traffic noise analyses, environmental noise measurements, and began to
20 perform spreadsheet-based modeling of indoor and outdoor noise sources, to perform 24-
21 hour noise measurements, to process spectral sound pressure level measurement results,
22 etc. I subsequently created HDR’s Acoustics Program in response to the demand for that

1 specialty service. This led to me performing noise measurements and modeling across
2 the United States on a wide variety of surface transportation, industrial and infrastructure
3 projects including in the power, mining, and oil and gas sectors.

4 HDR's Acoustics Program now consists of several degreed acousticians including
5 scientists and engineers with BS and MS degrees in acoustics, engineering, physics, and
6 more. We work on acoustics, noise, and vibration analyses on a wide variety of projects
7 throughout the nation and beyond.

8 My notable career achievements include:

- 9 • Co-leading the analysis of freight train noise on 44,000 miles of track in every state
10 east of the Mississippi River (Conrail Acquisition EIS).
- 11 • Being recognized by FHWA as the first consultant to develop a user-defined vehicle
12 to model engine compression noise as a component of a traffic noise analysis using an
13 FHWA-approved traffic noise model (I-35 expansion project in Duluth MN).
- 14 • Conceiving and leading one of the most extensive measurement and modeling studies
15 of the Arctic summer and winter soundscape (Point Thomson EIS).
- 16 • Leading the development of the nation's first FAA-approved rocket launch noise
17 model written in 3D GIS.
- 18 • Performing a detailed noise study (measurements and modeling) in the Northern
19 Cascades National Park (Skagit Hydropower Relicensing) using National Park
20 Service methods.
- 21 • Providing expert witness testimony to the United States Surface Transportation Board
22 in Washington DC.

- 1 • Winning a national award for developing an innovative method for measuring tire-
2 pavement noise on interstate highway traffic.
- 3 • Being the Principal Investigator for a \$500k tire-pavement noise research project
4 funded by the National Academy of Science.
- 5 • Being selected to serve on the oversight committee for a transportation noise research
6 project funded by the National Academy of Science.
- 7 • Making a presentation about wind turbine noise at a conference in Aalborg, Denmark.
- 8 • Providing expert witness testimony on environmental noise issues in numerous states
9 throughout the nation.
- 10 • Being one of four national consultants selected by WashDOT to evaluate and make
11 mitigation recommendations to reduce tire-pavement noise on a double-decker bridge
12 in Seattle. Two of the three outcome recommendations were mine.
- 13 • Performing architectural acoustics measurements inside a new military headquarters
14 building at the US joint military base in Djibouti, on the Horn of Africa.

15 Q. What are your responsibilities as Acoustics Program Manager?

16 A. I lead a national team of consulting scientists and engineers who work in the field of
17 acoustics, I recruit and hire staff, serve as senior technical lead and technical consultant
18 on a wide variety of HDR projects, and am the driver for growth and technical excellence
19 for HDR's acoustics consulting practice. I manage the team of acousticians in
20 Minneapolis (HDR's primary acoustics group) and have direct supervisory
21 responsibilities over acousticians in Dallas, Texas and Vienna, Virginia. I write
22 proposals and budgets for our work, manage projects, work directly with clients and

1 HDR project managers, and contribute to local and national proposals and strategic
2 planning efforts. I perform noise and vibration analyses on a variety of project types in
3 locations throughout the nation. Occasionally I provide expert witness testimony on
4 topics related to my work in environmental acoustics.

5 Q. Are you familiar with National Grid's Portable LNG Vaporization Operation at Old Mill
6 Lane in Portsmouth, Rhode Island (the "Project")?

7 A. Yes.

8 SCOPE OF TESTIMONY

9 Q. What is the scope of your testimony in this proceeding?

10 A. In my testimony, I will provide an overview of the sound study of the Project performed
11 by HDR and summarize the recommended mitigation options for the Project.

