a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy or similar law for the protection of debtors, or has such a petition filed against it and such petition is not withdrawn or dismissed for 30 Days after such filing, (c) otherwise becomes bankrupt or insolvent (however evidenced) or (d) is unable to pay its debts as they fall due.

19.7 "**Barging Contractor**" means the entity or entities transporting Coal by barge or vessel for Buyer or Buyer's designee from the Delivery Point.

19.8 "**Btu**" means the amount of energy required to raise the temperature of one pound of pure water one degree Fahrenheit from 59.5 degrees Fahrenheit to 60.5 degrees Fahrenheit at a constant pressure of 14.73 pounds per square inch absolute.

19.9 "**Carrier**" means the Railroad, Barging Contractor, or Trucking Contractor, as applicable.

19.10 "**Carrier Specifications**" means the provisions of the applicable Carrier tariff or applicable transaction(s) made by Buyer with the Carrier, as amended from time to time, covering the requirements for each Shipment, including the timing and loading requirements thereunder, which are incorporated herein by reference.

19.11 "**Coal**" means bituminous coal.

19.12 "**Confirmations**" shall have the meaning set forth in Section 1.2.

19.13 "**Contract Price**" means the price in $US per Ton to be paid by Buyer to Seller for the purchase of Coal and any other proper charges pursuant to this Transaction.

19.14 "**Contract Quantity**" means the quantity of Coal that Seller agrees to sell and deliver to Buyer and that Buyer agrees to purchase and receive or cause to be received, from Seller hereunder, as set forth in a Confirmation.

19.15 "**Day**" means a calendar day.

19.16 "**Defaulting Party**" shall have the meaning set forth in Section 14.1.

19.17 "**Delivery Point**" shall have the meaning set forth in Section 5.1.

19.18 "**Delivery Schedule**" shall have the meaning set forth in Section 3.2

19.19 "**Disputes**" shall have the meaning set forth in Section 9.2.

19.20 "**Early Termination Date**" shall have the meaning set forth in Section 14.2.

19.21 "**Effective Date**" shall be the date set forth in the introductory paragraph.

19.22 "**Event of Default**" shall have the meaning set forth in Section 14.1.

19.23 "**Federal Funds Overnight Rate**" shall have the meaning set forth in Section 10.2.

19.24 "**F.O.B.**" means free on board and shall have the meaning given to such term in the Uniform Commercial Code.

19.25 "**Force Majeure**" shall have the meaning set forth in Section 12.1.

19.26 "**Government Imposition**" shall have the meaning set forth in Section 4.3.

19.27 "**Impaired Party**" shall have the meaning set forth in Section 10.

19.28 "**Insecure Party**" shall have the meaning set forth in Section 10.

19.29 "**Laws**" shall mean all federal, state and local laws, rules, orders, regulations, standards and restrictions, including but not limited to those governing taxes and fees.

19.30 "**Legal Costs**" means, with respect to a Party, the reasonable out-of-pocket expenses incurred by it, including legal fees, by reason of the enforcement and protection of its rights under this Agreement.

19.31 "**Letter of Credit**" means one or more irrevocable, transferable standby letters of credit from a major U.S. commercial bank or a foreign bank with a U.S. branch office, with such bank having a credit rating of at least "A-" from S&P or "A3 from Moody's.

19.32 "**Material Adverse Change**" means with respect to either Party or either Party's guarantor, if any (i) there is any material change in the condition (financial or otherwise), net worth, assets, properties or operations, which, taken as a whole, can reasonably be anticipated to impair the ability of such Party or such Party's guarantor to fulfill its obligations under this Agreement or the Adequate Assurance respectively; or (ii) there are reasonable grounds to believe that the creditworthiness of such Party has become unsatisfactory or its ability to perform under this Agreement or the Adequate Assurance has been materially impaired.

19.33 "**Month**" means a calendar month.

19.34 "**Moody's**" means Moody's Investor Services, Inc. or its successor.

19.35 "**Non-Conforming Shipment**" shall have the meaning set forth in Section 8.2.

19.36 "**Non-Defaulting Party**" shall have the meaning set forth in Section 14.2.

19.37 "**Party**" and "**Parties**" shall have the meaning set forth in the introductory paragraph.

19.38 "**Railroad**" means the entity or entities transporting Coal by rail for Buyer or Buyer's designee from the Delivery Point.

19.39 "**Rejection Limits**" means the quality characteristics for a Shipment of Coal set forth in the Confirmation under the heading "Quality Rejection Limits (Per Shipment)".

19.40 "**Replacement Price**" shall have the meaning set forth in Section 13.1.

19.41 "**S&P**" means the Standard & Poor's Rating Group (a division of McGraw-Hill, Inc.) or its successor.

19.42 "**Sales Price**" shall have the meaning set forth in Section 13.2.

19.43 "**Seller's Loading Facilities**" means Seller's loading facilities which are located at the Delivery Point.

19.44 "**Seller's Short Proximate Analysis**" means, with respect to any Shipment of Coal, the determination by Seller, through sampling and testing of such Coal in accordance with methods approved by ASTM (or such other methods as may be mutually agreed upon by the Parties), of the Btu, ash, moisture and SO_2 content of such Coal, certified as accurate by Seller and accompanied by such documentation as Buyer may from time to time reasonably request in support thereof.

19.45 "**Shipment**" means one Transportation Vehicle load that is loaded on any one Day.

19.46 "**Shortfall SO_2 Emission Allowance Price**" means the three day average SO_2 Price of emission allowances expressed in dollars per ton of SO_2 in the table entitled "SO_2 Assessments" published in the Argus Air Daily - US Emissions Market Prices, News and Analysis, or its successor publication, as published on the 3rd, 4th and 5th business days of the Month following the Month in which the Coal was to be delivered to and accepted by Buyer.

