COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Convert its Wet Flue Gas Desulfurization System from a Quicklime Reagent Process to a Limestone Reagent Handling System at its East Bend Generating Station and for Approval to Amend its Environmental Compliance Plan for Recovery by Environmental Surcharge Mechanism	)))))))))	Case No. 2024-00152

DUKE ENERGY KENTUCKY, INC.'S MOTION FOR LEAVE TO FILE SUPPLEMENTAL DIRECT TESTIMONY

Duke Energy Kentucky, Inc. (Duke Energy Kentucky or Company), by and through counsel, and for its Motion for Leave to File Supplemental Direct Testimony in the above-referenced matter, hereby states as follows:

1. On July 25, 2024, Duke Energy Kentucky filed its Application in this matter. The Company's Application requests that the Commission issue a Certificate of Public Convenience and Necessity to Convert its Wet Flue Gas Desulfurization System from a Quicklime Reagent Process to a Limestone Reagent Handling System at its East Bend Generating Station and for Approval to Amend its Environmental Compliance Plan for Recovery by Environmental Surcharge Mechanism (Limestone Conversion Project).

2. In conjunction with and in support of its Application, Duke Energy Kentucky filed, *inter alia*, the Direct Testimony of John Verderame and Chad Donner. Mr. Verderame serves as Vice President, Fuels & Systems Optimization for Duke Energy Corporation. Within his Direct Testimony, Mr. Verderame discusses a number of items, including, but not limited to, the contract

negotiations for the Company's magnesium enhanced lime (MEL) supply at its East Bend Generating Station. Further, Mr. Donner serves as a Principal Engineer for the Company and within his Direct Testimony, Mr. Donner discusses a number of items, including, but not limited to, the impacts to the limestone conversion cost savings.

3. Since the filing of its Application in September 2024, the current MEL supplier became aware of the Company's Application in this case and approached the Company, now willing to discuss a contract longer than the current two-year agreement with revised and more competitive pricing. Following that solicitation, the Company began discussions with the supplier to determine the potential for a longer-term MEL supply and whether the supplier could address the Company's concerns regarding price and scarcity.

4. The result of these discussions is a proposal for a new contract, which albeit less expensive than the current pricing, does not fully address the concerns identified by the Company in its Application and Direct Testimony.

5. So that the record of this case may accurately reflect the developments herein discussed, Duke Energy Kentucky requests that it be permitted to file the sworn Confidential Supplemental Direct Testimony of Mr. Verderame and Mr. Donner, the same being attached hereto as Exhibits A and B. Both Confidential Supplemental Direct Testimonies discuss Duke Energy Kentucky's decision to still seek its CPCN, and specifically addresses how the Limestone Conversion Project may be affected by the ongoing MEL-supply negotiations. Importantly, and as elucidated in Mr. Verderame's Confidential Supplemental Direct Testimony, Duke Energy Kentucky believes that a potential MEL supply agreement does not eliminate the need for the CPCN and the financial benefit from a lower priced MEL supply would be both minimal and likely temporary. For this reason, the Company considers the present filing primarily informational and

relevant to the Commission's consideration of the merits of the CPCN insofar as the Company's evaluation of alternatives but does not believe that the new information alters the need for the project in any meaningful way.

6. In addition to the aforementioned testimonies, the Company is also supplementing the following responses and accompanying attachments to data requests previously provided, which reflect necessary updates reflecting this newly obtained information including discussion and analysis of the revised MEL supply pricing from these recent negotiations:

a. Attorney General First Set: 4, 5, 6, 8, 11, and 12;

b. Attorney General Second Set: 2;

c. Sierra Club First Set: 7, 25, 40, 47, 48, 49, and 65;

d. Staff First Set: 2, 3, 5, 9, 21, and 22;

e. Staff Second Set: 1, 8, and 9.

WHEREFORE, on the basis of the foregoing, Duke Energy Kentucky, Inc. respectfully requests that the Commission enter an Order permitting the attached Confidential Supplemental Direct Testimonies to be filed in the record of this case.

