

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: INVENERGY THERMAL DEVELOPMENT LLC's :
APPLICATION TO CONSTRUCT THE : DOCKET No. SB-2015-06
CLEAR RIVER ENERGY CENTER IN :
BURRILLVILLE, RHODE ISLAND :

DIRECT TESTIMONY OF THOMAS B. HEVNER, P.E., L.S.P.
ON BEHALF OF THE TOWN OF BURRILLVILLE

1 **EXECUTIVE SUMMARY - TESTIMONY OF THOMAS B. HEVNER, P.E., L.S.P.**

2
3 **QUALIFICATIONS:** My name is Thomas B. Hevner, Jr. I am a Professional Engineer registered
4 in the State of Rhode Island with 23 years of experience in multi-faceted land development
5 projects involving environmental and civil engineering.
6

7 **PURPOSE OF TESTIMONY:** As part of the facility technical review team for the Town of
8 Burrillville, I am here to testify about process water supply to the proposed Clear River
9 Energy Center (CREC) plant, the siting of the proposed plant, the wetlands and wildlife
10 aspects of the proposed CREC, and the use and storage of hazardous materials proposed by
11 Invenergy at the proposed CREC.
12

13 **SUMMARY OF FINDINGS AND RECOMMENDATIONS:**

14 **Process Water Supply:** Based on the Clear River Energy Center Water Supply Plan submitted
15 by Invenergy to the EFSB on January 11, 2017, the current proposed source of process water
16 for the proposed CREC facility is from the Town of Johnston by tanker truck on a daily
17 basis under a long-term agreement. Since the proposed CREC facility was changed from a
18 water-cooled to an air-cooled facility, the daily demand for process water ranges from
19 15,840 gallons per day (gpd) to 18,720 gpd when the plant is fired with natural gas. When
20 the facility is firing oil the water demand increases to 724,320 gpd, over the past five years
21 there has been an average of five days per year when natural gas was not available for power
22 generation.
23

1 Assuming the Water Supply Agreement with the Town of Johnston withstands pending
2 legal challenges from the Town and the Conservation Law Foundation, it appears to be
3 adequate to supply the water needs for the CREC. The Johnston water is supplied by the
4 Providence Water Supply Board, a dependable source of water. However, the water supply
5 by truck appears to be a supply chain addition that may not be needed.

6
7 With the reduced process water demand of the project, the local water suppliers may have
8 adequate capacity to provide water to the CREC. A local water supply could be piped to
9 the site, eliminating the adverse impacts of trucking water to the site. A pipeline is still the
10 preferable method to deliver process water to the proposed CREC facility.

11
12 With the reduced process water demand for the project, and the proposed siting of an on-
13 site water supply well, subsurface conditions should be evaluated to provide both process
14 and potable water to the facility from an on-site source.

15
16 Depending on the proposed source, future proposals for process water may be subject to
17 review by Rhode Island Department of Environmental Management (RIDEM) and/or
18 Rhode Island Department of Health.

1 Also, an evaluation should be conducted to demonstrate how traffic impact could be
2 minimized during the initial water and oil storage filling events. The proposed water storage
3 at the CREC facility is 2,250,000 gallons and the proposed oil storage is 2,000,000 gallons.
4

5 **Siting/Environmental Impact Statement:** In an Environmental Impact Statement (EIS)
6 performed for the Ocean State Power Plant in 1988, the property proposed for the CREC
7 facility, then referred to as the Buck Hill Road property, was eliminated from consideration
8 for the siting of the Ocean State Power Plant. The elimination was based on traffic, costs for
9 a cooling water pipeline, and land use incompatibility.

10
11 In 2015, the adjoining Burrillville Compressor Station was incorporated into an EIS for a
12 regional Algonquin facility upgrade. It was identified that the noise levels were not in
13 conformance with the federal permit and that noise monitoring would be required post
14 construction.

