

October 13, 2017

Via Federal Express/Electronic Mail

Todd Anthony Bianco, EFSB Coordinator
RI Energy Facilities Siting Board
89 Jefferson Blvd.
Warwick, RI 02888

Re: Invenergy Docket No. SB-2015-06

Dear Mr. Bianco:

On behalf of Invenergy Thermal Development LLC and the Clear River Energy Center Project ("Invenergy"), enclosed please find an original and three (3) copies of Invenergy's Responses to the Town of Burrillville's 39th Set of Data Requests.

Please let me know if you have any questions.

Very truly yours,



ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-1 During a weather or other emergency event whereby the power plant loses its electric or primary power source, what measures are in place to keep the plant running, to insure general safety for plant employees and the general public, and to insure that hazardous materials and supplies on site will be contained? How long will these measures keep the plant running and/or maintain safety protocols?

Response 39-1 The source of primary power to the Clear River Energy Center ("CREC" or "Facility") is the electrical interconnection to National Grid, through which power is also exported from the Facility. CREC will be equipped with automated systems to ensure safe shutdown and protection of the plant equipment in the event of a loss of this connection. This includes battery powered back-up electrical systems for maintaining power to the plant control systems and an emergency diesel generator to power other critical plant equipment. The systems will be designed to maintain the function and integrity of all plant safety and protection systems during shutdown events. All plant systems will be designed so that a safe standby condition is achieved and maintained once a shutdown is completed and no hazards or loss of containment of hazardous materials result from a shutdown.

The emergency diesel generator and battery back-up systems will be able to operate significantly longer than the time required to safely shutdown the CREC generating units. The emergency diesel generator will continue to operate to provide power to the Facility, as needed. The design of the diesel generator will support refueling during operation and thus allow the diesel generator to operate for an indefinite period of time.

RESPONDENT: Mark Wiitanen, HDR, Inc.

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-2 If standby generators or other equipment is to be used to provide emergency power and/or to insure that safety protocols are maintained, are the emissions from such equipment incorporated into permit applications and submissions required to permit this project?

Response 39-2 The emissions from the proposed project emergency generator have been incorporated into all permit applications and submissions required to permit this project which address project emissions, including the Major Source Air Permit Application and Invenergy Thermal Development LLC's ("Invenergy's") Energy Facility Siting Board Application.

RESPONDENT: Michael Feinblatt, ESS Group, Inc.

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-3 Does Invenergy or any of its related companies or subsidiaries operate a so-called "dry cooled" plant of the size and scope of the CREC project in Burrillville? If so, where are those plants located?

Response 39-3 The only other dry cooled plant in Invenergy's fleet is Lackawanna Energy Center ("LEC"), which is under construction in Lackawanna County, PA. LEC is a 1,500 MW project using the same technology as CREC in a three by three configuration.

RESPONDENT: John Niland, Invenergy Thermal Development LLC

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-4 Are water tanker trucks normally filled to capacity? For instance, will a tanker truck of 8,000 gallons actually carry 8,000 gallons of water, or will it be less? Does that calculation remain the same for winter and freezing conditions?

Response 39-4 The trucks are normally filled to capacity with no adjustments for seasonal conditions.

RESPONDENT: John Niland, Invenergy Thermal Development LLC

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-5 During drought conditions, and when water bans or restrictions are implemented by water producing entities, how will CREC procure water to supply the needs of the plant — both in normal operating conditions and when running on fossil fuel oil?

Response 39-5 CREC's proposed design for heat rejection and for sourcing its water supply is more resilient to the potential impacts of a drought than any other electric generating facility in New England.

