



**NRG WESTLAND ASH STORAGE SITE
DICKERSON, MARYLAND
2016 ANNUAL CCR INSPECTION REPORT**

To: Walter Johnson, NRG MD Ash Management LLC

From: Jeffrey Hutchins, P.E., AECOM

Date: January 4, 2017

RE: Annual Coal Combustion Residuals (CCR) Inspection Report
Westland Ash Storage Site Operating Cell B

1.0 Introduction

As of October 19, 2015, the Westland Ash Storage Site has been regulated by the Code of Federal Regulations (CFR) under 40 CFR §257 Subpart D – Standards for Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments. Section §257.84 of this regulation requires operators of existing CCR units to conduct an annual inspection by a qualified professional engineer to ensure the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices.

The initial Annual CCR Inspection Report for the Westland Cell B site was completed and placed in the Westland Operating Record on January 18, 2016, as required by Section §257.84.b(3). The regulations require that subsequent to completion of the initial Annual CCR Inspection Report, the owner/operator conduct inspections on an annual basis, with the completion date of the Annual Inspection Report being based on the completion date of the previous Annual Inspection Report.

The annual inspection for the Cell B operational area for the Westland Ash Site was conducted on December 15, 2016 and will be placed in the Westland operating record by January 18, 2017.

2.0 Site Background

The Westland Ash Storage Site is located on Martinsburg Road in Dickerson, Maryland. The facility and access road connecting the facility to the Dickerson Generating Station were initially designed by D'Appolonia for Potomac Electric Power Co. in 1977. The facility design received regulatory authorization and construction began in 1979. The site is comprised of three disposal cells, Cells A, B and C, with Cell B being the only operating cell at the site; Cell B receives CCR from the nearby Dickerson Generating Station.

- Cell C, which encompasses approximately 18.5 acres, was completed and closed. Cell C is located at the northwest corner of the site, separated from Cell B by a 250-foot transmission line right-of-way which runs along the eastern edge of Cell C. During 2016, Cell C was formally closed under a Consent Decree with the Maryland Department of the Environment (MDE). Cell C was capped with an engineered, low-permeability geosynthetic closure cap approved by MDE.
- Cell B, which is the current operational cell, encompasses approximately 64.4 acres over the center of the site. The access road from the Dickerson Generating Station enters the facility at the northwest corner of Cell B. Approximately 24 acres of Cell B along the

northern, western, and southern perimeter slopes are currently complete and closed leaving approximately 40.4 acres as the active, operating portion of the site. Similar to Cell C, the closed portion of Cell B is being formally closed using an engineered, low-permeability geosynthetic closure cap under a Consent Decree with MDE.

- The operating portion of Cell B is divided into (1) the northern CCR fill area (23.4 acres) and (2) the southern portion consisting of Cell B-1A and Cell B-1B encompassing 17 acres.
- Cell A, the largest planned disposal cell (approximately 96.6 acres), is situated directly east of Cell B, and divided from Cell B by an approximately 400 ft. wide strip of land denoted as "Preservation Area D." There are no current plans to construct Cell A.

3.0 Cell B Operational Areas Inspection Results

On December 15, 2016, a Maryland Registered Professional Engineer employed by AECOM, accompanied by a representative of NRG, conducted an inspection of the operating portion of Cell B. The results of the inspection are presented in the subsections below. The inspection form that was prepared during the inspection is presented as Attachment A to this report.

3.1 Access Roads and Security

Any person, contractor, or vendor entering the Westland site must first pass through the NRG plant's security guard station located at the main security gate into the generating plant. From there, an interior plant road must be followed to an automated security gate at Martinsburg Road that is activated by a key card. Access to the Westland site, which is located on the opposite side of Martinsburg Road, is also controlled by an automated security gate activated by a key card. The security measures to gain access into the Westland site appeared to be appropriate and acceptable.