15
16 The heart of an EIS is the alternatives analysis to ensure that the best site is being chosen to
17 minimize impact to people and the environment. The current CREC facility configuration
18 for the proposed 67-acre parcel is tight and involves adverse impacts on wetlands and
19 wildlife. In my professional opinion, an EIS should be conducted to ensure that all efforts
20 have been made to select the best site that will minimize negative impacts to people and the
21 environment prior to any permit being issued for CREC.
22

1 **Use and Storage of Hazardous Materials:** The proposed CREC facility will store and utilize at
2 least three hazardous materials: (1) 19% aqueous ammonia to control air pollutant emissions,
3 (2) compressed hydrogen used to cool generators at the facility, and (3) fuel oil stored in two
4 (2) one-million gallon aboveground storage tanks. There will also be storage and use of
5 hazardous waste at the proposed CREC facility.

6
7 Based on my evaluations, this proposed plant presents unacceptable risks of harm to the
8 environment and it should not be approved by the EFSB. However, if it is approved, there
9 are several protective measures that should be implemented by the EFSB as a permit
10 condition at the proposed CREC facility. The facility is subject to the EPA General Duty
11 Clause and although technically not required, I recommend that an U.S. Environmental
12 Protection Agency Risk Management Plan (RMP) should be a permit condition from EFSB.
13 The impact model inputs from a recent calculation must be updated by Invenergy to satisfy
14 RIDOH. Invenergy must train personnel and establish written procedures for the use and
15 storage of hazardous materials at the facility. Since the proposed CREC facility will have
16 over 1,320 gallons of aboveground petroleum storage at the facility, a Spill Prevention
17 Containment and Countermeasure (SPCC) Plan must be implemented in accordance with 40
18 CFR 112. An evaluation for the performance of a Facility Response Plan (FRP) should also
19 be undertaken as the project advances. A contingency source should be provided for
20 extended operation on fuel oil during the winter months when the on-site fuel oil storage will
21 be exhausted.

1 **Q. Please State your name and business address.**

2 A. My name is Thomas B. Hevner, Jr. My business address is 248 Copeland Street, Quincy,
3 MA 02169.

4

5 **Q. Mr. Hevner, by whom are you currently employed and in what capacity?**

6 A. I am employed by Alares, LLC as the Vice President of the Environmental Division. Alares
7 was contracted by CDR Maguire to review the environmental aspects of the proposed Clear
8 River Energy Center (CREC). CDR Maguire was contracted by the Town of Burrillville to
9 conduct a technical review of the proposed CREC.

10

11 **Q. Please describe your qualifications.**

12 A. I received a Bachelor of Science in Environmental Science with a focus in geology and
13 chemistry from Bridgewater State College in 1993. I received a Master of Science Degree
14 in Civil and Environmental Engineering in 2000 from Northeastern University. I am a
15 registered Professional Engineer in the State of Rhode Island (#11597 – 2015) as well as in
16 the Commonwealth of Massachusetts (#41789 – 2001), the State of Connecticut (#23575 –
17 2003), and the U.S. Virgin Islands (#614C – 2003). I am accredited with the National
18 Council of Examiners for Engineering and Surveying (NCEES - #64149 – 2015)) as a
19 Professional Engineer. I am registered as a Licensed Site Professional in the Commonwealth
20 of Massachusetts (#3635 – 2001). I have been involved in environmental engineering,
21 environmental science, civil, and geotechnical projects in New England and the U.S. Virgin
22 Islands for over 23 years. My resume was filed with the EFSB on September 9, 2016.

23

24 **Q. What are your technical specialties?**

1 A. My primary responsibilities are horizontal design and permit services for federal, state,
2 municipal, and private sector clients. Horizontal design and permit services include
3 environmental investigation and remediation, risk assessments, hydrogeologic evaluations,
4 water supply engineering for groundwater sources, environmental compliance and permits,
5 landfill and solid waste engineering, geotechnical engineering, and civil engineering.