Respectfully submitted,

DUKE ENERGY KENTUCKY, INC.

/s/ Rocco O. D'Ascenzo

Rocco O. D'Ascenzo (92796)
Deputy General Counsel
Duke Energy Business Services LLC
139 East Fourth Street, 1303-Main
Cincinnati, Ohio 45201-0960
Phone: (513) 287-4320
Fax: (513) 287-4385
E-mail: rocco.d'ascenzo@duke-energy.com

CERTIFICATE OF SERVICE

This is to certify that the foregoing electronic filing is a true and accurate copy of the document being filed in paper medium; that the electronic filing was transmitted to the Commission on November 1, 2024; and that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

/s/Rocco D'Ascenzo
Rocco D'Ascenzo

Exhibit A

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Convert its Wet Flue Gas Desulfurization System from a Quicklime Reagent Process to a Limestone Reagent Handling System at its East Bend Generating Station and for Approval to Amend its Environmental Compliance Plan for Recovery by Environmental Surcharge Mechanism	)	Case No. 2024-00152

PUBLIC SUPPLEMENTAL DIRECT TESTIMONY OF JOHN A. VERDERAME ON BEHALF OF DUKE ENERGY KENTUCKY, INC.

November 1, 2024

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PAGE

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John A. Verderame, and my business address is 525 South Tryon Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Progress, LLC (Duke Energy Progress), as Vice President, Fuels & Systems Optimization for Duke Energy Corporation (Duke Energy). Duke Energy Progress is a public utility that is an affiliate of Duke Energy Ohio, Inc. (Duke Energy Ohio or the Company), both of which are subsidiaries of Duke Energy Corporation (Duke Energy).

Q. ARE YOU THE SAME JOHN A. VERDERAME THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY IN THIS PROCEEDINGS?

A. The purpose of my supplemental direct testimony is to provide a status update on the magnesium enhanced lime (MEL) supply contract negotiations since the filing of this Application in July 2024.

II. UPDATE ON MEL CONTRACT NEGOTIATIONS SINCE FILING THIS APPLICATION

Q. WHAT IS THE STATUS OF THE COMPANY'S CURRENT LIME REAGENT CONTRACT?

A. The Company's current contract was executed through a public request for proposal (RFP) issued in 2023 for the MEL product. As I explained in my Direct Testimony, the Company received [redacted] bids for the requested and complying product. However, [redacted] The Company reached an interim agreement, but at more than double the price of the prior contract. [redacted] The supplier cited market prices and demand from other industries, including steel production and lithium battery production, as the primary driver for its cost increases.

Q. DID THE COMPANY EXPLORE A LONG-TERM CONTRACT WITH THE MEL SUPPLIER?

A. Yes. As I explained in my Direct Testimony, at the time of the Company's filing of this Application, the MEL supplier was unwilling to enter into a long-term contract due to anticipated future non-utility demand resulting in upward pressure on future pricing. Following the issuance of the RFP that resulted in the current supply contract, the Company attempted to negotiate a longer-term supply contract, at lengths greater than two-years with the supplier. As I previously testified, the supplier was unwilling to engage in these discussions.

However, as I explain below, recently, after the Company filed its Application in this proceeding, and after it became aware that the Company was seeking to convert East Bend's WFGD to a Limestone-based handling system, the current MEL supplier approached the Company to discuss the potential for a longer-term contract at more favorable pricing.

Q. PLEASE FURTHER EXPLAIN THE SUBSEQUENT DISCUSSIONS WITH THE SUPPLIER.

A. Sometime in early September 2024, the current MEL supplier became aware of the Company's CPCN application to convert to a limestone-based reagent handling process. The supplier contacted Duke Energy Kentucky and indicated that it was now willing to consider the possibility of a longer-term MEL supply contract and potentially more competitive pricing options. As a prudent operator, it was in the best interest of customers to have this discussion. Between mid-September into October, my team met with the supplier to discuss potential contract terms.

