



**Amended  
CCR Surface Impoundment Closure Plan**

**W. A. Parish Electric Generating Station  
Thompsons, Texas**

**February 2020**

***Prepared For***

**NRG Texas Power LLC**

# CERTIFICATION

## Amended CCR Surface Impoundment Closure Plan

### W. A. Parish Electric Generating Station

I, the undersigned Texas Professional Engineer, hereby certify that I am familiar with the technical requirements of Title 40 Code of Federal Regulations Part 257 Subpart D (§257). I certify that it is my professional opinion that this document meets the requirements for a written closure plan pursuant to 40 CFR 257.102. I certify that this document was prepared by me and that I am a registered professional engineer under the laws of the State of Texas.

For the purpose of this document, "certify" and "certification" shall be interpreted and construed to be a "statement of professional opinion". The certification is understood and intended to be an expression of my professional opinion as a Texas Licensed Professional Engineer, based upon knowledge, information, and belief. The statement(s) of professional opinion are not and shall not be interpreted or construed to be a guarantee or a warranty of the analysis herein.

Richard D. Varnell  
Printed Name of Professional Engineer

Richard Varnell  
Signature of Professional Engineer

135525  
Texas License Number

2/27/2020  
Date



FIRM #3775

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## 1. INTRODUCTION & PURPOSE

### **Federal CCR Rule Reference: 40 CFR 257.102(b)**

Pursuant to 40 CFR 257.102(b), this document provides the written Amended Closure Plan for the following existing coal combustion residual (CCR) surface impoundments at NRG Texas Power LLC's (NRG) W. A. Parish Electric Generating Station:

- FGD Emergency Pond, and
- Air Preheater Pond.

NRG intends to close these existing CCR surface impoundments through removal of the existing CCR contained therein at the time of closure and decontamination of all areas affected by releases from the CCR units pursuant to 257.102(c). This Amended Closure Plan does not differentiate between the individual impoundments.

It should be noted that NRG is currently planning to retrofit both surface impoundments after completing the closure activities described in this Amended Closure Plan per 257.102(k). New liner systems will be installed per 257.72.

## 2. CLOSURE PLAN NARRATIVE DESCRIPTION

### **Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(i), 40 CFR 257.102(b)(1)(ii), and 40 CFR 257.102(c)**

The anticipated closure by removal of CCR and decontamination of all areas affected by releases of CCR for the surface impoundments at the W. A. Parish Electric Generating Station will be performed in accordance with the following sequential steps:

1. Diversion of CCR, low volume waste, and/or storm water streams to the appropriate Station facilities.
2. Removal of process piping (where applicable).
3. Dewatering of each CCR surface impoundment and in situ CCR sufficiently to allow for removal of the CCR.
4. Removal of CCR from each CCR surface impoundment for transportation to and disposal in a permitted landfill or for beneficial use.
5. Removal of any protective cover layers (e.g., riprap) along the impoundment's bottom and/or side slopes of each CCR surface impoundment (where applicable).
6. Based on visual observation of CCR, decontamination of the clay liner and all areas affected by CCR releases by overexcavating an additional 6-inch thickness of material.
7. Compliance with Texas Commission on Environmental Quality (TCEQ) requirements for CCR surface impoundment closure if applicable.
8. Continuation of groundwater monitoring at the former CCR surface impoundments to verify groundwater monitoring concentrations do not exceed the groundwater protection standards (GWPS) established per 257.95 for the constituents listed in Appendix IV to 40 CFR Part 257.

9. Certification by a qualified professional engineer in the State of Texas that the closure has been completed in accordance with the Amended Closure Plan in effect at that time.
10. Retrofitting the surface impoundments with new liner systems compliant with 257.72.
11. Returning the reconstructed impoundments to use as CCR surface impoundments.

Restoration of the areas formerly occupied by the CCR surface impoundments will be contingent upon NRG's intended use for the areas after the successful closure. NRG will select the method of final restoration during implementation of the closure activities for each of the impoundments, and this Amended Closure Plan will be subsequently amended as appropriate.

### 3. REMOVAL & DECONTAMINATION PROCEDURES

#### **Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(ii) and 40 CFR 257.102(c)**

Closure of the existing CCR surface impoundments at the W. A. Parish Electric Generating Station will follow the sequential steps as outlined in Section 2 of this Amended Closure Plan.

After ceasing the flow of CCR and non-CCR wastestreams into the impoundments, NRG will dewater each CCR surface impoundment and the CCR stored therein. The free liquid may be reused in plant operations or possibly discharged as allowed by the Texas Pollutant Discharge Elimination System (TPDES) permit in effect at the time of closure. Best management practices (BMPs) will be deployed. Perimeter drainage ditches may be cut through the *in situ* CCR within the impoundments to further passively dewater the material using gravity prior to removal. Also, CCR may be piled within the CCR surface impoundments to promote dewatering.