6

7 **Q. Have you ever testified as an expert witness before any court or administrative body?**
8 **If so, what was the nature of your testimony?**

9 A. During the last 15 years, I have testified before planning boards, conservation commissions,
10 and state environmental regulatory agencies in a variety of communities in Rhode Island,
11 Massachusetts, and the U.S. Virgin Islands. These appearances have mostly been in both
12 peer review or design presentation roles on behalf of public and private sector clients. I
13 testified twice in 2006 and 2008 to U.S. EPA Region 2 (Air, Water, and RCRA¹) on behalf
14 of the U.S. Virgin Islands Waste Management Authority concerning the status of solid waste
15 facility compliance initiatives as well as proposed Waste to Energy Facilities on St. Croix
16 and St. Thomas.

17

18 **Q. What is the purpose of your testimony today?**

19 A. I am here to testify about process water supply to the proposed CREC plant, the siting of the
20 proposed plant, and the use and storage of hazardous materials proposed by Invenergy at the
21 proposed CREC.

22

¹ RCRA - Resource Conservation and Recovery Act

1 **Q. What materials have you reviewed in this matter?**

2 A. I have reviewed the “Rhode Island Energy Facility Siting Board Application for the Clear
3 River Energy Center in Burrillville, RI” prepared by ESS on October 28, 2016. I have also
4 reviewed various other documents available through the EFSB website for the CREC. Those
5 include the Advisory Opinions issued by the Rhode Island Department of Health (RIDOH),
6 the Rhode Island Department of Environmental Management (RIDEM), Statewide Planning,
7 and the Pascoag Utility District (PUD). I have also reviewed the petition from Burrillville
8 Land Trust to US EPA Region 1 asking the EPA to conduct an Environmental Impact
9 Statement for the CREC. I have reviewed many data responses filed on behalf of CREC and
10 I listened to testimony by CREC witnesses at the Planning Board hearings. I have reviewed
11 the Clear River Energy Center Water Supply Plan submitted by Invenergy to the EFSB on
12 January 11, 2017. I have reviewed the Environmental Impact Statements (EIS) that were
13 prepared for the Ocean State Power Plant in 1988 and the Algonquin Incremental Market
14 (AIM) Project in 2015.

15
16 **WATER**

17
18 **Q. Please summarize your evaluation of the supply of process water for the proposed**
19 **CREC.**

20 A. Based on the Clear River Energy Center Water Supply Plan submitted by Invenergy to the
21 EFSB on January 11, 2017, Invenergy is proposing a water reducing process that will reduce
22 the demand for process water. Invenergy is estimating the water demand will range from
23 15,840 gpd to 18,720 gpd when the plant is fired with natural gas. When the facility is firing

1 oil the water demand increases to 724,320 gpd. Over the past five years, there has been an
2 average of five days per year when natural gas was not available for power generation.

3
4 Assuming the Water Supply Agreement with the Town of Johnston withstands pending legal
5 challenges from the Town and the Conservation Law Foundation, it appears to be adequate
6 to supply the water needs for the CREC. The Johnston water is supplied by the Providence
7 Water Supply Board a dependable source of water. However, the water supply by truck
8 appears to be a supply chain addition that may not be needed.

9
10 With the reduced process water demand of the project, the local water suppliers may have
11 adequate capacity to provide water to the CREC. A local water supply could be piped to the
12 site, eliminating the impacts of trucking water to the site. A pipeline is still the preferable
13 method to deliver process water to the proposed CREC facility.

14
15 With the reduced process water demand for the project and the proposed siting of an on-Site
16 water supply well, subsurface conditions should be evaluated to provide both process and
17 potable water to the facility from an on-site source.

18
19 Depending on the proposed source, future proposals for process water may be subject to
20 review by Rhode Island Department of Environmental Management (RIDEM) and/or
21 Rhode Island Department of Health.

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Q. What is your opinion for the associated truck traffic for the delivery of process water to the proposed CREC facility?

A. Under normal operating conditions, the water truck traffic will be light at two to three 8,000-gallon water trucks per day. However, during oil fired events, there will be significant usage of stored fuel oil and water stored at the CREC facility. Although the oil-fired events are statistically short term in duration, approximately 22 trucks per day will be required to transport water, fuel oil, ammonia, and wastewater. It is likely that the winter weather conditions during these oil-fired events will be challenging.