- CREC has chosen to rely on a dry cooling system to reject waste heat from the Facility to reduce the Facility's overall water use. As compared to any other existing electric generating facility in New England employing a wet recirculating cooling tower, many of which require millions of gallons of water per day, electric generating facilities employing dry cooling are less susceptible to impacts on their operation as a result of a local or regional drought, due to their lower water demand.
- CREC's water supply plan has been developed to rely on trucking of water from primary and contingent water suppliers, all of whom can provide the Facility's daily water supply requirements. As a result, CREC, un-like other existing electric generating facilities located in New England, is not tied by pipeline to only one source of water which might be subject to use restrictions resulting from a local or regional drought. CREC by its reliance on a trucked water supply plan can determine which of the many water suppliers to the Facility are those that are least impacted by a drought and adjust its water sourcing to meet the water supply needs of the Facility and to reduce reliance on those water suppliers most impacted by the drought.
- CREC's primary water supplier is the Town of Johnston which secures its water supply from the Providence Water System. The Providence Water System has significant storage within the Scituate Reservoir making this water supply the least susceptible water supply in Rhode Island to impacts from either a local or regional drought. A comparison of the annual water supply requirements of CREC (Figure 2.3 of the CREC Water Supply Plan, dated January 11, 2017) to the Safe Yield water supply of the Providence Water Supply system found that CREC's total projected annual water use (allowing for up to 90 days of evaporative cooling at 8 hours per day) would be only 0.04% of the annual Safe Yield of the Providence Water system.
- CREC's Water Supply Plan identifies that water required to support operation of the Facility on Ultra-Low Sulfur Distillate ("ULSD") will be

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 34th SET OF DATA REQUESTS**

provided if needed by drawing down the on-site water and ULSD storage tanks in the winter and filling these tanks during a 30-day replenishment fill event that will likely occur in late winter or in the spring. As a result, any need for CREC to fire ULSD will be met from the on-site water and ULSD storage tanks that will be re-filled in late winter or early spring when local water supplies have typically been replenished by winter snow melt.

- Summer seasonal use of evaporative cooling of the inlet air supply to CREC's gas fired combustion turbines is an optional feature that when used, increases the electric generation output of the Facility during periods of high summer temperatures and high summer energy requirements. During drought conditions, if required, CREC can choose to forego use of its evaporative cooling system to further reduce summer water demand in response to a drought declaration by the State of Rhode Island or its multiple water suppliers.
- Lastly, impact of a drought on the operation of CREC is a business risk that will impact Invenergy and will not impact the Town of Burrillville or the State of Rhode Island should for any reason the above options for addressing local or regional drought impacts are not effective.

For the above reasons, Invenergy believes that CREC has an overall design and water supply plan that allows the Facility to modify its operation if needed and modify its water sourcing plans to provide a reliable electric supply to the New England region that is least susceptible to local or regional droughts.

RESPONDENT: George Bacon and Jeff Hershberger, ESS Group, Inc.

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-6 If potential noise violations occur on site, how will CREC address those concerns? Specifically, what process and procedure(s) will be used to address a potential violation? Will monitoring be used and, if yes, where and what measures will be employed?

Response 39-6 If, after commencing commercial operation, a noise complaint is received from the community, an initial investigation will take place to determine the credibility of the complaint. For example, is the noise coming from somewhere that, based on distance, the Facility is expected to be audible? Was the Facility running at the time of the complaint? Are other sources the cause of some or all of the noise? Assuming the complaint is legitimate, an acoustical consultant would be hired by the Facility to conduct measurements at the site of the complaint(s). This typically involves a combination of attended measurements over the course of a few nights and/or leaving a monitor to collect longer-term noise levels (e.g. weeks). Measurements may also be conducted concurrently closer to the Facility, or at the Facility, to identify specific noise sources.

If Facility-only noise levels are determined to be greater than 43 dBA, the investigation would continue to determine what mitigation measure(s) are necessary to bring the facility into compliance. Noise testing would be repeated after installation of mitigation to demonstrate that compliance is achieved.

Note, as further explained in my September 1, 2017 Rebuttal Testimony (Pages 2-3), noise level compliance testing will be conducted during commissioning of the Facility to demonstrate compliance. Accordingly, if exceedances are found, modifications will be made to install the proper noise mitigation measures and compliance will be re-demonstrated prior to commercial operation. This, in addition to designing a quiet Facility in the first place, is in an effort to minimize the potential for complaints.

RESPONDENT: Michael Hankard, Hankard Environmental, Inc.

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-7 Will noise from the facility potentially be affected by weather or atmospheric conditions? Does noise from the facility have the potential to "travel" beyond the perimeter of the facility and impact areas of the community some distance from the perimeter of the facility? If yes, please elaborate.

