

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD**

**IN RE: INVENERGY THERMAL DEVELOPMENT LLC's
APPLICATION TO CONSTRUCT THE
CLEAR RIVER ENERGY CENTER IN
BURRILLVILLE, RHODE ISLAND**

DOCKET No. SB-2015-06

**PRE-FILED DIRECT TESTIMONY OF
JIM RIORDAN**

(JUNE 30, 2017)

SUMMARY

Jim Riordan is a project manager for the Water and Coastal Engineering Department at ESS Group, Inc. and testifies regarding the Clear River Energy Center's ("CREC's") environmental impacts, focusing on the plans for the management of stormwater, as described in the stormwater management plan and analysis in the application, as further described in support of the applications for permits with the Rhode Island Department of Environmental Management ("RIDEM"), as part of the Wetlands Alteration and RIDEM Stormwater and Water Quality Permit applications. Mr. Riordan describes the stormwater permitting process for CREC. Mr. Riordan also describes the soil erosion and sediment control plan that is under review with RIDEM and was reviewed by the local building inspector when completing his advisory opinion. Further, Mr. Riordan testifies regarding CREC's mitigation efforts with regard to the stormwater control plans for the Project.

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TESTIMONY OF M. JAMES RIORDAN, ESS GROUP, INC**

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS TITLE AND BUSINESS ADDRESS.

A. My name is Jim Riordan. I am Project Manager/Director for Water & Coastal Engineering at ESS Group, Inc. ("ESS"), located at 10 Hemingway Drive, Riverside, RI 02915.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. My testimony is on behalf of the applicant, Invenergy Thermal Development LLC ("Invenergy"), in support of its application (the "Application") for a license from the Rhode Island Energy Facility Siting Board ("EFSB" or "Board") to construct the Clear River Energy Center project in Burrillville, Rhode Island ("Clear River" or "CREC" or "the Facility").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a bachelor's degree in psychology from the University of Lowell and a master's degree in urban planning and environmental planning from New York University. I have more than twenty-three (23) years of experience managing stormwater projects, nonpoint source pollution and wastewater management as a Rhode Island Department of Environmental Management ("RIDEM") water quality program manager from 1993 – 2005 and as a consultant since 2005. As an example of my work during my time with the state, I authored the 2005 revisions to the *Rhode Island Stormwater Design and Installation Standards Manual*. A detailed description

1 of my educational background and professional experience is included in my CV, filed with the
2 Board on September 12, 2016.

3 **Q. PLEASE DESCRIBE YOUR EXPERIENCE PROVIDING TESTIMONY TO**
4 **REGULATORY COMMISSIONS, BOARDS, AGENCIES OR AS AN EXPERT**
5 **WITNESS.**

6
7 **A.** As a consultant, I routinely represent clients before municipal, state, regional and federal
8 regulatory authorities. I am also called on to provide peer review of development plans on behalf
9 of regulatory entities. I have also assisted clients in addressing violations and regulatory
10 compliance orders.

11 I sit as a public representative on the State Planning Council, but have recused myself with
12 regard to the development of CREC.

13 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

14
15 **A.** The purpose is to explain CREC’s environmental impact, focusing on stormwater analysis.
16 I will testify regarding Section 6 of Invenergy’s EFSB Application and Sections 5.1.5 and 5.1.6
17 (water quality and soil erosion and sediment control) of the Freshwater Application Permit
18 submitted to both RIDEM and the US Army Corps of Engineers.

19 **Q. PLEASE DESCRIBE YOUR FAMILIARITY WITH CREC.**

20 **A.** My principal role has been as a consultant, assisting Invenergy to address stormwater
21 related issues in collaboration with other technical experts on the development team. As such, I
22 have become quite familiar with the proposed approach to stormwater management and am
23 generally aware of the proposed development of the overall Facility.