19.47 "**Source**" shall have the meaning set forth in Section 3.3.

19.48 "**SO_2**" means sulfur dioxide.

19.49 "**SO_2 Emission Allowance Price**" shall have the meaning set forth in Section 8.1.

19.50 "**Specifications**" means the quality characteristics for the Coal on a monthly weighted average basis set forth in the Confirmation under the heading "Quality Specifications (Monthly Weighted Average)", on an "As Received" basis, using ASTM standards.

19.51 "**Station**" means any Buyer owned or operated facility used to produce and supply electricity.

19.52 "**Suspension Limits**" means the quality characteristics for the Coal on a monthly weighted average basis set forth in the Confirmation under the heading "Quality Suspension Limits (Monthly Weighted Average)."

19.53 "**Term**" shall have the meaning set forth in Section 2.

19.54 "**Ton**" means a net ton of two thousand (2,000) pounds avoirdupois weight.

19.55 "**Transactions**" shall have the meaning set forth in Section 1.1.

19.56 "**Transportation Vehicle**" means a train, a vessel, all trucks loaded during a calendar day or all fully loaded and trimmed barges in a tow used to transport Coal under a Transaction.

19.57 "**Trucking Contractor**" means the entity or entities transporting Coal by truck for Buyer or Buyer's designee from the Delivery Point.

19.58 "**Unit Train**" means a train used to transport Coal under this Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized officers as of the date first above written.

TUNNEL RIDGE, LLC	**DUKE ENERGY KENTUCKY, INC.**
By: Robert A Sachse	By: Elliott Batson
Name: Robert Sachse	Name: Elliott Batson
Title: EVP	Title: VP Reg Fuels
Date: 7/18/11	Date: 7/26/11

EXHIBIT A

CONFIRMATION **Date: May 06, 2011**

Seller :
Tunnel Ridge, LLC
1717 South Boulder Avenue, Suite 400
Tulsa, OK 74119

Attn: Steve Perkins
Tel. 704-263-7231 Fax. 704-263-9642
Email: steve.perkins@arlp.com
Ref. #:

Buyer :
Duke Energy Kentucky, Inc.
526 South Church Street,
Charlotte NC 28202

Attn: Director, Coal Origination
Tel. 704-382-9310 Fax. 704-382-4568
Email: walt.coleman@duke.energy.com
Ref. #: PO ________

This Confirmation ("Confirmation") sets forth the binding agreement entered into between the Parties as to a transaction (this "Transaction") regarding the sale/purchase of Coal under the terms of the Master Agreement for the Sale and Purchase of Coal ("Master Agreement") dated February 04, 2011 and the following terms:

Quote Date: March 11, 2011

Commodity: Crushed coal, containing no synthetic fuels, and free from any extraneous materials, and otherwise meeting the Specifications of this Confirmation.

Term: September 1, 2011 – June 30, 2012

Contract Quantity: 150,000 Tons

Seller shall make all commercially reasonable efforts to ship coal ratably, but the parties recognize that the Tunnel Ridge mine is currently under development. Therefore, shipments from the Source may not be ratable during the early months of the Term.

During the Spring of 2012, Buyer anticipates having an outage at East Bend Steam Station. As a result, both Buyer and Seller agree to develop a delivery schedule that will accommodate the reduced burn during this time. Any tonnage shortfalls that occur due to the outage will be allocated roughly ratably during the remaining Term.

Contract Price: $58.00 - FOB Barge at the Delivery Point

Source: Tunnel Ridge Mine complex, located in Ohio County, West Virginia, and Washington County, Pennsylvania.

Delivery Point: F.O.B. Barge Tunnel Ridge Dock MP 82.3 – Ohio River

Fleeting and Shifting: Seller's Tunnel Ridge Dock is a closed harbor and Seller has contracted with a third party contractor to perform the barge fleeting, shifting and other barge loading services for the loading of coal into barges at the Tunnel Ridge Dock. The cost of shifting barges from the line boat to the fleeting area and from the fleeting area to the line boat and the cost of fleeting barges in the fleeting area as assessed by Seller's third party contractor shall be paid by Seller.

Scheduling: Per the Master Agreement.

Weighing/Sampling and Analysis: Per the Master Agreement.

Billing and Payment: Per the Master Agreement.

Buyers Actual Cost To Scrub: $85.00

Coal Quality Price Adjustments: Per the Master Agreement.

Coal Quality:

Characteristic: (All specification shown As Received, unless stated otherwise)	Quality Specifications (Monthly Weighted Average)	Quality Suspension Limits (Monthly Weighted Average)	Quality Rejection Limits (Per Shipment)
Calorific Value BTU/Lb.	12,800	< 12,600	< 12,400
Ash Content (%)	8.5%	> 10.0%	> 11.0%
*SO2 (Lbs./MMBTU) Content	5.22	> 5.50	> 5.71
Moisture Content (%)	7.5%	>7.75%	> 8.0%
Volatile Matter (%)	Min 36%	<35%	<34%
Fusion Temp (Initial Deformation °F, Reducing Atmos)	Min 2050	<2025	<2000
Grindability (HGI)	Min 52	<52	<50
Chlorine Content (%)	.11	0.12	.13
Sizing	2" X 0"		
Fines (% By Weight Passing ¼" Screen)	< 55%		> 60%

SO2 calculated based upon 20,000

*The pounds SO2 per MMBtu shall be determined by the following formula:

(As Received Percent Sulfur x 20,000) / As Received Btu/Lb. = Pounds SO2 per MMBtu

Representations and Warranties. Subject to Section 12 of the Master Agreement, Seller represents and warrants that, (i) on the Quote Date and throughout the Term of this Transaction: (a) Seller owns or otherwise controls, whether directly or through an affiliate, mineable coal reserves in an amount sufficient to fulfill the terms of this Confirmation, and (b) there are no existing contractual commitments with respect to the coal reserves that would prevent delivery of the quantities of Coal specified in this Confirmation and Seller will not enter into contractual commitments during the Term of this Confirmation that will prevent such delivery; and (ii) Seller has obtained all necessary governmental and other third party permits, approvals and licenses that, to Seller's knowledge, are presently required to operate the Tunnel Ridge Mine for the term of this Confirmation in accordance with Seller's current plans for operation thereof.