The access road into the Westland site through the security gate and to the office areas is paved and is in acceptable condition. The access road around Cell B is a thick layer of crushed aggregate and is in acceptable condition. Roadside drainage features are well kept and in acceptable condition. The access road has a speed limit of 10 miles per hour which is posted with proper signage.

3.2 Cell B Operating Areas

- CCR Storage in 2016: NRG's daily fly ash delivery records for the Westland site show that Cell B received 2,516 truck-loads of fly ash and bottom ash during 2016, comprised of 2,426 loads from the Dickerson Generating Station and 90 loads from excavation of ash during closure capping work at the Westland site. Based on the average capacity of the dump trucks used to haul CCR material to Cell B of approximately 6 cubic yards, Cell B received approximately 15,100 cubic yards of CCR during 2016. CCR delivered to the site during 2016 was stored in the Cell B and Cell B-1A operational areas. The exterior side slopes of Cell B remain fixed in location; consequently, there has been no change in the overall geometry of Cell B except for the vertical rise in elevation of the operating Cell B and B-1A areas.
- Estimated In-place CCR Volume: It can be estimated that the in-place volume of CCR in Cell B is approximately 3.97 million cubic yards (MCY). This volume is based on (1) the original 1979 design documents for the Westland site and the estimated CCR capacity of Cell B of approximately 5.6 MCY, and (2) the estimated in-place volume of CCR in Cell B based on recent aerial topography of the site and the estimated percent filled in various sub-areas of Cell B and B-1A.
- Exterior Side Slopes: The operating cell exterior side slopes are heavily vegetated and stabilized in good condition; no signs of erosion.

- Interior Side Slopes: The operating cell interior side slopes are vegetated and well stabilized with grass, mulch, and in many cases with erosion control matting; minimal signs of erosion on stabilized slopes.
- CCR Placement: Hauling and placement of CCR in Cell B and Cell B-1A appears to have been accomplished in appropriate lift thicknesses, and the current lift appears to have been installed, compacted and graded in an acceptable manner. CCR side slopes have been covered with routine soil cover material and the operating floor has been properly compacted and graded to promote positive drainage into the interior drainage system.
- Cell B-1 Operating Cell Floor: New CCR deliveries in 2016 were deposited on the floor of Cell B-1A in appropriate lift thickness and were compacted and graded in an acceptable manner toward the chimney drains. The CCR surface of the Cell B-1A floor is in good condition with no eroded gullies or undercutting. The Cell B-1B floor is stone aggregate in good condition with no erosion gullies. No CCR filling has occurred in Cell B-1B as of yet.
- Chimney Drains: All chimney drains appear to be constructed and functioning properly. NRG maintenance staff raise the chimney drains as appropriate when the ash lifts approach the top of the drain pipe.
- Gabion Diversion Structures: The four gabion diversion structures appear to be constructed and functioning properly. Recent CCR storage activities have begun to tie the CCR lifts into the diversion structures, as designed.
- Leachate Piping: Visible HDPE leachate piping downstream of the Cell B-1A and B-1B sumps appears to be in good condition. The gate valves on the Cell B-1B leachate piping are in good condition.
- Stockpiles: All stockpiles are stabilized with vegetation, mulch and/or temporary matting with no signs of erosion. The PEPCO stockpile is being used; it is surrounded by super silt fence in an acceptable condition.

3.3 Sediment and Erosion Control Measures

- Proper sediment control measures are being employed as required in the operating portion of Cell B. Super silt fence, straw bale dikes, and erosion control matting are being properly employed at potential points of erosion.
- Super silt fence is installed around the PEPCO stockpile.
- Rip rap aprons are in good condition and functioning properly.
- Hauling trucks are washed at the dedicated truck wash station before leaving the site.