Q. WHY IS THIS SUPPLIER NOW INTERESTED IN A CONTRACT TERM LONGER THAN TWO YEARS?

A. As I previously stated, Duke Energy Kentucky made continuous attempts to negotiate a contract longer than two years and at more competitive pricing following its last RFP. Unfortunately, [redacted] and a need to maintain the MEL supply for East Bend's continued operation. It was only after the MEL supplier learned of the Company's Application to convert to a Limestone based WFGD process, and the possibility of more suppliers, greater competition, and the loss of a buyer for its

existing MEL product that this supplier became willing to consider alternatives terms and pricing.

Q. WHAT IS THE CURRENT CONTRACT OFFER?

A. [redacted]

Q. DO YOU BELIEVE THIS OFFER IS A REASONABLE ALTERNATIVE TO THE CPCN?

A. No. Duke Energy Kentucky recognizes the value of, and would execute, a lower cost contract greater than 24 months in length if the Commission were to deny the Application. However, the Company believes that a [redacted] agreement may not adequately protect customers from the risks that prompted the CPCN filing. This [redacted] MEL contract does not negate the continued fuel security risk stemming from the scarcity of the MEL product required to operate the WFGD. Additionally, customers remain at risk for future, and potentially significant price escalations due to a potential lack of a competitive market when the agreement comes up for renewal. This lack of availability may be further exacerbated by pending environmental regulations affecting lime manufacturing plants.[1] If this supplier were to cease operations for any reason, and no alternative MEL supplies are

[1] Lime Manufacturing Plants National Emission Standards for Hazardous Air Pollutants (NESHAP) | US EPA

available, East Bend is still at risk for not being able to operate in compliance with existing environmental regulations and would be forced to shut down. This would mean the Company would have to rely upon the PJM market to procure energy and capacity to serve its customers until it could acquire or construct replacement generation.

Q. WHY IS IT NOT REASONABLE FOR THE COMPANY TO ENTER INTO THE PROPOSED MEL AGREEMENT AND FILE ITS CPCN TO CONVERT TO LIMESTONE WFGD AT A LATER DATE IF NECESSARY?

A. This delay is not a reasonable option for several reasons. First, as discussed in witness Donner's supplemental direct testimony, should the CPCN be denied there are new MATs regulations effective July 2027 that would need to be addressed for East Bend to remain operational that would otherwise be provided as co-benefits of the limestone conversion. Second, one must consider the age of East Bend and its likely remaining operational life. Based upon current environmental regulations, and as discussed in the Company's IRP, the most recent update to the Clean Air Act dictates that East Bend must retire or convert to natural gas co-firing (dual fuel) or full natural gas burning by 2030. And under a dual fuel (coal and natural gas cofiring) scenario, East Bend would still have to retire by the end of 2038. Finally, the cost of the Limestone Conversion is likely to increase in the future due to supply chain tightening, construction costs and simple inflation. These three factors, additional new environmental regulations, approaching unit end of life and construction cost increases would make a Limestone Conversion a potentially more costly strategy for customers five years from now. The rate impact to customers

five years from now could be significant as there would be fewer years over which to spread the cost of the project for customers.

Q. HAS THE COMPANY UPDATED ITS ANALYSIS OF ALTERNATIVE COMPLIANCE OPTIONS WITH THIS NEW CONTRACT INFORMATION? PLEASE EXPLAIN.

A. Yes. The Company reran its stochastic production cost modeling to capture the projected impacts of the proposed reduction in MEL commodity costs on dispatch costs, native fuel costs, capacity factor and off system sales. Despite the tightened spread between the lime and limestone cases, customers continue to see a net decrease of $10.56/MWh in forecasted dispatch costs in the 2027 through 2029 operating period when operating on limestone. This now represents a 25% decrease from the projected [redacted] cost in the same period when operating on the MEL product under the newly proposed price. Stochastic production cost modeling shows the net reduction in variable operational costs to be approximately 73% or ~$9.95/MWh in reduced dispatch cost. The reduction in dispatch costs continues to result in increased economic dispatch of East Bend into the PJM market and reduced reliance on PJM resources to serve customer demand.