12 TESTIMONY

13 Q. Please summarize the sound study you performed on the system.

14 A. HDR performed an unattended 24-hour measurement of the ambient soundscape at the
15 National Grid portable LNG facility in Portsmouth, RI. This means that a sound level
16 meter was set up on-site, and it stored measurement results for a continuous 24-hour
17 period without an HDR acoustician present to observe things that made noise during the
18 entire measurement duration. The sound level meter was locked inside a Pelican case,
19 which prevented anyone from tampering with it. HDR also measured the physical
20 dimensions and performed spectral measurements of noise emissions from that
21 equipment. HDR developed a 3D noise model to evaluate sound propagation off-site,
22 and also identified potential noise mitigation options to reduce portable LNG noise levels

1 off-site.

2 Q. Please summarize your findings.

3 A. The Portsmouth noise ordinance limits maximum allowable noise levels at residential
4 receiving lands to 65 dBA during daytime (7:00 am to 10:00 pm) and 55 dBA during
5 nighttime (10:00 pm to 7:00 am). The municipal noise limit does not specify a duration
6 for the maximum allowable noise level, therefore HDR evaluated instantaneous
7 maximum noise level measurement results.

8 Based on HDR measurements, the quietest daytime hour occurs around 10:00 pm
9 (22:00), and the loudest daytime hour occurs around 10:00 am. The loudest nighttime
10 hour occurred around 2:00 am, and the quietest nighttime hour occurs around 3:00 am.
11 Maximum instantaneous ambient noise levels exceeded the maximum allowable levels in
12 each hour throughout the 24-hour noise measurement. Noise from the portable LNG
13 facility and traffic noise were two of the notable contributors to overall measured noise
14 levels. HDR's review of 1-second measurement results suggested that insects and animals
15 (birds) also appear to have contributed to the measured noise levels.

16 HDR also developed a 3-D noise model to estimate project-related noise levels off-site,
17 and results suggest LNG facility-related noise has the potential to exceed the maximum
18 allowable noise levels at some locations outside beyond the LNG facility property lines.

19 Based on the knowledge we gained from our work, HDR identified a few potential
20 options for noise mitigation.

21 Q. What options are available for sound mitigation?

22 A. First you have to understand a few things about sound perception. It is highly subjective

1 because every person's ability to hear sounds throughout the frequency spectrum (low to
2 high frequencies) is different from everyone else's. It is generally accepted that a young
3 person with average undamaged hearing can generally perceive a three-decibel change
4 (increase/decrease) of noise under ideal listening conditions - like wearing headphones in
5 an audiology booth. A five-decibel change is considered clearly perceivable, and a ten-
6 decibel change would be perceived by that same person as a doubling or halving of noise
7 levels under the same conditions. So noise mitigation measures must provide at least 5
8 decibels of noise reduction to be noticeable.

9 HDR identified three potential noise mitigation measures for the National Grid site.

10 First, noise emissions could be reduced by using quieter equipment. Second, some noise
11 mitigation could be achieved by rearranging the physical layout of equipment on-site so
12 the loudest noise sources are not closest to the residences and to use some of the
13 equipment to block the sound propagation path of the noisier equipment. Finally, noise
14 control measures, described below, could be installed in the pathway that sound travels.
15 The feasibility of each option would depend on site constraints, operational and safety
16 concerns, and wind loading.

17 One potential option for noise control measures in the pathway would be the use of
18 industrial noise control blankets, which are a weather-resistant quilted product with a
19 layer of mass-loaded vinyl inside of it. The mass-loaded vinyl blocks noise and the
20 quilting absorbs noise. This option would require wrapping some of the major noise
21 sources with the noise control blankets, holding them in place by securing them to the
22 equipment itself, or in some instances some sort of framing. This option would also

1 require a fair amount of site-specific design to block noise emissions yet allow air to flow
2 in and out of the vaporizers and other intake and exhaust points. The framing would have
3 to be secured to the ground, so it didn't act like a kite when the wind is strong. The
4 framing might interfere with access to some of the equipment too.

5 Another option is the installation of a noise wall, which has the potential of reducing
6 project-related noise off-site by blocking the path in which sound travels. Sound travels
7 in waves, and if you break the line of sight between a noise source and a noise receiver
8 you also break the path of travel of the sound waves. When sound waves reach the top of
9 a noise wall they continue traveling in all directions and also refract downwards behind
10 the wall. In this manner, noise walls can create acoustical shadow zones behind them
11 where noise levels are quieter than on the front of the wall that faces the noise source.
12 The noise reduction provided by the wall is highest in portions of that shadow zone that
13 are closest to the wall itself.