24 **Q. WHAT MATERIALS DID YOU REVIEW AND RELY ON WHEN ANALYZING**
25 **CREC’S ENVIRONMENTAL IMPACTS?**

26
27 **A.** I reviewed planning and design materials provided by HDR, Inc. (“HDR”) for CREC.
28 Generally, the documents I reviewed are related to stormwater management. The documents

1 included site plans, stormwater pollution prevention plans and stormwater management plans for
2 the Project.

3 **II. STORMWATER ANALYSIS**

4
5 **Q. PLEASE DESCRIBE ALL RELEVANT STANDARDS AND REGULATIONS**
6 **THAT YOU REVIEWED WHEN ANALYZING CREC'S STORMWATER**
7 **IMPACT.**

8
9 **A.** For my review, I used the *Rhode Island Freshwater Wetlands Regulations* (July 2014),
10 *Rhode Island Stormwater Design and Installation Standards Manual* (April 2010), *Rhode Island*
11 *Soil Erosion and Sediment Control Handbook* (2015), and the *Burrillville Soil Erosion and*
12 *Sediment Control Ordinance* (Article II, sec. 12-31 *et. seq.*).

13 **Q. PLEASE EXPLAIN YOUR METHODOLOGY.**

14
15 **A.** I reviewed documents and design plans provided by the design team. My review included
16 consideration of layout, hydrology and drainage hydraulics (both pre and post construction), state
17 water quality standards and local standards. I reviewed the design to ensure compliance with the
18 relevant standards.

19 **Q. WERE YOU INVOLVED WITH CREC'S STORMWATER PERMITTING?**

20
21 **A.** Yes, I have been.

22
23 **Q. DID YOU MAKE ANY FINDINGS REGARDING CREC'S STORMWATER**
24 **CONTROL SYSTEM IMPACT ON THE ENVIRONMENT?**

25
26 **A.** Yes. My opinion is that the developer, Invenergy, is taking steps to properly address
27 stormwater management during construction and post-construction. The CREC will comply with
28 Rhode Island's stormwater management standards as well as all relevant local stormwater
29 management standards. In my opinion, since the Project has been planned and designed to meet
30 all local and state stormwater management standards, the impacts from stormwater from this
31 Project will be minimal and insignificant.

1 **Q. PLEASE EXPLAIN THE BASIS FOR YOUR OPINION.**

2 **A.** To provide more detail, structural best management practices (“BMPs”) to be installed at
3 the Project site include a dry swale and a gravel wet vegetated treatment system, which are
4 designed to manage the water quality volume of approximately 72 thousand cubic feet. This is
5 approximately 8% more than the state’s required volume. In accordance with state and local
6 standards, structural BMPs, including two detention basins and a stormwater conveyance system,
7 have been designed to manage peak runoff flows from the 2-, 10-, and 100-year storm events. This
8 means that the CREC stormwater management system will address channel protection, overbank
9 flood protection and the potential for downstream flooding. Since the power block area of the
10 Facility is considered to be a land use with higher potential pollutant loads (i.e., LUHPPL), no
11 infiltration of stormwater is allowed, and therefore, the drainage systems have been designed to
12 prevent groundwater recharge (i.e., infiltration). The drainage system has also been designed to
13 avoid impacts to sensitive resources such as wetlands. Furthermore, as required by the state
14 stormwater management standards, low impact development (“LID”) principals have been applied
15 to the project to the maximum extent practicable to reduce impervious surfaces, to avoid the
16 generation of stormwater and to mimic predevelopment hydrology.

17 **Q. DID YOU MAKE ANY FINDINGS REGARDING CREC’S PLANS TO MANAGE**
18 **SOIL EROSION AND SEDIMENT CONTROL?**

19
20 **A.** I did. Soil erosion and sediment control will be accomplished primarily through the use of
21 temporary detention basins, silt fences and silt socks. Construction activities will be phased to
22 minimize the amount of area that is being actively disturbed. LID principals, such as avoiding
23 steep slopes, preserving topsoil and retaining stormwater on site, will be employed wherever
24 practicable. Pollution prevention practices, such as proper waste disposal, spill prevention control,
25 dewatering management, proper staging of materials, dust control, the use of designated concrete

1 washout areas and proper chemical treatment are all proposed in accordance with state and local
2 soil erosion and sediment control standards.