This letter constitutes a "Confirmation" as referred to in the Master Agreement specified below. This Confirmation supplements, forms part of, and is subject to, the Master Agreement dated **May 06, 2011**, as it has or may be amended, and supplemented from time to time between the Seller and Buyer. All provisions contained in the Master Agreement govern this Confirmation to the extent not in conflict with the terms hereof. Terms used but not defined herein shall have the meanings ascribed to them in the Master Agreement.

Please confirm that the foregoing correctly sets forth the terms of the agreement between Buyer and Seller as to this Transaction by timely returning an executed copy of this Confirmation by facsimile or email at the fax number or email address specified on the Confirmation.

Seller : **Tunnel Ridge, LLC**	**Buyer :** **Duke Energy Kentucky, Inc.**
By: ______________________	**By:** ______________________
Name: ______________________	**Name:** ______________________
Title: ______________________	**Title:** ______________________
Date: ______________________	**Date:** ______________________

CONFIRMATION

Date: January 2, 2013

Seller :
River View Coal, LLC
1717 South Boulder Avenue, Suite 400
Tulsa, OK 74119

Attn: Steve Perkins
Tel. 704-263-7231 Fax. 704-263-9642
Email: steve.perkins@arlp.com

Ref. #:

Buyer :
Duke Energy Kentucky, Inc.
526 South Church Street,
Charlotte NC 28202

Attn: Manager Coal
Tel. 704-382-6132
Email: Elliott.Batson@duke.energy.com

Ref. #: PO 28376

This Confirmation ("Confirmation") sets forth the binding agreement entered into between the Parties as to a transaction (this "Transaction") regarding the sale/purchase of Coal under the terms of the Master Agreement for the Sale and Purchase of Coal ("Master Agreement") dated February 04, 2011 and the following terms:

Quote Date: October 12, 2012

Commodity: Crushed coal, containing no synthetic fuels, and free from any extraneous materials, and otherwise meeting the Specifications of this Confirmation.

Term: January 1, 2013 – December 31, 2015

Contract Quantity: 400,000 Tons for 2013
600,000 Tons for 2014
600,000 Tons for 2015

Every effort shall be made to ship the Tons ratably per contract year; however, upon mutual agreement of both parties, variations to monthly shipments may be made.

Contract Price: 2013: $43.25 - FOB Barge at the Delivery Point
2014: $46.50 - FOB Barge at the Delivery Point
2015: $48.00 - FOB Barge at the Delivery Point

Source: River View Mine, located in Union County, Kentucky.

Delivery Point: F.O.B. Barge River View Dock MP 843 – Ohio River

Fleeting and Shifting: Seller's River View Dock is a closed harbor and Seller has contracted with a third party contractor to perform the barge fleeting, shifting and other barge loading services for the loading of coal into barges at the River View Dock. The cost of shifting barges from the line boat to the fleeting area and from the fleeting area to the line boat and the cost of fleeting barges in the fleeting area as assessed by Seller's third party contractor shall be paid by Seller.

Scheduling: Per the Master Agreement.

Weighing/Sampling and Analysis: Per the Master Agreement.

Billing and Payment: Per the Master Agreement.

Buyers Actual
Cost To Scrub: $85.00

Coal Quality
Price Adjustments: Per the Master Agreement.

Coal Quality:

Characteristic: (All specification shown As Received, unless stated otherwise)	Quality Specifications (Monthly Weighted Average)	Quality Suspension Limits (Monthly Weighted Average)	Quality Rejection Limits (Per Shipment)
Calorific Value BTU/Lb.	11,500	< 11,350	< 11,250
Ash Content (%)	8.0%	> 9.0%	> 9.5%
*SO2 (Lbs./MMBTU) Content	5.22	> 5.50	> 5.71
Moisture Content (%)	12.5%	>13.0%	> 13.5%
Volatile Matter (%)	Min 33%	<32%	<31%
Fusion Temp (Softening °F, Reducing Atmos.)	Min 2050	<2025	<2000
Grindability (HGI)	Min 50	<49	<48
Chlorine Content (%)	.09	0.11	.13
Sizing	2" X 0"		
Fines (% By Weight Passing ¼" Screen)	< 55%		> 60%

SO2 calculated based upon 20,000

*The pounds SO2 per MMBtu shall be determined by the following formula:

(As Received Percent Sulfur x 20,000) / As Received Btu/Lb. = Pounds SO2 per MMBtu

Representations and Warranties. Subject to Section 12 of the Master Agreement, Seller represents and warrants that, (i) on the Quote Date and throughout the Term of this Transaction: (a) Seller owns or otherwise controls, whether directly or through an affiliate, mineable coal reserves in an amount sufficient to fulfill the terms of this Confirmation, and (b) there are no existing contractual commitments with respect to the coal reserves that would prevent delivery of the quantities of Coal specified in this Confirmation and Seller will not enter into contractual commitments during the Term of this Confirmation that will prevent such delivery; and (ii) Seller has obtained all necessary governmental and other third party permits, approvals and licenses that, to Seller's knowledge, are presently required to operate the River View Mine for the term of this Confirmation in accordance with Seller's current plans for operation thereof.

This letter constitutes a "Confirmation" as referred to in the Master Agreement specified below. This Confirmation supplements, forms part of, and is subject to, the Master Agreement dated February 04, 2011, as it has or may be amended, and supplemented from time to time between the Seller and Buyer. All provisions contained in the Master Agreement govern this Confirmation to the extent not in conflict with the terms hereof. Terms used but not defined herein shall have the meanings ascribed to them in the Master Agreement.