14 Assuming the wall is near the noise source, the taller the wall the more noise reduction it
15 provides to areas farther away from the receiver side of the wall. To be effective, noise
16 walls have to be close to the equipment, and the top of the noise wall has to be higher
17 than the point at which it breaks the direct line of sight between the noise sources and
18 residences across the street.

19 Under ideal conditions – which means the wall is close to the noise source, and the
20 elevation of the ground at the source, wall and receiver is flat - breaking the direct line of
21 sight between a noise source and a noise receiver reduces noise levels by approximately
22 three decibels at the receiver. Each two feet of additional elevation of the top of the wall

1 provides approximately one additional decibel of noise reduction. So to achieve a
2 noticeable noise reduction, which is a minimum of five decibels, the top of the wall must
3 be at a height that is four feet above the direct line of sight between the noise sources and
4 noise receivers.

5 If the elevation of the noise receiver is higher than the noise source, the wall height must
6 be increased to achieve the same noise reduction that would occur on flat terrain. That
7 taller wall will experience additional wind loading, which creates additional engineering
8 challenges for the design of the wall footings and foundation. There may not be enough
9 room to install a noise wall of sufficient height, with sufficient structural footings, that
10 can also withstand wind loads on the site given the current configuration of equipment
11 and existing size of the site.

12 It is my understanding that National Grid is evaluating these potential noise mitigation
13 recommendations from an engineering, operations and safety perspective and may also be
14 looking at other options. National Grid has also authorized HDR to perform some
15 additional noise modeling because our initial modeling assumed all noise sources
16 operated simultaneously, which in fact they do not. Those modeling results were an
17 unrealistic over-prediction of noise emissions from typical operating conditions. The
18 additional noise modeling will simulate noise emissions from pieces of equipment that
19 actually operate simultaneously. In that regard, it will be a more realistic estimate of
20 project-related noise emissions off-site.

21 Q. Are there improvements that could be made to adjacent homes to help mitigate the
22 sound?

1 A. Potentially, in the form of upgraded, acoustically designed windows and storm doors with
2 higher noise reduction ratings than standard windows and storm doors. These require
3 architectural evaluations of individual homes, extensive acoustical measurements indoors
4 and outdoors, and also assume that doors and windows are the only acoustically weak
5 spots in the building exterior.

6 In reality, however, noise reduction is not one of the primary design goals in residential
7 building design and construction. So, while modern acoustically designed windows and
8 storm doors can provide more noise reduction than older standard windows and doors,
9 the rest of the exterior may not block enough sound. Also, even high-performing
10 acoustically designed windows provided limited noise reduction in the lowest frequency
11 bands (i.e. 31.5 Hz), and often the exteriors of homes also do not block much sound
12 power in those lowest frequency bands. As a result, installing new windows and doors
13 may not reduce indoor noise levels as effectively as applying noise mitigation measures
14 at the source or in the pathway on-site.

15 Q. Are you familiar with the new fence that is proposed for the front of the property?

16 A. Yes, National Grid provided me with some information from the manufacturer showing
17 an example of the type of product being considered. It is an eight-foot-tall product called
18 “Allegheny” manufactured by CertainTeed, a building material company that also makes
19 acoustical building products.

20 Q. Although it is not a noise wall, would you expect the solid fence to provide some sound
21 mitigation?

22 A. The proposed “Allegheny” noise wall is primarily a visual screen. HDR has not

1 specifically evaluated, analyzed, or modeled that wall to determine the potential noise
2 reduction it provides. If the wall is eight-feet tall it could provide measurable or
3 calculatable levels of noise reduction to receivers within approximately eight or ten feet
4 on the other side of the wall. The noise reduction may not be clearly perceivable at the
5 front of homes across the street, partly due to the topography – the elevation of homes
6 across the street is higher than the elevation of the LNG site. This elevation difference
7 would require a much taller noise wall, which introduces wind loading and structural
8 issues, etc.

9 Q. Does that complete your testimony?

10 A. Yes.