NRG Texas Power LLC
Limestone Generating Station, Units 1 & 2

Initial Structural Stability Assessment for CCR Surface Impoundments

Prepared by

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1 PURPOSE

Pursuant to 40 CFR 257.73(d), this document provides the initial structural stability assessment for the existing coal combustion residual (CCR) surface impoundments at NRG Texas Power LLC's (NRG) Limestone Generating Station. The following existing CCR surface impoundments were assessed:

- Unit ST-18,
- Unit 003 Secondary E Pond,
- Unit 019 E Pond, and
- Unit 002 Storm Water Pond.

NRG has evaluated the CCR landfill stormwater run-off pond (002) and determined that the subject surface impoundment does not meet the definition of a CCR surface impoundment based on EPA guidance. This determination is based on:

1. the fact that the CCR landfill stormwater run-off pond (002) is not designed primarily to hold an accumulation of CCR and liquid
2. the primary function of the landfill stormwater run-off pond (002) is not storage or disposal of CCR.

For the aforementioned reasons, NRG will no longer manage the CCR landfill stormwater run-off pond (002) as a CCR surface impoundment after October 17, 2016.

2 STRUCTURAL STABILITY ASSESSMENT RESULTS

In addition to the annual inspection by a qualified engineer, NRG has performed weekly inspections and supplemental walkdowns to assess the structural stability of the four existing CCR surface impoundments. A review of available historical data, original design drawings, and other historical records was also performed. The results of these structural stability assessments are presented below in accordance with the requirements of 40 CFR 257.73(d).

2.1 STABLE FOUNDATIONS & ABUTMENTS

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(i)

No evidence of foundation deformation, tension cracking, or other observable deficiencies have been observed or identified. This stability of the foundation is demonstrated over the approximately 30 year operating history of the impoundments with no known indicators of unstable conditions. Furthermore, none of the existing CCR surface impoundments have abutments to assess.

2.2 ADEQUATE SLOPE PROTECTION

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(ii)

Where required, adequate slope protection (e.g., vegetation, concrete aprons, fabriform, and riprap) was provided to protect against surface erosion, wave action, and adverse effects of sudden drawdown.

2.3 COMPACTED DIKES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(iii)

The original construction documents indicate that the earthen materials used to construct the dikes were mechanically compacted to designed densities and then tested to verify the specified degree of compaction had been achieved.

2.4 VEGETATED SLOPES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(iv)

Slopes of the impoundments appear to be appropriately vegetated and, when required, re-seeded in order to maintain erosion protection. The slopes are regularly mowed to control the height of the vegetation.

2.5 SPILLWAY

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(v)

None of the existing CCR surface impoundments have spillways. However, an evaluation of the impoundment's hydrologic and hydraulic capacities found that each CCR surface impoundment is capable of collecting and controlling the inflow design flood events specified in 40 CRF 257.82(a)(3). The dikes of each surface impoundment are not overtopped since the estimated maximum water level from the inflow design flood remains lower than the top of dike elevation. Thus, no spillways are required.

2.6 HYDRAULIC STRUCTURES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(vi)

Hydraulic inflow and outflow structures that underlie the base or pass through the dikes of the CCR surface impoundments appear to be in good working order and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation and lodged debris.

2.7 ADJACENT WATER BODIES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(vii)

None of the existing CCR surface impoundments are located adjacent to bodies of water which pose substantial risk of fluctuating water heights causing outboard slope saturation and subsequent dike destabilization.

3 CORRECTIVE MEASURES

Federal CCR Rule Reference: 40 CFR 257.73(d)(2)

No structural deficiencies were identified in these assessments of the four applicable CCR surface impoundments at the Limestone Generating Station, thus no corrective measures are recommended.

4 CONCLUSIONS

The structural stability assessments confirm that the four applicable CCR surface impoundments at the Limestone generating Station – Unit ST-18, Unit 003 Secondary E Pond, Unit 019 E Pond, and Unit 002 Storm Water Pond – have been designed, constructed, operated, and maintained to provide structural stability consistent with recognized and generally accepted good engineering practices.

5 CERTIFICATION

Federal CCR Rule Reference: 40 CFR 257.73(d)(3)

This initial assessment was conducted in accordance with the requirements of 40 CFR 257.73(d)(3).

I certify that this document was prepared by me or under my supervision and that I am a registered professional engineer under the laws of the State of Texas.

This document is released for use under the authority of James H. Staehlin, Texas PE # 87527on October 7, 2016. Sargent & Lundy LLC Texas Registered Engineering Firm # F-2202.

Certified by: JAMES H. STAEHLIN Date: 10-7-2016

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