Comparisons of production cost modeling of the two scenarios continue to show on average a 17% increase in capacity factor in the limestone scenario for the 2027 through 2029 period, which translates to total average additional generation in the limestone case of ~1000 GWh over the three-year period. The cost to serve the Duke Energy Kentucky customer load continues to be reduced by an annual average amount of $3.1 million per year in fuel and purchase power, and $11.6 million in reagent costs from 2027 through 2029, with an additional approximate

$500 thousand of annual non-native off-system sales margin in the same period, for a total annual savings of $15.2 million per year. The system average fuel rate (exclusive of reagents) in the 2027 through 2029 period is projected to decline $0.75/MWh annually, primarily due to the continued reduction in PJM purchase volumes.

Q. WHAT IS THE IMPACT TO THE COMPANY'S OFF SYSTEM SALES MECHANISM, RIDER PSM?

A. In the Company's updated analysis, the increase in modeled off system sales in the 2027 through 2029 period only see a net increase of 309 GWhs. This results in net revenue from off system sales flattening to an average of approximately $500 thousand per year.

Q. DOES THE ANALYSIS INDICATE THAT THE POSSIBLITY OF A LOWER COST LONGER-TERM CONTRACT WILL OBVIATE THE NEED FOR THIS CPCN?

A. No, it does not. While this proposed contract is more favorable than the previous terms presented by the supplier, the Company still does not believe it represents the best interests of customers over the long-term. As previously stated, the purpose of this Application is to address the risks of price escalations impacting the economics of East Bend and the risk of a [redacted]. Even with a longer-term contract, there remains the same risks of price uncertainty once the contract term expires and the [redacted] of lime that the Company's application seeks to mitigate. Additionally, should the Company delay the conversion, the costs of converting the unit to limestone is likely to increase making the project more expensive, and is contingent on the supplier continuing to operate or that alternative

sources become available. The Company continues to believe that the Limestone conversion remains in the best interests of customers and should be approved.

III. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes.

VERIFICATION

STATE OF NORTH CAROLINA)
) **SS:**
COUNTY OF MECKLENBURG)

The undersigned, John A. Verderame VP Fuels and Systems Optimization, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental testimony and that it is true and correct to the best of his knowledge, information and belief.

John A. Verderame Affiant

Subscribed and sworn to before me by John A. Verderame on this 25th day of October, 2024.

NOTARY PUBLIC

My Commission Expires:

SHAMELL M WILSON
My Comm. Expires
NOTARY PUBLIC
July 06, 2026
MECKLENBURG COUNTY, NC

Exhibit B

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Convert its Wet Flue Gas Desulfurization System from a Quicklime Reagent Process to a Limestone Reagent Handling System at its East Bend Generating Station and for Approval to Amend its Environmental Compliance Plan for Recovery by Environmental Surcharge Mechanism	)	Case No. 2024-00152

PUBLIC SUPPLEMENTAL DIRECT TESTIMONY OF CHAD M. DONNER

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

November 1, 2024

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Attachment:

Supplemental Attachment CMD-1

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Chad M. Donner, and my business address is 139 E. 4th Street, Cincinnati, Ohio.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Business Services LLC (DEBS) as Principal Engineer. DEBS provides various services to Duke Energy Kentucky, Inc., (Duke Energy Kentucky or the Company) and other affiliated companies of Duke Energy Corporation (Duke Energy Corp.).

Q. ARE YOU THE SAME CHAD M. DONNER THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purpose of my supplemental direct testimony is to provide a status update on the impacts to the Limestone Conversion cost savings from the proposed lower cost magnesium enhanced lime (MEL) supply contract negotiations, discussed by Mr. Verderame in his supplemental direct testimony. In addition, I provide an update on emergent environmental mercury air toxics standards (MATs) regulations that the Limestone Conversion Project provides co-benefits for compliance and timing.