Please confirm that the foregoing correctly sets forth the terms of the agreement between Buyer and Seller as to this Transaction by timely returning an executed copy of this Confirmation by facsimile or email at the fax number or email address specified on the Confirmation.

Seller :
River View Coal, LLC

By: Robert Sachse
Name: Robert Sachse
Title: EVP
Date: 1/24/13

Buyer :
Duke Energy Kentucky, Inc.

By:
Name: Alexander (Sasha) Weintraub
Title: Vice President - Fuels and Systems Optimization
Date: 2/14/2013

DUKE ENERGY KENTUCKY, INC - SPOT COAL CONFIRMATION

The purchases of coal represented by this confirmation are subject to the terms and conditions attached hereto including Exhibit 1 (Transportation Specifications)

TRADE DATE	2-Jul-14	Result of April 2014 RFP
COMMODITY	11,500 btu	
	Result of April 2014 RFP	

SELLER DATA

SELLER	Armstrong Coal Company, Inc.	CONTRACT COMPLIANCE FAX #	
ADDRESS	7733 Forsyth Blvd., Ste 1625	PRODUCER	Armstrong Coal Company, Inc.
CITY/ST./ZIP	St. Louis, MO 63125	ADDRESS	
TRADER	Adam Anderson	CITY/ST./ZIP	Kentucky
SELLER TRADE ID:		COUNTY	Ohio and Muhlenberg
PHONE #	314 422-4150	COAL PRODUCING DIST. (ie. CAPP/NAPP)	ILB

Seller Approved By: Mark D Wilson

	Standard	Rejection Limit		
SEAM(S)	Kentucky #9			
BTU MIN.	11,500 Btu	<11,200 Reject	RIVER/MILEPOST	Green River MP 76.6
SULFUR % MAX.	2.9%	>3.2% Reject	DELIVERY POINT	FOB Barge
SO2/MMBTU	5.00	>5.50 Reject	Shipping Location	
VOLATILE % MIN.	37.00%	<32.00% Reject	SATURDAY LOADING (YES/NO)	Yes
ASH % Max.	10%	>12% Reject	SUNDAY LOADING (YES/NO)	Yes
GRIND (HARDGROVE INDEX)-MIN.	>57	<45 Reject	TIPPLE	
MOISTURE % MAX.	12.0%	>14.0%		
SIZE (Inches)				
Fines				
AST-Reducing				
Chlorine ppm	180 ppm	>750 ppm		

Comments: *This Confirmation is subject to early termination pursuant to the provisions of Exhibit 1 attached hereto, which is hereby incorporated as part of this Confirmation and shall prevail in the event of an inconsistency with the provisions of this Confirmation.

Price & Volume

DELIVERY PERIOD	Volume / Month	FOB Barge Price
January 1, 2015 through December 31, 2015	250,000 annual tons total or approximately 20,833/month	$45.00/ton

Seller Comments

BUYER'S USE ONLY | **BUYER'S USE ONLY** | **BUYER'S USE ONLY** | **BUYER'S USE ONLY**

BUYER	Duke Energy Kentucky Inc.	PRODUCER ABBR:	
DATE	7/2/2014	FOB BARGE PRICE	
STATION		FREIGHT RATE	
PURCHASE ORDER #			
BUYER ADDRESS	526 South Church Street, EC02F Charlotte, NC 28201		

DUKE Energy Approved By: Elliott Batson 10/27/14

DUKE ENERGY KENTUCKY, INC.
TERMS AND CONDITIONS OF SALE AND PURCHASE

Terms and Conditions Applicable to the Purchase of Coal

1. **Definitions.** "Buyer" shall mean Duke Energy Kentucky, Inc. and any other person or entity to whom Buyer may assign or transfer any of its rights and obligations under this Agreement. "Agreement" shall mean the attached Spot Coal Confirmation to Duke Energy Kentucky, Inc. together with these Terms and Conditions of the Agreement for the Sale and Purchase Effective January 1, 2015 through December 31, 2015 "Seller" shall mean the seller under this Agreement and any of its affiliates. "Ton" shall mean a net ton of 2,000 pounds avoirdupois weight. "Shipment" shall mean a unit train for rail loadings and individual barges for barge loadings.

2. **Warranty.** Seller represents and warrants to Buyer that: (a) Seller shall deliver directly from Seller to Buyer good, exclusive and marketable title to the coal free and clear of all liens, security interests, claims, and encumbrances; (b) Seller has sufficient reserves and/or access to a sufficient supply of utility steam coal in the quantity and quality required per Agreement; (c) Title to all coal sold to Buyer shall pass directly to Buyer from Seller; (d) The Shipments of coal delivered to Buyer shall substantially meet the specifications per Agreement and be free flowing and not larger in size than 2" x 0"; provided however, that Seller may deliver coal smaller in size so long as fines do not exceed 55% through a ¼" screen; (e) Seller shall deliver the coal such that it is delivered within the schedule established per Agreement; and (f) no federal, state, local or foreign statute, law, rule, regulation or order will be violated in the mining, selling or delivering of the coal. Seller shall promptly replace or refund, at Buyer's election, all coal that does not comply fully with this warranty. Each Party represents and warrants to the other that: (a) it is duly organized and validly existing under the law of its place of incorporation or organization; (b) this transaction and confirmation constitute a "forward contract" within the meaning of the United States Bankruptcy Code (the "Bankruptcy Code"), it is a "Forward Contract Merchant" within the meaning of the Bankruptcy Code; and it is an "Eligible Contract Participant" as defined in Section 1a(18) of the Commodity Exchange Act, as amended; and (c) it is a producer, processor, commercial user or merchant, and it is entering into such transaction for purposes related to its business as such.