Response 39-7 Yes, noise propagating away from the Facility through the atmosphere will always be affected by weather and atmospheric conditions. And yes, noise will travel across the perimeter of the Facility. The degree of impact is judged by meeting the Town's low noise limit. Given that the Facility has been designed to meet the limit, and that it will demonstrate the same, no significant impact is expected in the community due to noise from the Facility.

As described in more detail in the October 2015 Noise Level Evaluation Report, filed with the Board as an attachment to Invenergy's Application, the acoustical model used to design the noise mitigation features of the Facility is based on atmospheric conditions very conducive to sound propagation. (Section 3.4, Pages 29-30) Specifically, all receivers are assumed to be downwind of the Facility, absorption of sound by the atmosphere is assumed to be at its lowest, no attenuation due to propagation through trees is assumed and a moderate temperature inversion is assumed to be present. During a temperature inversion, sound waves are bent back toward the ground thus increasing noise levels over what would have been experienced otherwise. Thus, the model represents "worst case" atmospheric conditions. Noise levels are expected to be lower than those reported a majority of the time.

RESPONDENT: Michael Hankard, Hankard Environmental, Inc.

DATE: October 13, 2017

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 39th SET OF DATA REQUESTS**

Request 39-8 Please detail the fire suppression system(s) to be utilized at the facility and the scope of its coverage. Will different types of fire suppression systems be installed and, if yes, what does each protect? If any part of the facility is not protected or does not need to be protected, please provide details and explain.

Response 39-8 CREC will be equipped with a variety of fire detection and suppression systems to address the hazards that may develop in particular areas of the Facility. In general, the fire protection systems of the CREC will comply with the applicable codes and standards adopted by the Rhode Island Fire Safety Code ("RIFSC") and the pertinent recommendations of the National Fire Protection Association ("NFPA"). There are many NFPA standards that apply to the design of a power generation facility, many of which are adopted by reference via the RIFSC. Some of the more notable standards include but are not limited to the following:

- NFPA 1 Fire Prevention Code
- NFPA 20 Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 24 Standard for the Installation of Private Fire Service Mains and their Appurtenances
- NFPA 30 Flammable and Combustible Liquids Code
- NFPA 54 National Fuel Gas Code
- NFPA 56 Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems
- NFPA 70 National Electrical Code
- NFPA 72 National Fire Alarm and Signaling Code
- NFPA 101 Life Safety Code
- NFPA 850 Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC's RESPONSES TO
THE TOWN OF BURRILLVILLE'S 34th SET OF DATA REQUESTS**

The following table provides a summary of typical suppression and detection systems that may be installed in the various areas of the CREC to satisfy the requirements of applicable codes and other design criteria. Note that there are many alternative methods of fire protection that could be used in lieu of the methods listed below. During detailed engineering of CREC, the type of detection or suppression system ultimately used may be different as the design requirements and project-specific factors are more closely addressed.

Area or Equipment	Suppression System	Detection
All Plant Areas	Looped fire water supply with hydrants (300 foot spacing). Standpipe and hose stations.	None
Combustion Turbine Enclosures	Clean Agent Or Water Mist	Cross Zoned Heat Detectors
Steam Turbine Bearings	Double Interlock Pre-Action Water Spray	Rate Compensated Heat Detectors
Steam Turbine Lube Oil Systems (reservoir, coolers, filtration, conditioner, piping, etc.)	Pre-Action Water Spray	Heat detectors
Steam Turbine Building: Ground Floor, Mezzanine, and Platforms Subject to Oil Flow, Oil Spray, or Oil Accumulation	Wet Pipe Sprinkler	Frangible bulb
STG Building - above the operating floor	Portable Extinguishers	Smoke and/or Heat Detectors

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 34th SET OF DATA REQUESTS**

