



Proactive by Design

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CONSTRUCTION  
MANAGEMENT

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October 14, 2016  
File: 21.0056797.00

Mr. Kevin Schroeder  
Kevin.schroeder@nrgenergy.com  
Huntley Power LLC  
Tonawanda, NY 14150

Re: Existing CCR Surface Impoundment Closure Plan  
Huntley Generating Station South Settling Pond  
Tonawanda, New York

Dear Mr. Schroeder:

GZA GeoEnvironmental of New York (GZA) presents this Surface Impoundment closure plan to Huntley Power LLC (Huntley) for the existing coal combustion residuals (CCR) surface impoundment located at the Huntley facility in Tonawanda New York (Site). This closure plan is required by the United States Environmental Protection Agencies (USEPAs) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, as presented in the Federal Register Volume 80 No 74 dated April 17, 2015. In accordance with the CCR Rule (40 CFR §257.102(b)), owners/operators of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally good engineering practices.

In accordance with §257.102(b)), the closure plan must include, at a minimum, the information specified in paragraphs (b)(1)(i) through (vi) of section 257.102.

### Site Background

The CCR surface impoundment for the Site is identified as the South Settling Pond that was used for discharge of plant generated process water including CCR sluice water and non-CCR water associated from sump pumps, non-contact cooling water, storm water and other various sources. As of February 29, 2016, the facility eliminated discharge of the CCR sluice water into the South Pond; however, plant-associated non-CCR water continues to be discharged. The outfall for the South Pond is identified as Outfall 008 and is regulated under the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) permit #9-1464-00130/00003.

The limits of the South Settling Pond are shown on the attached Figure 1 – Site Plan.



Information required by §257.102(b)(i) through (vi) for the required closure plan is as follows.

### **1. Narrative of Closure - §257.102(b)(1)(i)**

The Huntley CCR surface impoundment (identified as the South Settling Pond) will be closed by dewatering the impoundment and leaving the CCR in place. The closure will be performed in accordance with §257.102(d) and will include a specific final cover system required for CCR left in place that will also comply with its NYSDEC permit specific requirements. As the Site outfall #008 will be removed and backfilled with appropriate fill material, the final cover will be sloped in a direction to allow surface runoff drainage to flow towards a SPDES permitted outfall. The closure activities will include grading fill material to acceptable grades for closure and installation of the final cover. In accordance with 257.102(b)(3) this plan will be amended to provide additional details after the final closure design has been completed as this initial plan is based on the best available information to date.

### **2. CCR Removal and Decontamination – §257.102(b)(1)(ii)**

CCR from the Huntley surface impoundment will be left in place and covered in accordance with §257.102(d); therefore, large scale CCR removal and decontamination is not applicable for this closure plan. It should be noted that as part of the final cover system requirements necessary for the surface impoundment process may require the removal and dewatering of remaining CCR. This material may be removed from the South Pond for dewatering and returned and compacted prior to closure or may be removed from the South Pond, dewatered and disposed of at the Huntley Solid Waste Management facility CCR landfill.

### **3. Final Cover Requirements – §257.102(b)(1)(iii)**

As the CCR will remain in place, the surface impoundment will be closed with a final cover system that meets the requirements specified in §257.102(d) and the NYSDEC SPDES permit.

Once the non-CCR water is able to be eliminated or diverted from discharging into the surface impoundment, the pond will be drained using the existing outlet structure (identified as outfall #008) with the assistance of portable pumps when the water level drops below the outfall pipe invert elevation. The pumped water will be run through a filtration process (e.g., filter sock) prior to off-site discharge. Once the pond is sufficiently dewatered, remaining materials will be stabilized, compacted or removed for disposal at the facilities off-site CCR landfill in an effort to provide a structurally sound and stable matrix for the final cover system. Additionally, the existing 96-inch outfall pipe (Outfall #008) will be dismantled and removed from the embankment located between the pond and the Niagara River in accordance with 6 NRR-NY 750-2.11 Closure Requirements for Disposal Systems. The remaining void will be backfilled and compacted with a suitable material of sufficient strength and stability to repair the embankment area. The remaining stable CCR and/or native soil exposed in the bottom of the pond area will be allowed to dry prior to backfilling activities that include placement of suitable fill materials that



will comply with the requirements of §257.102(d). In an effort to meet these requirements, the surface impoundment area will require fill material to be placed and compacted in controlled lifts to an elevation that meets the surrounding grades proximate to the pond (assumed 575 ft ±) along with a minimum slope to allow for runoff to be directed towards a remaining SPDES permitted outfall other than #008 as that outfall pipe will be removed from service as part of the surface impoundment closure.

The final cover system will be constructed to meet the specific performance requirements of §257.102(d)(i) through (v) and will consist of the following criteria.

- (i) The cover system will maintain a permeability that is less than the permeability of the natural subsoils or a permeability of no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less in an effort to reduce the potential for liquid infiltration through the final cover.
- (ii) The final cover will be sloped at no less than 2% grade in an effort to promote surface runoff drainage towards the appropriate SPDES permitted outfall.
- (iii) Measures used to provide slope stability and to prevent sloughing or movement of the final cover will include construction of the minimum 2% slope to allow for drainage of the final cover and appropriately placed and compacted fill material.
- (iv) In an effort to minimize further maintenance of the CCR unit, the top soil portion of the final cover will be seeded to promote vegetative growth on the surface to provide additional stability and erosion protection.
- (v) Closure will be initiated after all Site non-CCR water can be redirected to another Site designated outfall. Once the non-CCR is redirected, the estimated closure date is assumed to be in 2019.

