



RECEIVED

MAR 22 2010

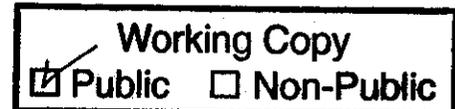
SOLID & HAZARDOUS WASTE
MANAGEMENT BRANCH

Indian River Operations Inc.
P.O. Box 408
Power Plant Road
Millsboro, Delaware 19966

An NRG Energy Company

March 15, 2010

Dr. Jae-Soo Chang
State of Delaware
Department of Natural Resources
and Environmental Control
Solid and Hazardous Waste Management Branch
89 Kings Highway
Dover Delaware 19901



RE: Indian River Generating Station
Industrial Landfill Permit Modification Application
Air Quality Control Systems for Units 3 and 4

Dear Dr. Chang,

The purpose of this correspondence is to submit to the Department of Natural Resources and Environmental Control ("DNREC" or "the Department") a letter of intent for a modification to Industrial Landfill Permit SW-07/01 for the continued operation of the industrial landfill located at the Indian River Generating Station ("Indian River").

Project Background

On December 11, 2006, the Department adopted Regulation 1146, the Electric Generating Unit Multi-Pollutant Regulation to reduce emissions of Hg, SO₂, and NO_x. Regulation 1146 is applicable to the four coal-fired electric generating units (Units 1, 2, 3 and 4) located at Indian River Power LLC's (NRG) Indian River Generating Station located in Millsboro, Delaware. In September 2007, NRG Energy, Inc. and DNREC signed a Consent Order to establish emission and operational limitations to comply with Regulation 1146 which establishes emission limitations for Hg, SO₂ and NO_x on Units 3 and 4 and requires the discontinued use of Unit 2 by no later than May 1, 2010 and the discontinued use of Unit 1 by May 1, 2011.

In order to comply with the emission limitations established in the Consent Order, NRG will discontinue use of Unit 3 by December 31, 2013 and is installing Circulating Dry Scrubbing Technology (CDS) to reduce emissions of SO₂, Hg, and particulate matter and Selective Catalytic Reduction Technology (SCR) to reduce emissions of NO_x on Unit 4. The CDS system consists of lime storage silos, lime feed systems, the scrubber reactor, and pulse jet fabric filters. The SCR system consists of aqueous ammonia reagent systems and catalysts. In addition, the facility will continue operation of the existing electrostatic precipitators and activated carbon injection system currently in operation.

On October 1, 2009, DNREC's Division of Air and Waste Management issued a permit to construct the proposed air quality control system. Indian River commenced construction activities immediately.

CDS Byproduct Generation

The CDS is a dry flue gas desulfurization process that uses hydrated lime to reduce emissions of SO₂, via gas-solid phase reactions in a circulating fluidized bed. In this process, a mixture of lime and water will be injected in the CDS system where this mixture will contact the hot flue gas from the boiler. In the CDS, the flue gas will be cooled by the evaporation of water and the hydrated lime will react with the SO₂ in the flue gas. The treated flue gas and solids will flow out of the reactor to the downstream pulse jet fabric filter (PJFF) assembly. Solids collected on the filter bags will be collected in the hopper/troughs below the PJFF. An air slide at the bottom of each PJFF trough will transport the majority solids to a mixer where it will be combined with fresh hydrated lime and water, and the mixture will be re-injected into the CDS reactor.

Most of the solids collected in the PJFF will be recycled in the CDS to achieve high utilization of lime; however, part of the solids will be removed from this closed loop system and transferred as a byproduct. Byproduct from the troughs at the bottom of the PJFF will be transported pneumatically to the byproduct storage silo. The storage silo will be equipped with a bin vent filter, which will be operated during the transfer. The bottom outlet of the byproduct storage silo will discharge via a telescopic chute to trucks for transport of the byproduct solids to Indian River's industrial landfill.

The byproduct is planned to be disposed in the landfill with the permitted ash waste. The byproduct will not be separated from the ash waste in the landfill.

CDS Byproduct Characterization

The byproduct material will be a mixture of scrubber solids (i.e., compounds resulting from the lime reacting with the flue gas) and unreacted lime. A projected characterization of the byproduct is included in Table 1 below.

Table 1 – Projected CDS/PJFF Byproduct Material Characterization

Constituent	Weight Percent
CaSO ₃ -1/2H ₂ O	40%
CaSO ₄ -2H ₂ O	24%
CaCO ₃	7%
CaO - Active	20%
CaCl ₂ -2H ₂ O	1%
Inerts	5%
Flyash	1%
Water	2%

Taken from Alstom Mass Balances dated 28 October 2009

The characterization above is for the byproduct material as it leaves the scrubber. Prior to transporting the byproduct material to the landfill for disposal, moisture conditioning will be performed for dust control via pin paddle mixing as the byproduct material is being loaded from the byproduct storage silo to the trucks. The conditioned byproduct will contain approximately 15% moisture by weight, although the actual moisture content will be limited to only that required for dust control.

The characterization presented in Table 1 is a projection based on mass balances. A representative sample of the byproduct is not available for analysis. Although dry flue gas desulfurization processes are in operation at other generating stations, operational factors such as fuel type, boiler type, control configuration, type of lime used, byproduct and fuel moisture content, ash content, and years of system operation will affect the characteristics of the byproduct. Due to these operational differences, samples from other generating stations would not be representative of the byproduct that will be disposed at the Indian River landfill.

DNREC's regulation Part 261, Identification and Listing of Hazardous Waste, defines hazardous waste and includes certain exclusions to the definition of hazardous waste. The following is included as an exclusion from the definition of hazardous waste under §261.4(b)(4):

"Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste, generated primarily from the combustion of coal or other fossil fuels, except as provided by §266.112 of these regulations for facilities that burn or process hazardous waste."