3 Site monitoring and drainage system operation and maintenance are all proposed in
4 accordance with state standards. Procedures for operation and maintenance are fully documented
5 in appropriate planning documents as required by state and local standards. Funding for BMP
6 operation and maintenance will be included as part of the overall plant operations budget. Project
7 operations will be funded through revenue from the electric generation capacity planned on site.

8 **Q. DO YOU HAVE AN OPINION ON THE STORMWATER MANAGEMENT PLAN**
9 **AND SOIL EROSION AND SEDIMENT CONTROL PLAN? IF SO, PLEASE**
10 **EXPLAIN.**

11
12 **A.** I do. On May 16, 2017, Invenergy’s Stormwater Management Plan, which includes the
13 Soil Erosion and Sediment Control Plan, was filed with the Board as part of Invenergy’s Wetlands
14 Application that was filed with RIDEM in April of 2017. My opinion is that the developer,
15 Invenergy, has designed the storm water system to effectively address stormwater management
16 and soil erosion and sediment control during construction and operation. The CREC will comply
17 with Rhode Island’s soil erosion standards and stormwater management standards as well as the
18 applicable local soil erosion and sediment control standards. In my opinion, since the Project has
19 been planned and designed to meet all local and state stormwater standards, the impacts from this
20 Project will be minimal and insignificant from a stormwater and soil erosion standpoint.

21 **Q. HAVE YOU REVIEWED CDR MAGUIRE’S MEMO TO THE BURRILLVILLE**
22 **TOWN COUNCIL, DATED SEPTEMBER 16, 2016?**

23
24 **A.** Yes.

25 **Q. ON PAGE 6 OF THAT MEMO, CDR MAGUIRE STATES THAT PERMANENT**
26 **FILL IS BEING PLACED INTO WETLANDS 1 AND 2 AND THAT RIDEM**
27 **REGULATIONS REQUIRE THAT STORAGE COMPENSATION NEEDS TO BE**
28 **RE-CREATED WITHIN THE SAME AREA OF THE WATERSHED TO**

1 **PROVIDE FOR THE PROPER FLOOD COMPENSATION. DO YOU HAVE A**
2 **RESPONSE?**

3
4 **A.** I do. First, it appears that CDR Maguire relied on an old plan set when rendering its
5 opinions in this memorandum. As noted above, updated information was filed with RIDEM in
6 April 2017.

7 The third paragraph on page 6 refers to the permanent filling of Wetland 1 and Wetland 2,
8 which is proposed as part of this project. A minor amount of fill is proposed in Wetland 1 and
9 Wetland 2, and it is mitigated in accordance with RIDEM regulations by on site compensatory
10 flood storage. The proposed stormwater BMPs have been designed to treat the water quality
11 volume and manage the peak stormwater events of the 2-, 10-, and 100-year events in accordance
12 with the requirements of the *Rhode Island Stormwater Design and Installation Standards Manual*,
13 which is the state standard for stormwater management.

14 **III. CONCLUSIONS**

15
16 **Q. DO YOU HAVE AN OPINION, TO A REASONABLE DEGREE OF CERTAINTY**
17 **IN YOUR FIELD, REGARDING CREC’S IMPACT ON STORMWATER?**

18
19 **A.** I do. My opinion is that the developer, Invenergy, is taking steps to the maximum extent
20 practicable to address stormwater during construction as well as operation. The CREC will comply
21 with Rhode Island’s stormwater management standards as well as all applicable local soil erosion
22 and sediment control standards. The state has set standards to minimize the potential stormwater
23 impacts from development on the environment. It is my professional opinion that, since the Project
24 has been planned and designed to meet all local and state stormwater management standards, the
25 stormwater impacts from this Project will be minimal and insignificant to a reasonable degree of
26 certainty.

27 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**
28

1 A. Yes.