An evaluation should be conducted to demonstrate how traffic impact could be minimized during the initial water and oil storage filling events. The proposed water storage at the CREC facility is 2,250,000 gallons and the proposed oil storage is 2,000,000 gallons.

SITING/EIS

Q. Please summarize your evaluation of the 1988 Ocean State Power Environmental Impact Statement.

A. An EIS was conducted for the Ocean State Power (OSP) Plan in 1988. Twelve properties were considered for the siting of the proposed Ocean State Power Plant. One of them was the property now being proposed for the CREC facility. In the 1988 OSP EIS, the property proposed for the proposed CREC facility is referred to as the Buck Hill Road property. Twelve properties were evaluated for siting the proposed OSP, and then narrowed to three

1 properties - Sherman Farm Road, Bryant College, and Ironstone. The Buck Hill Road
2 property was not one of those properties.

3
4 Issues cited in the OSP EIS for the Buck Hill Road property included traffic, costs for a
5 cooling water pipeline, and land use incompatibility.

6
7 Citing from the 1988 OSP EIS, the Buck Hill Road site, for example, is adjacent to two-lane
8 rural roads. The roads are narrow and have numerous curves, but fortunately are not heavily
9 used and could support the traffic generated by the plant. However, local residents would be
10 aware of the increased traffic. Another reference was that Buck Hill Road was a rural, poor
11 quality two lane road, virtually untraveled, an access road into the site would be necessary,
12 and residences would have to be passed to access the site.

13
14 From a land use compatibility perspective, the Buck Hill Road site is in a rural area, even
15 more sparsely settled than the area near the Halfway House site. In addition, the site is
16 adjacent to the Pulaski State Park. The OSP EIS concluded that a power plant on the Buck
17 Hill Road site would be inconsistent and incompatible with the recreational activities
18 available at the park.

19
20 **Q. Please summarize your evaluation of the 2015 Algonquin Incremental Market (AIM)**
21 **Project Environmental Impact Statement.**

22 A. A final EIS was issued for the Algonquin Incremental Market Project (AIM Project) in 2015.
23 The EIS was performed by the staff of the Federal Energy Regulatory Commission (FERC).

1 Algonquin Gas Transmission, LLC (Algonquin) was requesting authorization to expand its
2 existing pipeline system from an interconnection at Ramapo, New York to deliver up to
3 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode
4 Island, and Massachusetts markets.

5
6 The proposed work for the Burrillville Compressor Station included the installation of a new
7 compressor unit with gas cooling, restaging and repipe a single existing compressor unit,
8 installing a new water heater, and installing a new emergency generator. A total of 15,900
9 HP would be added to the Burrillville Compressor Station. It was projected that the project
10 would impact approximately 16.7 acres of land, mainly clearing for construction equipment
11 lay down/storage areas, and approximately 76 people would be required to complete the
12 upgrade work. The final EIS noted potential visual impacts in residential and rural areas due
13 to installation of new power poles and the route would cross 9 streams and 9 wetland areas.
14 Pipeline upgrade work, included for other areas of the AIM Project were not included for the
15 Burrillville Compressor Station.

16
17 The final EIS included evaluations of geologic setting, contaminated soils, state designated
18 aquifers, vernal pools, vegetation, endangered species, socioeconomic impact, cultural
19 resources, air quality and noise for the Burrillville Compressor Station upgrade project.

20
21 An acoustical survey was completed for the Burrillville Compressor Station in 2014. The
22 nearest noise sensitive areas (NSAs) are both permanent and non-permanent (i.e., vacation)
23 residences. Algonquin identified the distance and direction to two of the nearest NSAs

1 (representing multiple residences) from the nearest existing or proposed compressor
2 building. It was noted that a group of residences are located north of the existing compressor
3 building, represented by the closest NSA at 3,320 feet from the facility, and a group of
4 residences west of the proposed new compressor building, represented by the closest NSA
5 at 3,610 feet from the facility. These NSAs were included in the final EIS analysis. Also,
6 existing noise levels exceed the 55 dBA day-night sound level (Ldn) criterion at one NSA;
7 however, three of the five existing compressor units at this station were authorized prior to
8 implementation of noise standards.