Once the CCR within the impoundments has been sufficiently dewatered for transportation and disposal purposes, mechanical excavators will be used to remove the CCR, protective layers (e.g., riprap), and any *in situ* clay or liner material that became intermixed with CCR within the impoundments. Based on visual observation for CCR, excavation will continue until CCR has been removed. The *in situ* clay or liner material and all areas affected by CCR releases will then be overexcavated a minimum additional depth of 6 inches to complete decontamination of the impoundments. Additional underlying material may also be excavated to achieve the required grades based on the impoundment retrofit plans. The excavated material will be placed into haul trucks for disposal at a permitted landfill or a beneficial use project. At the time of closure, the Station may elect to dispose of the excavated material at their on-site permitted industrial non-hazardous waste landfill (Unit 001). TCEQ required closure activities will also be performed during the decontamination phase of the project if required.

The retrofit of the surface impoundments will include the installation of a new liner system, liner protection system, outlet structure (if applicable), and piping (if applicable). The retrofit will be performed in accordance with the retrofit plan.

The ongoing groundwater monitoring program for both impoundments is currently being performed per 257.94, which is anticipated to continue during the active life of each impoundment and during the closure activities described in this Amended Closure Plan. Following completion of the closure activities and retrofit of the impoundments, groundwater monitoring will continue to be performed per the CCR Rule.

## 4. ESTIMATED MAXIMUM INVENTORY OF CCR

### Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(iv)

A reasonably conservative estimate of the maximum inventory of CCR within the CCR surface impoundments can be calculated by considering that 50 percent of each impoundment's capacity is filled with CCR prior to being removed. This is conservative because NRG typically removes CCR from the impoundments before the accumulation of CCR reaches this volume. Table 1 provides the estimated maximum inventory of CCR for each CCR surface impoundment.

**Table 1: Estimated Maximum Inventory of CCR  
Within Each CCR Surface Impoundment**

CCR Surface Impoundment	Estimated Maximum Inventory of CCR (cy)
FGD Emergency Pond	1,500 <sup>1</sup>
Air Preheater Pond	3,000 <sup>2</sup>

Notes: 1) Based on one-half of the 1.73 acre-foot volume of the FGD Emergency Pond reported in *Analysis of Hydrologic and Hydraulic Capacity for CCR Surface Impoundments, W. A. Parish Station, Units 5, 6, 7, & 8*, Sargent & Lundy LLC, September 30, 2016.

2) Based on one-half of the 3.7 acre-foot volume of the Air Preheater Pond reported by NRG.

## 5. CLOSURE SCHEDULE

### Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(vi)

Closure of the existing CCR surface impoundments is estimated to require approximately one year from the date that CCR and non-CCR wastestreams cease being discharged into the impoundments. Table 2 provides a listing of major milestones necessary to close the CCR units, with an estimated duration and an estimated year of completion for each milestone. NRG anticipates that all closure activities for the CCR surface impoundments will be complete by 2021.

Table 2: Planning Level Schedule for Closure of Existing CCR Surface Impoundments		
Task Description	Estimated Duration	Estimated Completion Year
Place Amended Closure Plan into the Facility Operating Record (FOR).	1 Day	2020
Send Notification of the Availability of the Amended Closure Plan to the TCEQ and Post the Amended Closure Plan to NRG's CCR Website.	1 Month	2020
Final Engineering / TCEQ Notification if Required.	3 Months	2020
Termination of CCR, Low Volume Waste and Storm Wastestream Discharges.	1 Month	2020

Table 2: Planning Level Schedule for Closure of Existing CCR Surface Impoundments		
Task Description	Estimated Duration	Estimated Completion Year
Place Notification of Intent to Close into the FOR.	1 Month	2020
Dewatering of the CCR Surface Impoundments and <i>In Situ</i> CCR.	3 Months	2020
Removal of CCR, Protective Cover Layer, and Intermixed Soils or Materials (If Applicable) and Decontamination of the <i>in situ</i> clay and liner materials and All Areas Affected by CCR Releases by Overexcavation of a Minimum 6-inch Thickness of Material, based on Visual Observation of CCR. Also Implement TCEQ Closure Requirements During this Period if Required.	3 Months	2020
Installation of Retrofit and Restoration of Former CCR Surface Impoundment Areas.	3 Months	2020
Certification of Completion of Closure by a Qualified Texas Professional Engineer.	1 Month	2021
Place Notification of Completion of Closure into the FOR.	1 Month	2021
Send Notification of Completion of Closure to TCEQ and Post Notification of Completion of Closure to NRG's CCR publicly accessible CCR Website.	1 Month	2021

## 6. AMENDMENTS TO CLOSURE PLAN

### Federal CCR Rule Reference: 40 CFR 257.102(b)(3)

NRG will amend this Amended Closure Plan prior to a change in the operation of any of the existing CCR surface impoundments that would substantially affect the written Amended Closure Plan in effect or after an unanticipated event necessitates a revision to the written Amended Closure Plan. If this written Amended Closure Plan is revised, NRG will retain a qualified professional engineer licensed in the State of Texas to provide written certification that amendments to this Amended Closure Plan meet the requirements of 40 CFR 257.102(b).

## 7. COMPLETION OF CLOSURE ACTIVITIES

### Federal CCR Rule Reference: 40 CFR 257.102(f)(3)

Upon completion of closure for each CCR surface impoundment, NRG will obtain a certification from a qualified professional engineer licensed in the State of Texas verifying that each CCR surface impoundment has been closed in accordance with the Amended Closure Plan in effect at the time of closure.