3. **Shipping; Risk of Loss.** All coal delivered by Seller shall be shipped per Agreement and reasonable instructions of Buyer, otherwise Buyer shall be entitled to reimbursement from Seller for any extra handling charge(s) for coal not shipped per Agreement. All coal delivered by Seller shall be delivered into unit trains or barges, as applicable, as scheduled by Buyer in coordination with Seller. Seller shall be required to load and ship coal twenty-four hours a day, seven days per week. Within 24 hours of the time of shipment, Seller shall fax or electronically mail to Buyer and the receiving stations Seller's Proximate Analysis (i.e., Btu, Ash Moisture and Sulfur/SO2) for such coal. Title and risk of loss shall pass from Seller to Buyer as the coal is progressively loaded on Buyer's rail cars or barges, as applicable.

4. **Weighing; Sampling; and Analysis.** See Addendum 1 attached hereto and incorporated herein as if fully set forth in this Agreement.

5. **Inspection; Acceptance.** Upon reasonable notice to Seller, Buyer shall have the right to inspect Seller's mines, preparation and loading facilities, at Buyer's sole risk and expense, during mining and preparation of any coal subject to this Agreement and to inspect all quality assurance and other records relating to the coal. In addition, Buyer shall have the right to inspect all coal at Buyer's facility before accepting it. Buyer will supply documentation for not accepting a Shipment. Buyer shall have one business day after it discovers a defect or nonconformity to the reject coal specifications to reject or to revoke acceptance of the coal, in either event prior to unloading. Seller shall pay all shipping costs for rejected or revoked coal Shipments.

6. **Termination; Cancellation.** In the event; (1) a Coal Shipment per this Agreement fails to conform to the rejection limit coal specifications for any five (5) Shipments during any calendar month for barge loadings or any one (1) Shipment during any calendar month for rail loadings or (2) Seller otherwise fails to perform as required by the Agreement, Buyer shall have the right to; (a) reject or revoke acceptance of such delivery prior to unloading; (b) suspend further deliveries; (c) terminate or cancel all or a portion of further deliveries upon ten days advance written notice; or (d) require Seller to deliver replacement Coal from the Source; or (e) terminate the Agreement, in which Seller's rights to make further deliveries terminates immediately upon receipt of such notice of termination from Buyer. Should Buyer terminate or cancel all or a portion of the Agreement as is set forth herein, unless the Agreement expressly provides otherwise, Buyer shall only pay Seller for the quantity of acceptable coal received, plus or minus any purchase price adjustment(s). If the sum of Buyer's prior payments and deposits under this Agreement exceed the cancellation and delay charges and other amounts due under this Agreement, Seller shall promptly refund the balance to Buyer. If Buyer fails to timely pay for coal delivered in accordance with the terms hereof, then Seller shall have the right, in addition to all other rights under this Agreement or otherwise under the law, to suspend further Shipments of coal until all previous Shipments of coal are paid for. Overdue payments shall accrue interest from the date overdue at an interest rate equal to two (2) percent over the prime lending rate as published from time to time in the *Wall Street Journal*, but in no event to exceed the maximum lawful rate.

7. **Purchase Price.** The purchase price for the coal is F.O.B. railcar at the Seller's loadout or FOB barge at the Delivery Point, as applicable. The purchase price includes all federal, state, and local taxes, fees, fleeting, harbor services and all other levies, which are required to be paid on coal, delivered hereunder.

8. **Purchase Price Adjustments.** It is recognized by the parties that the calorific value of the coal actually delivered hereunder may vary from the standard "as received" calorific value as specified. Therefore the price per ton of coal shall be adjusted in order to compensate for variations in the calorific value of the coal delivered hereunder. The Btu content shall be determined, on a weighted average "as received" basis for coal received in a delivery month by tests conducted by Seller. The price adjustment per ton to be paid for coal delivered hereunder shall be calculated as follows:

[(("as received" Btu / Standard Btu) x Purchase Price) – Purchase Price] = Btu Price Adjustment Per Ton of Coal

If the "as received" weighted average actual SO2 content per MMBtu of coal in any month is greater or less than the standard SO2 content per MMBtu specified, an adjustment decreasing or increasing the price per ton of coal shall be calculated as follow:

Per Ton Price adjustment = (Standard Specification monthly weighted average Lbs. SO2/MMBTU – Actual monthly weighted average Lbs. SO2/MMBTU) x 116.15/100

The amount of any purchase price adjustment shall be added / deducted from any amount otherwise due to the other party or, if such balance is inadequate to compensate therefor, the adjustment amount shall be paid to the other party promptly upon ascertainment of the amount thereof.

9. **Payment.** Payment for coal shipped by Seller the 1st through the 15th shall be due on the thirtieth day of that month and for coal shipped by Seller the 16th through the 31st shall be due on the fifteenth day of the following month. Payment shall be by ach, wire transfer or other mutually agreeable payment method. Seller's weights and coal quality analysis shall govern payments due Seller and any applicable Purchase Price adjustment(s).

ABA Routing Number:	081000210
Account Number:	152306681361
Account Name:	Armstrong Energy, Inc.

10. **Indemnification.** Seller shall defend, indemnify and hold harmless Buyer and its subsidiaries, affiliates, directors, officers and employees from and against all claims, demands, losses, damages, liabilities, obligations, and attorneys' and other professionals' fees and expenses arising out of or relating to: (a) any breach of warranty by Seller; and (b) any act or omission of Seller or its employees, contractors and agents in the performance of services under this Agreement. Buyer shall give Seller reasonable notice of any claim Buyer contends falls within this indemnification.