Fuel Oil Storage Tanks	Proportioning Type Foam Deluge System	Smoke and/or Heat Detectors
Fuel Oil Treatment and Forwarding Skids	Proportioning Type Foam Deluge System	Smoke and/or Heat Detectors
Fuel Oil Unloading Pumps	Proportioning Type Foam Deluge System	Smoke and/or Heat Detectors
Fuel Oil Truck Unloading Area	Proportioning Type Foam Deluge System	Smoke and/or Heat Detectors
Generator Step-Up and Auxiliary Transformers	Passive Fire Protection and/or Deluge Suppression System	Linear Heat Detector or Dry Pilot
Electrical Rooms	Portable Extinguishers	Aspirating Smoke Detector
Power Distribution Enclosures	Portable Extinguishers	Aspirating Smoke Detector
Cable spreading rooms or underground spreading vaults	Wet or Dry Pipe Sprinkler	Frangible Bulb
Main DCS equipment room (processors, etc) and telecommunications room	Portable Extinguishers	Aspirating Smoke Detector
DCS remote I/O cabinet rooms	Portable Extinguishers	Aspirating Smoke Detector
CEMS enclosure, Sample Panel Room	Portable Extinguishers	Aspirating Smoke Detector

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 34th SET OF DATA REQUESTS**

Administration Building	Wet Pipe Sprinkler	Smoke Detection and Frangible Bulb
Central Control Room	Portable Extinguishers	Smoke Detection
Maintenance Workshop	Wet or Dry Pipe Sprinkler	Frangible Bulb
Warehouse	Portable Extinguishers	Smoke Detection and Frangible Bulb
Water Treatment building	Portable Extinguishers	Frangible Bulb
Feedwater Pump Building	Wet Pipe Sprinkler	Frangible Bulb
Auxiliary Boiler Building	Portable Extinguishers	Smoke Detection
Gas Compressor Building	Wet Pipe Sprinkler	Frangible Bulb
Diesel Fire Pump Room	Wet Pipe Sprinkler	Frangible Bulb

For the natural gas systems of the CREC, a network of natural gas detectors to monitor for natural gas leaks in the gas yard and within all areas where fuel gas equipment is located both indoors and outdoors will be installed. The detectors will be set to alarm in the CREC control system.

Buildings and enclosures of the CREC that contain equipment that generate or use hydrogen (such as battery rooms and generator enclosures) or otherwise could be at risk for the collection of hydrogen gas will have hydrogen monitors that will alarm in the plant control systems in the event that hydrogen is detected.

The signals from the various monitors and detectors of the fire detection system will be monitored by a fire protection system control unit located in the main control room of the CREC. The control unit processes the signals to determine

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

IN RE: Application of Invenergy Thermal
Development LLC's Proposal for
Clear River Energy Center

Docket No. SB-2015-06

**INVENERGY THERMAL DEVELOPMENT LLC'S RESPONSES TO
THE TOWN OF BURRILLVILLE'S 34th SET OF DATA REQUESTS**

the appropriate response such as initiating an alarm or activation of a suppression system. In some instances, the plant control systems may automatically shut down the affected generating unit depending on the nature of the hazard detected by the fire protection system.

Fire water to supply the various fire suppression systems will be stored on the CREC site in a fire water storage tank. For reliability, an electric motor-driven fire pump, diesel-driven fire pump and a motor-driven jockey pump will be installed to pump water to the fire service main (yard loop). The fire loop will provide water to fire hydrants and to the various fixed water-based fire suppression systems around CREC.

RESPONDENT: Mark Wiitanen, HDR, Inc.

DATE: October 13, 2017

INVENERGY THERMAL DEVELOPMENT LLC
By its Attorneys,

/s/ Alan M. Shoer

Alan M. Shoer, Esq. (#3248)

Richard R. Beretta, Jr. Esq. (#4313)

Nicole M. Verdi, Esq. (#9370)

ADLER POLLOCK & SHEEHAN, P.C.

One Citizens Plaza, 8th Floor

Providence, RI 02903-1345

Tel: 401-274-7200

Fax: 401-351-4607

Dated: October 13, 2017

CERTIFICATE OF SERVICE

I hereby certify that on October 13, 2017, I delivered a true copy of the foregoing responses to the Town of Burrillville's 39th Set of Data Requests via electronic mail to the parties on the attached service list.

/s/ Alan M. Shoer