3.4 Storm Drainage Features

- Roadside Drainage Channels: Drainage channels along the access roads are well vegetated and stabilized with no signs of erosion.
- Sediment Trap: Influent channels are stabilized with straw bale dikes, vegetation, matting; the pond berm is stabilized with vegetation; the outfall channel is stabilized with rip rap and vegetation with erosion control matting with minimal signs of erosion.
- Interior Drainage Channels: Interior drainage channels are stabilized with vegetation and erosion control matted with minimal signs of erosion.
- Run-on Control: The gabion diversion structures and chimney drains have been installed to mitigate stormwater run on from the historic operating areas of Cell B. The chimney drains and gabion diversion structures appear to be constructed and

functioning properly.

- Pond 3: Leachate from Cell B and Cell B-1A drains to Pond 3, the site's leachate storage pond, by way of an 8-inch HDPE leachate transmission pipe. Leachate discharges from the pipeline at the eastern end of Pond 3 onto a rip rap apron. The rip rap apron and pond's outfall structure appear to be in good condition and operating properly. NRG's maintenance contractor provides routine maintenance and erosion control for the rip rap outfall apron from Pond 3.

3.5 Recordkeeping

- Daily Operations and Maintenance inspection reports are kept in a binder in the onsite NRG MD Ash office trailer. The reports are up to date.
- Weekly CCR inspection reports are up to date. They are stored in a binder in the onsite NRG MD Ash office trailer.

4.0 Westland Cell B Operational Areas Overview

During 2016, the operating portion of Cell B has received CCR material from the Dickerson Generating Station, which has been installed in lifts in the operational portions of Cell B and Cell B-1A. The geometry of the site has not changed during 2016 other than the vertical rise of the CCR filling areas in Cell B and Cell B-1A.

The operating portion of Cell B is well maintained, and drainage and erosion control features appearing to functioning properly. There did not appear to be any areas in Cell B that represent actual or potential areas of structural weakness of the CCR unit. There are no existing conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit.

Name: Jeffrey Hutchins

Date: 1/4/17

Maryland PE #: 13186




12420 Milestone Center Drive, Suite 150
Germantown, MD. 20876
Tel: 301.820.3000 Fax: 301.820.3009
www.aecom.com

ATTACHMENT A

**NRG WESTLAND ASH SITE
ANNUAL CCR INSPECTION CHECKLIST**



ANNUAL CCR STORAGE SITE INSPECTION CHECKLIST

Facility Name: Westland Ash Storage Facility			
Address: 20831 Martinsburg Road, Dickerson, Maryland 20842			
Date: 12/15/2016	Time: 9:45	Weather: Partly cloudy, 28°	
Inspection Representatives			
NRG: Walter Johnson, Mike Elrod			
AECOM: Jeffrey Hutchins		PE License #: 13186	
Other:			
Site Data			
Cell ID: Cell B	Acreage: 64.4 acres		
Operational Area of Cell: 49.4 acres	Closed Area of Cell: 24 acres		
Operational Criteria			
	Acceptable	Needs Improvement	Comments
1. Security/Entrance Gate	√		
2. Condition of Access Road	√		
3. Operating Cell	√		
3a. Condition of Exposed Ash	√		
3b. Condition of Periodic Cover Soils	√		
3c. Acceptable Dust Control Measures	√		
3d. General Integrity of Operating Cell/Signs of Distress	√		
3e. Condition of Chimney Drains	√		
3f. Condition of Erosion Control Measures	√		
3g. Visual signs of Erosion or Washouts	√		
3h. General Condition of Leachate Piping, Cleanouts	√		
4. Stormwater Management	√		
4a. Condition of Ditches, Diversions, Letdowns	√		
4b. Condition of Run-Off Control System	√		
4c. Condition of Perimeter Areas (stable, unstable, erosion, etc.)	√		
<u>Comments:</u> <p>The operating portion of Cell B is well maintained with no areas of instability or potential weakness. There are no conditions at the present time that are disrupting or have the potential to disrupt the operation or safety of Cell B.</p>			
Jeffrey Hutchins			12/15/2016
Print Name of Engineer Completing Form	Signature		Date