



Stantec Consulting Services Inc.
3052 Beaumont Centre Circle, Lexington KY 40513

October 5, 2018
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Revision 0

Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402

**RE: Seismic Impact Zones
Bottom Ash Pond
EPA Final Coal Combustion Residuals (CCR) Rule
TVA Cumberland Fossil Plant
Stewart County, Tennessee**

1.0 PURPOSE

As described in 40 CFR § 257.63(a), an owner or operator of an existing CCR surface impoundment is required to demonstrate that the unit is not located in seismic impact zones unless the unit meets certain requirements. This letter documents Stantec's certification that the Bottom Ash Pond at the TVA Cumberland Fossil Plant (CUF) complies with the location restrictions for seismic impact zones in the EPA Final CCR Rule at 40 CFR § 257.63(a).

2.0 SUMMARY OF FINDINGS

Site-specific seismic hazard analyses were performed to determine appropriate earthquake motions for the demonstration. The slope stability analysis considered peak accelerations associated with an earthquake having a 2% probability of exceedance in 50 years (earthquake return period of about 2,500 years). At the site, this corresponds to a 6.99 M_w (moment magnitude) event with a peak horizontal acceleration of 0.187g in rock (Reference: Geocomp (2016). "Initial Seismic Safety Factor Assessment EPA Final CCR Rule Cumberland Fossil Plant – Bottom Ash Pond Cumberland City, Tennessee," Prepared for Tennessee Valley Authority, October). The peak horizontal acceleration in rock exceeds 0.10g; thus, the unit is within a seismic impact zone and further demonstration is required.

However, the Bottom Ash Pond does not have liners, covers, leachate collection systems, or surface water handling systems. The only relevant seismic failure mode would be a slope failure of the northeast perimeter dike, but this has already been addressed (and shown to be acceptable) in the initial seismic safety factor assessment (Geocomp 2016) to satisfy the requirements set forth in 40 CFR § 257.73(e). A copy of the initial seismic safety factor assessment (Geocomp 2016) is posted on the Cumberland Coal Combustion Residuals website.

Therefore, the Bottom Ash Pond at CUF meets the requirements set forth in 40 CFR § 257.63(a).



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3.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

I, Stephen Bickel, being a Professional Engineer in good standing in the State of Tennessee, do hereby certify, to the best of my knowledge, information, and belief:

1. that the information contained in this certification is prepared in accordance with the accepted practice of engineering;
2. that the information contained herein is accurate as of the date of my signature below; and
3. that the TVA CUF Bottom Ash Pond meets the requirements specified in 40 CFR § 257.63(a).

SIGNATURE

DATE

10/05/2018

ADDRESS:

Stantec Consulting Services Inc.
10509 Timberwood Circle Suite 100
Louisville, Kentucky 40223

TELEPHONE:

(502) 212-5075

ATTACHMENTS: None