In accordance with 257.102(d)(2) requiring drainage and stabilization of the CCR surface impoundments:

- (i) free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues. This requirement will be achieved by dewatering the impoundment and either removing remaining wet sediments for disposal into the CCR landfill or by solidifying/stabilizing remaining CCR into a stable matrix using appropriate fill materials.
- (ii) Remaining wastes must be stabilized sufficient to support the final cover system. This requirement will be achieved by dewatering the impoundment and reworking and compacting the drained CCR to a suitable matrix that will support the final cover system.



In accordance with 257.102(d)(3) the final cover system:

- An infiltration layer consisting of a minimum of 18-inches of earthen material (with permeability no greater than  $1 \times 10^{-5}$  cm/s) will be used to minimize potential for infiltration of liquids (i.e., stormwater) and the final cover will be graded with an appropriate slope to facilitate drainage runoff towards a Site SPDES permitted outfall.
- A minimum of 6-inches of vegetated topsoil will comprise the top surface of the cover system for erosion control purposes. The final grades of the seeded topsoil will be sloped (2% or greater) to allow for erosion control and appropriate runoff in the direction of the approved drainage area location.
- This final cover plan will be amended when the final design for the surface impoundment is completed.

#### **4. Maximum CCR Inventory - §257.102(b)(1)(iv)**

The maximum CCR inventory at the bottom of the surface impoundment has been estimated at about 23,000 cubic yards and is based on an approximate volume of sediment that was last dredged from the impoundment in December 2008.

#### **5. Maximum Area Requiring Final Cover – §257.102(b)(1)(v)**

Based on a review of the area of the surface impoundment, a cover system area has been estimated to be about 200,000 square feet (or about 4.6 acres).

#### **6. Closure Schedule – §257.102(b)(1)(vi)**

Final closure of the ponds must commence 30 days after the ash filter ponds receive the known final receipt of CCR or any non-CCR waste stream. Prior to commencing closure construction, permit-level design drawings, technical specifications and QA/QC plan documents may be prepared to support applications for required local, state, and federal permits. Closure construction design documents will include construction-level design drawings, technical specifications, QA/QC plan, and contract bid documents, and required notifications to NYSDEC. At this time, the closure of ash filter ponds is anticipated to commence in 2018. The following closure activities must be completed within five years of commencing closure activities [§257.102(e) and (f)].

- Apply for and receive the appropriate permits needed to commence closure activities (including preparing construction bid specifications and contract work);
- Prepare the site to comply with applicable regulations;
- Dewater and stabilize CCR and sediment;
- Backfill pond areas with soil and fine-grade to provide positive drainage; and
- Install final cover system.



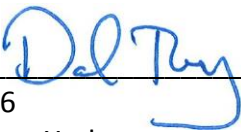
Contractor Specifications and Construction Plans  
Redirecting Non-CCR Water from South Pond  
Mobilization and Dewatering  
Stabilization/Grading of CCR  
Installation of Final Cover  
NYSDEC Approval of Closure

January 2018 to February 2018  
March 2018  
April 2018 to May 2018  
June 2018 to August 2018  
August 2018 to November 2018  
January 2019

**PROFESSIONAL ENGINEER CERTIFICATION**

The undersigned registered professional engineer is familiar with the requirements of §257.102 *Criteria for conducting the closure or retrofit of CCR Units*. The undersigned registered professional engineer attests that this CCR Surface Impoundment Closure Plan has been prepared in accordance with good engineering practice, including consideration of applicable state regulatory requirements and meets the requirements of §257.102(b), and that this plan is adequate for NRG - Huntley Power. This certification was prepared as required by §257.102(b)(4).

Name of Professional Engineer: Daniel J. Troy, P.E.  
Company: GZA GEOENVIRONMENTAL OF NEW YORK

Signature:   
Date: October 14, 2016  
PE Registration State: New York  
PE Registration Number: 081139-1




Professional Engineer Seal:

We trust this information satisfies your needs for this project.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

  
Daniel J. Troy, P.E.  
Senior Project Manager

  
Bart A. Klettke, P.E.  
Principal

Attachments: Figure 1 - Site Plan

© 2016 - GZA GeoEnvironmental of NY GZA-K:\PROJECTS\66700s\66757 Huntley Power LLC CCR Certification\Site Annual Inspection\Figure 1 Annual Inspection\Oct 2016.dwg [FIGURE 1] October 12, 2016 - 4:50pm ltheadere.klt@w



NORTH EQUALIZATION  
BASIN (#1):

SOUTH ASH SETTLING BASIN  
ESTIMATED BOTTOM ELEV.: 564.5'±  
ESTIMATED BOTTOM AREA: 114,000 SQ. FT.  
ESTIMATED TOP ELEV.: 569.0'±  
ESTIMATED TOP AREA: 200,000 SQ. FT.


SOUTH EQUALIZATION  
BASIN (#2)

OUTFALL 008

NIAGARA RIVER  
FLOW

RIVER ROAD



NO.	ISSUE/DESCRIPTION	BY	DATE
<b>CCR SURFACE IMPOUNDMENT CLOSURE PLAN HUNTLEY POWER PLANT TONAWANDA, NEW YORK</b>			
<b>SOUTH SETTLEMENT POND</b>			
PREPARED BY:  <b>GZA GeoEnvironmental Inc.</b> Engineers and Scientists 535 WASHINGTON STREET 11th FLOOR BUFFALO, NEW YORK 14203 (716) 885-2300		PREPARED FOR: <b>HUNTLEY POWER</b>	
PROJ MGR: BAK	REVIEWED BY: BAK	CHECKED BY: DJT	<b>FIGURE 1</b>
DESIGNED BY:	DRAWN BY: TAK	SCALE: AS SHOWN	
DATE OCTOBER 2016	PROJECT NO. 21.0056797.00	REVISION NO.	

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