II. DISCUSSION

Q. SINCE FILING THE CPCN APPLICATION HAS THE COMPANY RECEIVED ANY ADDITIONAL LIME SUPPLY PROPOSALS?

A. Yes, in early September 2024, the current MEL supplier became aware of the Company's Application for a certificate of public convenience and necessity (CPCN) to convert to a limestone-based reagent handling process. As explained by Mr. Verderame in his Supplemental Direct Testimony, the MEL supplier, contacted Duke Energy Kentucky and indicated that it was now willing to consider the possibility of a longer-term MEL supply contract and potentially more competitive pricing options.

Q. HAS THE COMPANY UPDATED THE LIMESTONE CONVERSION ANALYSIS BASED UPON THE NEWLY PROPOSED CONTRACT INFORMATION?

A. Yes. Based upon these discussions, the Company did update its analysis to reflect the proposed lower MEL commodity cost at a [redacted]. Despite the tightened commodity price spread between the lime and limestone cases, the Limestone Conversion Project strategy would continue to reduce variable operating and maintenance (VOM) on the order of [redacted] and provide an estimated benefit of [redacted] savings in fuel cost and additional off system sales revenues. Shown below are the cost differences between the proposed quicklime and limestone reagents, inclusive of transportation.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (RFP)	2024 (RFP)	2025	2026	2027	2028	2029
	Current Contract Pricing											Future Projections				
Lime Cost ($/TN)	84.4	87.27	90.24	93.31	97.4	102.4	117.9	123.98	130.04	[redacted]						
Limestone Cost ($/TN)	11.96	9.89	9.4	10.15	11.21	12.92	15.21	14.27	15.37							
Difference ($/TN)	72.44	77.38	80.84	83.16	86.19	89.48	102.69	109.71	114.67							

Q. HOW WILL THE LIMESTONE CONVERSION CHANGE THE OPERATIONS OF EAST BEND AND/OR THE REAGENTS IT CONSUMES?

A. As I previously stated, currently the East Bend WFGD operates using MEL for SO_2 removal and quicklime for wet flue gas desulfurization (WFGD) byproduct waste

stabilization. Converting to limestone will not materially change the operation of the WFGD system, however, two additional reagents will be required for future LSIO operation. Limestone will replace MEL for SO_2 absorption in addition to a new PH buffer additive to help with the dissolution of limestone and SO2 removal performance. The WFGD byproduct waste stabilization process will remain unchanged and will continue to use quicklime for fixation albeit at a reduced rate due to the improved dewatering characteristics of the LSIO waste sludge. Additionally, the Limestone Conversion Project allows the Company to meet new MATs compliance regulations without any additional project scope. Given the MATs compliance date of July 2027, timely completion of the Limestone Conversion Project is essential to incurring the synergies between Project benefits and MATs compliance. Based on inherent process design differences the current MEL process does not support MATs compliance. The Company is evaluating potential alternatives to meet MATs compliance should the Company's CPCN Application be denied.

Q. DOES THE COMPANY HAVE ANY ESTIMATES ON AN APPROXIMATE COST OF A STAND-ALONE WFGD SYSTEM UPDATE TO COMPLY WITH MATS IF THE LIMESTONE CONVERSTION PROJECT CPCN IS DENIED?