9
10 Because existing noise levels are above 55 dBA Ldn, Algonquin, at the time, was still
11 completing the final compressor station designs, and to ensure that the noise control measures
12 used are properly implemented at the Southeast, Cromwell, and Burrillville Compressor
13 Stations, the following recommendations were presented in the final EIS.

14
15 Algonquin should file noise surveys with the Secretary of the Energy Commission
16 (Secretary) no later than 60 days after placing the authorized units at the Southeast,
17 Cromwell, and Burrillville Compressor Stations in service. If a full load condition noise
18 survey of the entire station is not possible, Algonquin should file an interim survey at the
19 maximum possible horsepower load and file the full load surveys within 6 months. If the
20 noise attributable to the operation of the modified compressor station at full or interim power
21 load conditions exceeds existing noise levels at any nearby NSAs that are currently at or
22 above an Ldn of 55 dBA, or exceeds 55 dBA Ldn at any nearby NSAs that are currently
23 below 55 dBA Ldn, Algonquin should file a report on what changes are needed and should

1 install the additional noise controls to meet the level within 1 year of the in-service date.
2 Algonquin should confirm compliance with the above requirement by filing a second noise
3 survey with the Secretary no later than 60 days after it installs the additional noise controls.
4

5 **Q. Has anyone requested that an Environmental Impact Statement (EIS) be performed**
6 **prior to the construction of the proposed CREC facility?**

7 A. Yes. The Burrillville Land Trust (not affiliated with the Town of Burrillville) submitted a
8 request to the U.S. Environmental Protection Agency on March 7, 2016 requesting that an
9 EIS be conducted for the project.
10

11 **Q. What is your opinion regarding the performance of an EIS for the proposed CREC**
12 **facility?**

13 A. In the 1988 EIS, the property proposed for the CREC facility, then referred to as the Buck
14 Hill Road property, was eliminated from consideration for the siting of the Ocean State
15 Power (OSP) Plant. The elimination was based on traffic, costs for a cooling water pipeline,
16 and land use incompatibility.
17

18 In 2015, the adjoining property, the Burrillville Compressor Station, was incorporated into
19 an EIS for a regional Algonquin facility upgrade. It was identified that the noise levels were
20 not in conformance with the permit and that noise monitoring would be required post
21 construction.
22

1 The heart of an EIS is the alternatives analysis to ensure that the best site is being chosen to
2 minimize impact to people and the environment. The current CREC facility configuration
3 for the proposed 67-acre parcel is tight and involves adverse wetlands and wildlife impacts.
4 It is my professional opinion that an EIS should be conducted to ensure that all efforts have
5 been made to select the best site that will minimize negative impacts to people and the
6 environment before any permit is issued to CREC for the proposed site.

7
8 **HAZARDOUS MATERIALS**

9
10 **Q. Please summarize your evaluation of the use and storage of hazardous materials as they**
11 **pertain to the proposed CREC facility.**

12 **A.** The proposed CREC facility will store and utilize at least three hazardous materials: (1) 19%
13 aqueous ammonia to control air pollutant emissions, (2) compressed hydrogen used to cool
14 generators at the facility, and (3) fuel oil stored in two (2) one-million gallon aboveground
15 storage tanks. There will also be storage and use of hazardous waste at the proposed CREC
16 facility. There are also potential releases and catastrophic events involving natural gas at the
17 facility or in the pipeline and related infrastructure in the vicinity of the facility.

18
19 (1) *19% Aqueous Ammonia:* Aqueous ammonia for the gas turbine selective catalytic
20 reduction (“SCR”) systems, needed to reduce air emissions, will be stored at 19%
21 concentration in a 27,000-gallon aboveground storage tank. The EPA requires facilities that
22 store 10,000 pounds or more of aqueous ammonia which is stored at a concentration of 20%
23 or greater to conduct an off-site consequence analysis and prepare a Risk Management Plan

1 (RMP) to prevent and mitigate the consequences of possible accidental releases. The RMP
2 does not apply to aqueous ammonia stored at a concentration of less than 20%.