Buyer shall defend, indemnify and hold harmless Seller and its subsidiaries, affiliates, directors, officers and employees from and against all claims, demands, losses, damages, liabilities, obligations, and attorneys' and other professionals' fees and expenses arising out of or relating to: (a) any breach of warranty by Buyer; and (b) any act or omission of Buyer or its employees, contractors and agents in the performance of services under this Agreement. Seller shall give Buyer reasonable notice of any claim Seller contends falls within this indemnification.

11. **Force Majeure.** When used herein, "Force Majeure" shall mean a cause beyond the reasonable control of and not due to the fault or negligence of Buyer or Seller, as the case may be, which wholly or partially prevents or delays, mining, processing or loading of coal, or the receiving, transporting, or delivery of coal, or the unloading, storing, or burning of coal at the Buyers plant. A change in market conditions (including the ability of Seller to sell coal at a higher price or Buyer or Buyer's customer to buy coal at a lower price), Buyer's inability to economically use or resell the coal, whether or not foreseeable shall not be considered Force Majeure events. Performance of this Agreement shall be suspended and excused to the extent commensurate with such interfering occurrence. When a Force Majeure event ends, the affected party shall resume performance and give written notice thereof. If Seller or Buyer is forced to suspend shipments/performance, in whole or in part, due to Force Majeure, once such Force Majeure event ends, Shipments excused by events of Force Majeure shall not be made up except by mutual agreement of Buyer and Seller on a mutually agreed schedule.

12. **Confidentiality.** Seller and Buyer shall keep confidential and not disclose to any person or entity other than its counsel or auditors any information that the other party designates as being confidential except to the extent required by law or as necessary to comply with this Agreement. Seller shall not use Buyer's name or the fact that Seller is selling Goods or Services to Buyer in any press releases, media statements or public communications or otherwise publicize this Agreement without Buyer's prior written consent. Seller shall not use Duke Energy's (including its subsidiaries and affiliates) name, logos, trademarks, service marks, trade names or trade secrets in any way without Buyer's prior written consent, and Buyer shall not be deemed to have granted Seller a license of, or granted Seller any rights in any of the foregoing by entering into this Agreement.

13. **Compliance with Laws.** Unless Seller or Buyer is exempted by the rules, regulations or orders of the United States Secretary of Labor, both parties shall comply fully at all times relevant to this Agreement with all applicable laws, rules, regulations and court orders, including: (a) Executive Order 11246 issued by the President of the United States on September 24, 1965; (b) the Vietnam Era Veterans Readjustment Assistance Act of 1974 and applicable sections of 41 CFR relating to the employment of veterans; (c) section 503 of the Rehabilitation Act of 1973; (d) regulations of the United States Occupational Safety and Health Act; (e) 15 U.S.C section 637(d)(3) and 48 CFR section 52.219 relating to small and disadvantaged business concerns; (f) all applicable rules,

regulations and orders issued by the United States Secretary of Labor under any of the foregoing; and (g) all amendments of the foregoing that may be made from time to time.

14. **No Assignment.** Unless this Agreement expressly provides otherwise, neither party shall assign, delegate or subcontract all or any portion of this Agreement without the prior written consent of the other party other than to affiliates or for purposes of financing. Any attempted assignment, delegation or subcontracting without the other party's prior written consent shall be ineffective and void but only if such prior written consent is required under the provisions of this Section 14.

15. **Independent Contractor.** Seller is an independent contractor for all purposes, and in no event shall Seller be deemed to be an agent, partner or joint venturer of the Buyer.

16. **Remedies.** The remedies in this Agreement are cumulative and in addition to all rights and remedies at law and in equity. The parties may exercise their rights and remedies in any order or combination they choose. No delay in exercising or failure to exercise a right of remedy shall impair that or any other right or remedy or be construed as a waiver of any default.

17. **Notices.** All notices and written requests under this Agreement shall be sent by first class mail, e-mail (return receipt requested) or facsimile (with transmission confirmed) to the following addresses:

If to Buyer:

Elliott Batson
Coal Mail Code: EC02F
Duke Energy
526 South Church Street
Charlotte, NC 28202
________________(FAX)
elliott.batson@duke-energy.com

If to Seller:

Adam Anderson, Director, Sales/Marketing
Armstrong Coal Company, Inc.
7733 Forsyth Boulevard - Suite 1625
St. Louis, MO 63105
314-721-8211 (FAX)
aanderson@armstrongcoal.com

Jacquelyn A. Jones
Sr. Vice President and General Counsel
Armstrong Energy, Inc.
7733 Forsyth Boulevard, Suite 1625
Saint Louis, MO 63105
314-721-8211 (FAX)
jjones@armstrongcoal.com

18. **Entire Agreement.** This Agreement contains the entire agreement of the parties relating to the subject matter and supersedes all prior and contemporaneous agreements, understandings, usages of trade and courses of dealing, whether written or oral. This Agreement may only be modified by a written agreement, signed by both parties, expressly modifying this Agreement. No verbal agreements or exchange of letters shall modify or amend this agreement.

19. **Liability Limitation.** NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS, OR BUSINESS INTERRUPTION DAMAGES, WHETHER BY STATUTE, IN TORT OR IN CONTRACT, UNDER THIS AGREEMENT, ANY INDEMNITY PROVISION OR OTHERWISE.

20. **No Precedent.** The terms and conditions set forth in this Agreement are for the purpose of this Agreement and the Transaction contemplated herein only and will not set or be construed or deemed to set a precedent for any future purchase and sales agreement, if any, that may be entered into between Buyer and Seller.

Form # 45027 (08/10 cec)

Agreed To By:

Duke Energy Kentucky, Inc.

By: Elliott Batson

Title: Director Coal

Date: 10/27/14

Armstrong Coal Company, Inc.