A. As I previously stated, the Company is evaluating such alternatives and because the Limestone Conversion incorporated a compliance pathway, a separate project has not yet gone through the engineering scope process. Due to inherent design characteristics for a MEL WFGD, many of the same upgrades for conversion to limestone also provide a fine particulate capture and carryover benefit mainly related to the increase in liquid to gas ratio and flue gas contact coverage. That said, based upon the pending CPCN, which does include component upgrade co-benefits

that would meet the new MATs standard, a rough estimate can be extrapolated. By reviewing the current project scope included in my Direct Testimony, I determined the engineering, procurement and construction (EPC) Labor portion of the WFGD absorber area upgrades only and calculated the percentage of the costs. I then determined the EPC Material portion of the FGD absorber area upgrades only and calculated the percentage of the cost. I calculated the total Duke Energy Kentucky performed subcontract labor & material associated with the FGD absorber area only upgrades. I then ratioed all of the remaining values by the appropriate labor or material percentages to determine the total estimated project cost for the absorber area upgrades that would enable the current WFGD to be MATs compliant. The rough analysis shows that the project costs for the WFGD absorber only upgrades in the CPCN equate to approximately $25-30 Million of the total Limestone Conversion project scope. While not perfect, this does provide a very high-level assumption for potential costs of a stand-alone project. A copy of this analysis is included as Supplemental Attachment CMD-1

III. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

VERIFICATION

STATE OF OHIO)
)
COUNTY OF HAMILTON)

SS:

The undersigned, Chad Donner, Principal Engineer, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental testimony and that the therein are true and correct to the best of his knowledge, information and belief.

Chad Donner, Affiant

Subscribed and sworn to before me by Chad Donner, on this 24th day of October, 2024.

NOTARY PUBLIC

My Commission Expires: July 8, 2027

EMILIE SUNDERMAN
Notary Public
State of Ohio
My Comm. Expires
July 8, 2027

EB022450-1 East Bend, Limestone Conversion

MATs PortionTotal

Estimate Charge Type (Power Plan)	Description	Total		
AFUDC Debt (99970)	Power Plan - calculated labor loadings	$ -		
AFUDC Equity (99971)	Power Plan - calculated labor loadings	$ -		
Company Labor - Exempt (11000)	**PM, PE, Env-SME-Plant Support (2024 thru 2027)**	$ 3,675,000	$	690,428
Company Labor - Union (11002)	**Plant Support, Startup, Training (2026 & 2027)**	$ 438,125	$	82,311
Company Material (21000)	**Storeroom Supplies to Support Project, 2025 - 2027** (ie; valves, instr, flex conduit, piping & tubing fittings, ss tubing, elect matls, threaded rod, plugs, fire blanket, fire ext, safety supplies)	$ 375,000	$	67,301
Contract Labor (69000)	**Engineering (AECOM), Scheduler, Elec Engr, Mech Engr, Ctls Engr - 2024 thru 2027**	$ 7,250,000	$	1,362,069
Contract Labor (69000)	**Contract Labor-AECOM Est** (Demo, Civil, Concrete, Architectural, Painting & Coating, Mech Eqpt, Piping-Valves-Supports, Insulation, Elec Eqpt, Raceway-Cable-Conduit, Cable, Control & Instr)	$ 34,900,000	$	6,556,718
Contract Material (31000)	**Contract Material-AECOM Est** (Civil, Concrete. Architectural, Painting & Coating, Piping, Insulation, Elect Eqpt, Raceway-Cable Tray-Conduit, Cable, Control & Instr, Escalation)	$ 30,160,000	$	5,412,758
Labor Loadings - Exempt (18001)	Power Plan - calculated labor loadings	$ 2,590,000	$	486,587
Labor Loadings - Union (18001)	Power Plan - calculated labor loadings	$ 227,500	$	42,741
Labor Loadings (18000)	Power Plan - calculated labor loadings	$ 120	$	23
Contract Labor (69000)	**Subcontract - Duke Managed Scope**	$ 6,745,000	$	3,325,000
Contract Labor (69000)	**Subcontract - Owners Engineering**	$ 4,125,000	$	774,970
Contstruction Oversight	**Construction Indirects, IM / Construction Management**	$ 8,608,000	$	1,617,199
Contingency	**Contingency - Duke**	$ 18,200,000	**$**	**3,342,791**
Overhead (78000)	Power Plan - calculated overhead	$ 5,456,000	$	1,025,027
Stores Loading Allocation (28002)	Power Plan - calculated overhead	$ 72,000	$	13,527
Retirements - Overhead (78000)	Power Plan - calculated overhead	$ (2,231)	$	(419)
Retirements	**Demo Mag Lime Prep Eq.- Labor Cost + Constr Indirect & Contingency**	$ 2,750,000		
Retirements	**Demo Agitators/Other- Subcontract Cost**	$ 325,000		
Retirements - Salvage (99416)	**Demo Mag Lime Equipment - Scrap Value**	$ (81,969)		
	Total Cost =	**$ 125,812,546**	**$**	**24,799,031**