3
4 The Facility will not technically be subject to the RMP requirements, but will be subject to
5 the EPA's General Duty Clause, which requires facilities to assess hazards, prevent
6 accidental releases, and minimize the consequences of any releases which occur. Consistent
7 with the General Duty Clause and as part of an August 9, 2016 response to the July 2016
8 draft RIDOH Advisory Opinion, Invenergy proposed the following provisions to ensure the
9 safe storage of aqueous ammonia on-site, and to minimize the consequences in the unlikely
10 event that an accidental ammonia release were to occur:

- 11 • The ammonia storage tank and its associated transfer pumps and piping will be
12 enclosed within a concrete containment area designed to contain up to 110% of
13 the capacity of the storage tank.
- 14 • The containment area will be filled with a passive evaporative control system
15 designed to reduce the exposed surface area of any ammonia within the
16 containment system by at least 90%.
- 17 • The containment area will be equipped with ammonia sensors to alert Facility
18 operators of any system leaks.
- 19 • Procedures will be established and documented for the periodic maintenance,
20 inspection and testing of the containment area, the leak detection system, and
21 the evaporative control system.

- 1 • Emergency procedures will be established and documented, including the
2 training of staff in the procedures and the proper use of the personal protective
3 equipment which would be required during a release.
- 4 • Invenergy will coordinate with local emergency responders and the nearest
5 hazardous materials response team to establish emergency procedures in the
6 unlikely event of a release of ammonia from the Facility.

7

8 Although the CREC is not technically subject the Risk Management Program, as part of an
9 August 9, 2016 response to the July 2016 draft RIDOH Advisory Opinion, Invenergy
10 evaluated a worst-case accidental release scenario to assess the potential consequences in the
11 “extremely unlikely” event of a release of the full 40,000 gallons of 19% aqueous ammonia
12 into the containment area. This assessment was performed using the Area Locations of
13 Hazardous Atmospheres (“ALOHA”) Model developed by the EPA and the National
14 Oceanic and Atmospheric Administration and included as a prescribed technique under the
15 Risk Management Program. Invenergy stated that this “impact model” analysis was
16 completed in accordance with the procedures contained in the EPA’s “Risk Management
17 Program Guidance for Offsite Consequence Analysis”.

18

19 Invenergy claimed that the result of the ALOHA analysis was that the in-air ammonia
20 concentrations in all areas beyond the Spectra site during a worst-case accidental release
21 would be below the federal exposure levels, thus resulting in no adverse health effects upon
22 exposure by proximally located residents.

1 However, on September 12, 2016, RIDOH issued a final Advisory Opinion to the EFSB that
2 included a review of the ALOHA information presented above. RIDOH’s opinion was that
3 some of the model inputs used in the ALOHA analysis were inappropriate, and as a result,
4 the distances to the toxic endpoints were substantially underestimated, and using reasonable
5 assumptions, nearby residents could be adversely affected by an ammonia release.

6
7 (2) ***Hydrogen Tubes.*** The unit generators at the facility will use gaseous hydrogen for
8 cooling and heat rejection. Truck trailer mounted hydrogen tube racks will be used for on-
9 site hydrogen storage and makeup to the generators. The storage and use of hydrogen tubes
10 at the proposed CREC facility would be subject to the provisions of the EPA “General Duty
11 Clause.”

12
13 (3) ***Fuel Oil Storage.*** Two one-million gallon tanks are proposed for the storage of
14 fuel oil at the facility. During the winter months, the elevated demand for natural gas may
15 require that the plant be operated on fuel oil. Since the above groundwater storage of fuel
16 oil at the facility is greater than 1,320 gallons, the storage and use of fuel oil at the proposed
17 CREC facility is subject to the Spill Prevention, Containment, and Countermeasure (SPCC)
18 Plan regulations as specified in 40 CFR 112. As part of the Response to the 15th Set of Data
19 Requests issued on August 19, 2016, Invenergy did include a draft SPCC plan as an attached
20 exhibit. The draft was generic in nature based on the level of design currently undertaken by
21 Invenergy and would need to be enhanced if the project advances.