By: Mart D. Wilson

Title: President and CCO

Date: October 13, 2014

Bristol: 484716-1

EXHIBIT 1

Test Burn. Buyer, in its sole discretion, shall require a test burn of the coal set forth herein ("Coal") as a standalone burn and/or a blend with other coals to determine if such Coal is acceptable for use or causes operational or handling difficulties at one or more of Buyer's destination Station(s). This test burn shall be completed within sixty (60) days of unloading the test coal at the Station. If, within this sixty (60) day period, Buyer determines, in its sole discretion reasonably exercised, that the test burn proves the Coal set forth herein causes adverse plant performance or operational difficulties including, but not limited to: boiler slagging, boiler fouling, boiler tube leaks, forced outages, corrosion, unusual wear to equipment or tubing, receiving and/or handling difficulties in which Buyer is unable to unload to dispense the Coal as required by station personnel, Buyer shall give Seller notice of such plant performance or operational difficulties and Buyer shall have the right to suspend all further delivers of Coal by giving notice thereof to Seller. Promptly after such notice is delivered, the parties shall meet and attempt in good faith to reach a mutually agreeable solution to resolve such issues. If the parties are unable to reach a mutually agreeable solution within sixty (60) days after delivery of Buyer's notice to Seller, then Buyer may terminate all or a portion of this Confirmation and the associated tons of Coal by providing written notice thereof to Seller or assign all or a portion of this Confirmation and associated tons of Coal to any affiliate or subsidiary of Buyer. Buyer shall document such difficulties that are believed to be caused by Seller's Coal and shall make such documentation available to Seller for review in a timely manner. If Buyer determines that it must terminate the entire Confirmation and provides notice thereof, then after the effective date of any such termination notice by Buyer, neither party shall have any further obligation to the other party hereunder except for (a) Buyer's obligation to pay for any Coal delivered and received, or any shipments of Coal that are in transit to Buyer (provided that such coal is not above or below, as applicable, any of the rejection limits) prior to the effective date of such termination and (b) each party's obligation to remit or credit any coal quality price adjustments for Coal delivered and received or any shipments of Coal that are in transit to Buyer (provided that such Coal is

If, within the initial sixty (60) day period, Buyer determines, in its sole discretion reasonably exercised, that the test burn for the Coal is successful and does not cause adverse plant performance or operational difficulties as outlined above, this Confirmation shall remain in effect and shall be fully enforceable in accordance with its terms.

ADDENDUM 1

DUKE ENERGY KENTUCKY, INC.

Weighing; Sampling; and Analysis. Shipments shall be weighed at Seller's expense as determined by a certified batch weigh system for rail loadings or by draft surveys for barge loadings at the Delivery Point.

Seller shall sample, via a mechanical sampler, at its expense at the Delivery Point. Seller shall select an independent sampling laboratory, reasonably acceptable to Buyer, to analyze all samples collected hereunder. Seller shall pay all sampling costs incurred hereunder. Sampling shall be carried out following the ASTM standard, as set forth in ASTM standard D2234 (Type I, condition A or B, systematic spacing). Analysis is to be done in accordance with applicable ASTM standards. Such analysis shall be final and binding and shall govern for payment.

Seller shall make available sample splits and a report of each sample's quality for Buyer upon request. Buyer, at its expense, may make arrangements to pick up samples. Seller shall retain, for a period of 60 days from the loading date, sample splits taken in accordance with the provisions of this Agreement for use by Seller and the independent laboratory specified below.

In the event of a disagreement over coal analysis and upon Buyer and Seller selecting a mutually agreed upon independent laboratory, Seller shall provide sample splits to the independent laboratory for analysis. Such analysis shall be accepted as the quality of coal received. The cost of the independent analysis shall be equally shared between Buyer and Seller; however, the cost of the independent analysis shall be paid by Buyer if the results of such analysis and Seller's analysis are within applicable ASTM standards for repeatability and reproducibility, or in the absence of ASTM standards, mutually agreeable coal industry standards. If Seller's results are not so confirmed, then the laboratory's results shall be accepted as the quality and characteristics of the coal.

CONFIRMATION **Date: November 21, 2014**

Seller :
Foresight Coal Sales LLC, as agent for
Macoupin Energy LLC and
and Hillsboro Energy LLC
46226 National Road
St. Clairsville, Ohio 43950

Attn: Andy Cox
Tel. 434-409-5208 Fax. 740-338-3409
Email: andycox@coalsource.com
Ref. #:

Buyer :
Duke Energy Kentucky, LLC

526 South Church Street,
Charlotte NC 28202

Attn: Director, Coal
Tel. 704-382-6132 Fax. 704-382-9769
Email: Elliott.Batson@duke-energy.com
Ref. #: PO

This Confirmation ("Confirmation") sets forth the binding agreement entered into between the Parties as to a transaction ("Transaction") regarding the sale/purchase of Coal under the terms of the Master Agreement for the Sale and Purchase of Coal ("Master Agreement") dated August 3, 2011. This Confirmation supplements, forms part of, and is subject to, the Master Agreement as it has been or may be amended from time to time. All provisions contained in the Master Agreement govern this Confirmation to the extent not in conflict with the terms hereof. Terms used but not defined herein shall have the meanings ascribed to them in the Master Agreement.