EPC Contract Labor - AECOM Estimate	
$ 3,850,000	Material Handling
$ 12,250,000	Reagent Prep
$ 3,950,000	FGD Area
$ 975,000	Dewatering Area
$ 9,750,000	Fee and profit
$ 4,125,000	Construction Management
$ 34,900,000	**Total**

EPC Contract Material - AECOM Estimate	
$ 3,810,000	Material Handling
$ 17,375,000	Reagent Prep
$ 4,825,000	FGD Area
$ 875,000	Dewatering Area
$ 750,000	Misc. Freight
$ 2,525,000	Misc Ductwork and piping
$ 30,160,000	**Total**

Subcontract L&M - Estimate	
$ 300,000	Civil Work
$ 835,000	Concrete, Asphalt
$ 325,000	Mech Eqpt
$ 725,000	Piping
$ 425,000	Insulation
$ 450,000	Electrical Equipment
$ 850,000	Tank Coatings
$ 1,825,000	Absorber Recirc Pump Rebuilds
$ 325,000	PA System for Reagent Prep Building
$ 275,000	Fire Protection Systems
$ 85,000	FRP Plan & Permitting
$ 325,000	Escalation
$ 6,745,000	**Total**

Owners Engineering Support	
$ 1,825,000.00	Design Review
$ 550,000.00	Quality Control
$ 1,750,000.00	Construction Oversight
$ 4,125,000.00	**Total**

Construction Indirects - Estimate	
$ 467,000	Labor Supervision
$ 1,525,000	Construction CM
$ 652,000	Field Office Expenses
$ 144,000	Pre-Operational Testing
$ 175,000	Site Services
$ 325,000	Temporary Facilities
$ 150,000	Temporary Utilities
$ 175,000	Mobilization/Demob
$ 50,000	Legal Expenses/Claims
$ 125,000	Small Tools & Consumables
$ 755,000	Scaffolding
$ 450,000	Site Improvements
$ 75,000	General Liability Insurance
$ 15,000	Constr. Equip. Mob/Demob.
$ 225,000	Freight on Material
$ 875,000	Quality Control
$ 6,183,000	**Total**

Construction Indirects & Construction Oversight	
$ 6,183,000	Construction Indirects
$ 625,000	Safety Oversight
$ 1,800,000	IM - Performance Contractors
$ 8,608,000	**Total**

Contingency on Estimates	
$ 300,000	Contingency on Constr.Eqpt
$ 6,200,000	Contingency on Material
$ 8,500,000	Contingency on Labor & SO
$ 1,500,000	Contingency on Subcontr.
$ 300,000	Contingency on Process Eq.
$ 1,400,000	Contingency on Indirects
$ 18,200,000	**Total**

	EPC Contract Labor	EPC Contract Material
FGD Area	$ 3,950,000	$ 4,825,000
% of FGD Area Scope	0.188	0.179
FGD Fee & Profit, Misc Freight	$ 1,831,747.92	$ 134,601.08
FGD Const Mgmt, Misc Ductwork/Piping	$ 774,970.27	$ 453,156.96
Total	**$ 6,556,718.19**	**$ 5,412,758.04**

Subcontract L&M	
Absorber Recirc Pump Rebuilds	$ 1,825,000
Mech Eqpt	$ 325,000
Piping	$ 725,000
Electrical Equipment	$ 450,000
Total	**$ 3,325,000**