1 An evaluation for the implementation of a Facility Response Plan (FRP) should also be
2 undertaken if the project advances. Even though oil is not being transferred over water, as
3 presented in 40 CFR 40 - Attachment C-1 – Flowchart of Criteria for Substantial Harm, the
4 location of the proposed facility needs to be evaluated to determine if there would be adverse
5 impacts to fish, wildlife, and sensitive environments by a release from either one or both of
6 the proposed one-million gallon fuel oil aboveground storage tanks.

7
8 A contingency source should be provided for extended operation on fuel oil during the winter
9 months when the on-site fuel oil storage will be exhausted. In the Response to the 4th data
10 request issued by Invenergy on April 27, 2016, it was projected that the proposed 2 million
11 gallons of fuel oil would be exhausted in 72 hours of extreme winter condition operation.
12 This is a projected hourly use of 27,800 gallons of fuel oil and maintaining that capability
13 beyond 72 hours would require approximately four 8,000-gallon tanker trucks to deliver fuel
14 oil to the facility every hour. Based on the potential hazards associated with these transports
15 during extreme conditions in winter months, Invenergy should consider the construction of
16 a fuel oil pipeline similar to the one that was constructed for Ocean State Power in
17 Burrillville.

18
19 **Q. What is your opinion of EFSB requiring Invenergy to implement a RMP at the**
20 **proposed CREC facility?**

21 **A.** Although technically not subject to the RMP requirements, in the August 9, 2016 response
22 to the RIDOH Advisory Opinion Invenergy proposed to conduct a facility-wide “RMP-like”
23 hazard analysis to ensure full compliance with the General Duty Clause. This assessment

1 would include the ammonia, hydrogen tubes, and fuel oil storage and delivery systems, the
2 storage and transportation of hazardous waste generated at the facility, and the transport and
3 use of natural gas at the facility or in the pipeline or related infrastructure.

4
5 It is my opinion that Invenergy should conduct a full RMP, not just an “RMP-like” analysis.
6 I recommend that the EFSB require Invenergy to do so.

7
8 **Q. What are your recommendations and requested EFSB-required conditions for the**
9 **storage and use of hazardous materials at the proposed CREC facility?**

10 A. I am of the opinion that the proposed CREC facility presents an unreasonable risk of harm
11 to the environment and should not be permitted by the EFSB. However, if it is permitted:

12
13 (1) A Risk Management Plan (RMP) should be a permit condition from EFSB.

14
15 (2) The ALOHA model inputs must be updated to satisfy RIDOH.

16
17 (3) The EFSB should require, as a permit condition, that Invenergy will work with local
18 emergency responders to establish emergency procedures in the event that there is an
19 accidental release of ammonia or another hazardous material from the facility.

20
21 (4) The EFSB should require, as a permit condition, that Invenergy must establish written
22 procedures for the periodic inspection, testing, and maintenance of all equipment, controls,
23 and sensors related to the storage and use of hydrogen at the facility. All staff involved with

1 the storage, transfer and use of hydrogen must be provided with the appropriate training and
2 procedures necessary to ensure the safe maintenance and operation of the hydrogen system,
3 including emergency procedures. Periodic refresher training of this training must be provided
4 to the relevant staff.

5
6 (5) Since the proposed CREC facility will have over 1,320 gallons of aboveground
7 petroleum storage at the facility, a Spill Prevention Containment and Countermeasure
8 (SPCC) Plan must be implemented in accordance with 40 CFR 112. An evaluation for the
9 performance of a Facility Response Plan (FRP) should also be undertaken if the project
10 advances.

11
12 **Q. Are the opinions you have expressed in your testimony based upon your education,**
13 **training, experience and the materials you have reviewed to prepare for this testimony,**
14 **and are those opinions all based upon a reasonable degree of certainty or probability**
15 **in your fields of expertise?**

16 A. Yes.

17
18 **Q. Does this conclude your testimony?**

19 A. Yes.