Because the CDS byproduct is flue gas emission control waste, under these regulations, it is not considered a hazardous waste.

Industrial Landfill Permit Modification

The industrial landfill at Indian River is currently operated under Industrial Landfill Permit SW-07/01. Under Condition III.E of this permit, non-hazardous coal fly ash and non-hazardous coal bottom ash are acceptable wastes for disposal at the facility. NRG is submitting this application to modify the permit to include the CDS byproduct as an acceptable waste for disposal at the landfill.

DNREC's Section 1301, Regulations Governing Solid Waste, §4.1.7.4 states, "Minor modifications are those which if granted would not result in any increased impact or risk to the environment or to public health." Because the byproduct is not considered a hazardous waste, the disposal of the byproduct at the Indian River landfill would not increase impact or risk to the environment or public health. Therefore, a minor modification to the existing industrial landfill would be applicable.

As previously stated, the byproduct would be disposed with the existing permitted ash wastes in the landfill. All operating, monitoring and reporting requirements detailed in

Dr. Jae-Soo Chang
Industrial Landfill Permit Modification Application
March 15, 2009
Page 4

the existing industrial landfill permit would be followed for the new byproduct waste along with the existing ash waste.

A Solid Waste Management Facility Application is enclosed with this letter of intent. According to the application instructions, the Department will invoice the applicant for any fees; therefore, a check is not enclosed at this time.

We would like to meet with you and your staff to discuss this project at your earliest convenience. If you have any questions about the information submitted within this letter or our permit application, please do not hesitate to contact me at (302) 540-0327.

Sincerely,

A handwritten signature in black ink, appearing to read "David Bacher". The signature is cursive and somewhat stylized, with a prominent initial "D".

David Bacher
Regional Manager, NRG Energy, Inc.



Delaware Department of Natural Resources and Environmental Control
Solid & Hazardous Waste Management Branch

Solid Waste Management Facility Application

Please type or print all information

1. Facility Permit Information: (if applicable)

A. Permit Number: SW-07/01

B. Date of Expiration: Jan. 24, 2012

C. Are you requesting any changes to the conditions required by the current solid waste facility permit?
 Yes No (If "Yes", please attach the request and supporting documents.)

2. Facility Information:

Facility Name: Indian River Generating Station

Street: 29416 Power Plant Road

City: Dagsboro County: Sussex State: DE

Zip: 19939 Phone(s): (302) 934-3554 Fax: (302) 934-3519

Total Site Area (Acres): 1,200 Latitude: 72.236 W Longitude: 38.586 N

3. Owner Information:

Owner's Name: Indian River Power LLC

Contact Person: Rishad Patel Title: Regional Asset Manager

Street Address: 211 Carnegie Center

City: Princeton State: NJ Zip: 08540

Phone: (609) 524-4657 Fax: (609) 524-4590 Email: rishad.patel@nrgenergy.com

4. Operator Information:

Operator's Name: Indian River Operations, Inc.

Contact Person: David Bacher Title: Regional Environmental Manager

Street Address: PO Box 408, Power Plant Road

City: Millsboro State: DE Zip: 19966

Phone: (302) 540-0327 Fax: (302) 934-3519 Email: david.bacher@nrgenergy.com

5. Type of Facility:

- Sanitary Landfill Industrial Landfill
 Transfer Station Materials Recovery Facility
 Thermal Recovery Other _____

6. Types of Solid Waste to be Accepted (check all that apply):

- Municipal Industrial Infectious Other (specify) _____

7. Service Area (political jurisdictions and unincorporated area to be served by the facility):

The landfill accepts wastes only from the Indian River Generating Station and the NRG Dover facility.

8. Estimated Quantities of Waste Expected to be Handled at the Facility:

A. Average daily tonnage expected during peak season (may be a range): 792 dry tons byproduct

B. Maximum daily tonnage expected: 862 dry tons byproduct tons

C. Average weekly tonnage expected during peak season (may be a range): 3,960 dry tons byproduct

D. Maximum weekly tonnage expected: 4,308 dry tons byproduct tons

Note: Maximum daily and weekly tonnages must consider operating hours and days specified in Section 11 of this form. Analysis required by the Environmental Assessment must consider maximum expected tonnages whenever estimates of waste handling activity are needed. The Engineering Report required by the DRGSW must indicate the maximum tonnage which the facility is designed to process (per hour/per day).

9. Disposal Capacity of Proposed Landfill Cells (if applicable):

A. Cell Designation: NA

B. Cell Acreage: NA

C. Cell Capacity (years): NA

D. Cell Capacity (cubic yards): NA

10. Disposal Capacity Remaining in Existing Landfill (if applicable):

2.2 million tons of ash based on capacity of Phase II landfill

11. Operating Hours:

A. Daily Operating Hours (include all time periods when waste may be handled): _____

Planned hours are 7-16 hours/day, however hours may vary based on need up to 24 hours/day

B. Daily Business Hours (i.e. hours open to the public): Not open to public

C. Days of Operation: Scheduled 5 days/week

D. Operating Days Per Year: Up to 365 days/year; scheduled 260 days/year

12. Applicant Background Information:

If an Environmental Permit Application Background Statement is required by 7 Del. C., Chapter 79, please complete the Environmental Permit Application Background Statement.

Has an Environmental Permit Application Background Statement been completed and attached?

Yes No

Is any information in the Environmental Permit Application Background Statement considered by the applicant to be confidential? Yes No

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in the application and all attachments and that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

3/15/10 _____
Date Signature of Applicant or Corporate Agent

Name: Jack Grant Phone: (302) 934-3525

Title: Plant Manager Email: jack.grant@nrgenergy.com

Company: Indian River Power LLC

Address: PO Box 408
Millsboro, DE 19966