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VIA OVERNIGHT DELIVERY

May 25, 2017

Quang Ngyun
Kentucky Public Service Commission
211 Sower Blvd
Frankfort, KY 40602-0615

RECEIVED

MAY 26 2017

**PUBLIC SERVICE
COMMISSION**

**Re: Case No. 2016-00398
In the Matter of the Electronic Application of Duke Energy Kentucky, Inc. for a
Certificate of Public Convenience and Necessity Authorizing the Company to
Close the East Bend Generating Station Coal Ash Impoundment and For All
Other Required Approvals and Relief**

Dear Quang:

Per our telephone conversation please find enclosed STAFF-DR-01-003 SUPP Attachment in Excel format contained on CD.

Please let me know if you have any further questions.

Respectfully submitted,

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Enclosure

**Duke Energy Kentucky
Case No. 2016-00398
Staff First Set Data Requests
Date Received: January 17, 2017**

**STAFF-DR-01-003
SUPPLEMENTAL**

REQUEST:

Refer to the Application, Exhibit 7, page 11 of 157. Section 2.4.1 states, “A screening process was completed to evaluate potential combinations of technologies that were considered feasible to provide the performance required and that also were in operation at other facilities with sufficient experience to confirm their viability for long term successful operation.” Provide a copy of this analysis.

SUPPLEMENTAL RESPONSE:

The alternative technologies evaluated considered closure in place of the existing ash pond, which also necessitated construction of a separate new lined retention basin, new outfall, and water-redirection to the new pond for the remaining station waste water and storm water streams. The feasibility of constructing a new basin was speculative due to a lack of suitable land (flood plain, artifacts, and cemetery) on and surrounding the East Bend station that was sufficient for a new basin. Notwithstanding the issue of feasibility, the Company did perform a high-level evaluation of the costs of construction of a new separate basin and performed a comparison of these potential combinations of technologies. Please See Supplemental Staff DR-01-003 Attachment (a) and (b). When the cost of construction of a new basin was added to the evaluation, the selected strategy (Option 1A) of closure by removal and repurposing the existing pond as a lined basin was the least cost for Ash Basin Closure and Retention basin Construction Projects.

For ease of reference the Table 1 Planning Level Costs - below summarizes the data contained in Supplemental Staff DR-01-003-a. Strategies that included closure of the existing ash basin in place would require construction of a separate new lined basin for the other wastewater streams created at the station (coal pile run-off, leachate, sanitary, etc.). The Company's decision to pursue the Option 1A strategy was based upon comparison of planning level estimates (not fully engineered) that were performed as part of the initial evaluation. These planning level estimates assumed a new lined basin construction cost of approximately \$50 million. When the cost of the new basin was added to the comparison versus the cost of pond repurposing, the Option 1A (closure by removal and pond repurposing) selected was more favorable by more than \$20 million. Repurposing of the existing pond allows closure by removal and avoided the land availability challenges with having to construct an entirely new basin, and also relocates the ash to the new lined landfill

Table 2 Construction Level Costs - below compares fully engineered Option 1A costs as contained in the Company's CPCN application to estimated construction level costs of the closure in place strategies (Option 3A or 4) with construction of a separate new pond. The water redirection costs are assumed to be identical as with either strategy process modifications, storm water, and wastewater streams will need to be diverted. The projected construction level costs for the closure in place strategies were calculated using an escalation factor of 1.3 based upon the difference between planning level estimates of Option 1A to a fully engineered construction estimate. The construction level estimate factored in construction materials and activities that were not considered during the initial planning level estimates. The Company is confident that if a fully engineered closure in

place with separate new basin construction strategy were pursued, notwithstanding the issue of finding a suitable location for a new basin on or near the East Bend station, the total costs would far exceed the closure by removal and pond repurposing strategy ultimately selected as evident in the cost projections shown on Table 2.

TABLE 1: PLANNING LEVEL COSTS

| | Option 1A (CLOSURE BY REMOVAL) | Option 3A or 4 (CLOSURE IN PLACE) |
|---|---|--|
| Basin closure planning level cost BD-1 (pg. 21) | \$22,00,000 | \$14,500,000 |
| Planning level estimated basin cost for re-purposing existing basin (Supplemental Staff DR-01- 003-a) | \$21,250,000 ¹ | N/A |
| Planning level estimated basin cost for standalone new basin construction | N/A | \$50,000,000 ² |
| PLANNING LEVEL COMPARISON OF CLOSURE + RE-PURPOSING PROJECTS (Supplemental Staff DR-01-003- a) | \$43,750,000 | \$64,500,000 |

¹ Refer to values at the bottom of the spreadsheet attachment "DR01-003-a" \$21,250,000 = \$11,250,000 + \$5,000,000 + \$5,000,000 (Liner + Temp berm & water handling + Dewatering basins)

² Refer to values at the bottom of the spreadsheet attachment "DR01-003-a" \$50,000,000 = \$20,000,000 + \$15,000,000 + \$11,250,000 + \$5,000,000 (New outfall + new pumps & electrical for re-routing flows + Liner + Dewatering basins) Note: this estimate is partial and does not include excavation and soils for a new basin. Note: \$50,000,000 is a rounded value from \$51,250,000)

TABLE 2: CONSTRUCTION LEVEL COSTS

| | Option 1A (CLOSURE BY REMOVAL) FULLY LOADED CONSTRUCTION COST AS REFLECTED IN CPCN APPLICATION | Option 3A or 4 (CLOSURE IN PLACE) PROJECTED CONSTRUCTION COST USING ESTIMATED FACTOR OF 1.3 |
|---|--|---|
| Fully loaded basin closure construction cost (Attachment BD-02) | \$29,000,000 ³ | \$18,850,000 (\$14,500,000 ⁴ *1.3) |
| Fully loaded pond re-purposing project construction cost (BD-04) | \$36,100,000 ⁵ | |
| Projected fully loaded estimated basin cost for standalone new basin construction | | \$65,000,000 (\$50,000,000 ⁶ *1.3) |
| Fully loaded water re-direction project cost (BD-03) | \$28,100,000 ⁷ | \$28,100,000 (assumes no difference in water re-direction costs) |
| TOTAL | \$93,200,000 | \$112,000,000 |

PERSON RESPONSIBLE: Joseph Potts / Subhashini Chandrasekar

³ CPCN attachment BD-2 & Testimony BD-1 pg. 14

⁴ CPCN attachment BD-1 pg. 22

⁵ CPCN attachment BD-4 & Testimony BD-1 pg. 14

⁶ CPCN Supplement DR01-003-a and Table-1, footnote 2

⁷ CPCN attachment BD-3 & Testimony BD-1 pg. 14