Quote Date:	10/30/2014
Commodity:	Crushed bituminous coal, containing no synthetic fuels, and substantially free from any extraneous materials, with no intermediate sizes added or removed and otherwise meeting the Specifications of this Confirmation.
Term:	January 1, 2016, – December 31, 2016
Contract Quantity:	2016: 150,000 Tons, shipped in approximately equal monthly shipments plus or minus ten (10) percent at Buyer's discretion on an annual basis.
Contract Price:	2016: $40.50/Ton FOB Barge at the Delivery Point
Source:	Shay # 1 Mine, Deer Run Mine, and the Sugar Camp Mining Complex, subject to testing and approval by Buyer.
Test Burn:	Buyer, in its sole discretion, shall require a test burn of the coal set forth herein ("Coal") as a standalone burn and/or a blend with other coals to determine if such Coal is acceptable for use or causes operational or handling difficulties at one or more of Buyer's destination Station(s). This test burn shall be completed within sixty (60) days of unloading the test Coal at the Station. At its sole risk and expense, Seller shall be entitled to have a third-party consultant on site to observe the test burn. If, within this sixty (60) day period, Buyer determines, in its sole discretion reasonably exercised, that the test burn proves the Coal set forth herein causes adverse plant performance or operational difficulties including, but not limited to: boiler slagging, boiler fouling, boiler tube leaks, forced outages, corrosion, unusual wear to equipment or tubing, receiving and/or handling difficulties in which Buyer is unable to unload to dispense the Coal as required by station personnel, Buyer shall give Seller notice of such plant performance or operational difficulties and Buyer shall have the right to suspend all further delivers of Coal by giving notice thereof to Seller. Promptly after such notice is delivered, the parties shall meet and attempt in good faith to reach a mutually agreeable solution to resolve such issues. If the parties are unable to reach a mutually agreeable solution within sixty (60) days after delivery of Buyer's notice to Seller, then Buyer may terminate all or a portion of this Confirmation and the associated tons of Coal by providing written notice thereof to Seller or assign all or a

portion of this Confirmation and associated tons of Coal to any affiliate or subsidiary of Buyer. Buyer shall document such difficulties that are believed to be caused by Seller's Coal and shall make such documentation available to Seller for review in a timely manner. If Buyer determines that it must terminate the entire Confirmation and provides notice thereof, then after the effective date of any such termination notice by Buyer, neither party shall have any further obligation to the other party hereunder except for (a) Buyer's obligation to pay for any Coal delivered and received, or any shipments of Coal that are in transit to Buyer (provided that such Coal is not above or below, as applicable, any of the rejection limits) prior to the effective date of such termination and (b) each party's obligation to remit or credit any Coal quality price adjustments for Coal delivered and received or any shipments of Coal that are in transit to Buyer (provided that such Coal is not above or below, as applicable, any of the rejection limits) prior to the effective date of such termination. Nothing in this Confirmation and/or the testing of the Coal purchased hereunder will be construed to obligate Buyer to enter into any agreement with Seller. Furthermore, in no event shall Buyer terminate this Confirmation under this Test Burn provision for commercial convenience or based upon the prevailing price for Coal.

If, within the initial sixty (60) day period, Buyer determines, in its sole discretion reasonably exercised, that the test burn for the Coal is successful and does not cause adverse plant performance or operational difficulties as outlined above, this Confirmation shall remain in effect and shall be fully enforceable in accordance with its terms.

Delivery Point: F.O.B. Barge, Sitran River Terminal at MP 817.5 on the Ohio River

Scheduling: Per the Master Agreement.

Weighing/Sampling and Analysis: Per the Master Agreement, Seller's weights and analyses govern.

Billing and Payment: Per the Master Agreement.

Coal Quality Price Adjustments: Per the Master Agreement except there will not be any SO2 or ash adjustments under this Confirmation.

Buyer's Actual Cost To Scrub: $116.15

Coal Quality ("As Received"):

Characteristic:	**Quality Specifications** (Monthly Weighted Average)	**Rejection Limit** (Per Shipment)
Calorific Value (BTU/Lb.)	**11,000 minimum**	**10,800 minimum**
Ash Content (%)	**8.5 maximum**	**9.5 maximum**
*SO2 (Lbs./MMBTU) Content	**6.25 maximum**	**6.50 maximum**
Moisture Content (%)	**15.5 maximum**	**18.5 maximum**
Volatile Matter (%)	**34 % minimum**	**<32 %**
Fusion Temp (Softening °F, Reducing Atmos.)	**2,050 minimum**	**<2000**
Grindability (HGI)	**55 minimum**	**<50**
Chlorine Content (%)	**.08 maximum**	**.15 maximum**

Top Size	**2" maximum**	**N/A**
Fines (% By Weight Passing ¼" Screen)	**55 maximum**	**55 maximum**

*The pounds SO2 per MMBtu shall be determined by the following formula:

(As Received Percent Sulfur x 20,000) / As Received Btu/Lb. = Pounds SO2 per MMBtu

Representations and Warranties. Seller represents and warrants that, on the Quote Date and throughout the Term of this Transaction, and under present mining laws and regulatory rules and guidelines:

(a) Seller presently owns or otherwise controls Coal reserves in an amount sufficient to fulfill the terms of this Confirmation, the Coal contained in such reserves is mineable and of the quality called for by this Confirmation and Seller presently has approved governmental mining permits to fulfill the terms of this Confirmation,

(b) There are no existing contractual commitments with respect to Coal reserves that would prevent delivery of the quantities of Coal specified in this Confirmation and Seller will not enter into contractual commitments during the Term of this Confirmation that will prevent such delivery,

(c) Seller owns and has in operation mining facilities and equipment sufficient to produce the quantities of Coal to be delivered under this Confirmation and has obtained all necessary governmental and other third party permits (excluding unforeseen events as set forth in Section 11 of the Master Agreement), approvals and licenses required in connection with the execution, delivery and performance of this Confirmation, and

(d) Buyer shall have the right, upon reasonable notice, at its own expense and risk and in full compliance with Seller's check-in and safety programs, to have its representatives and/or qualified consultants observe and inspect Seller's facilities and operations without interfering with such operations.

Dodd-Frank. This Transaction contains embedded volumetric optionality. The parties agree, however, that this Transaction falls within the "forward contract exclusion" for Dodd-Frank purposes for reasons including but not limited to the following:

(a) The embedded optionality does not undermine the overall nature of this Confirmation as a forward contract;
(b) The predominant feature of this Confirmation is actual delivery of the nonfinancial product;
(c) The embedded optionality cannot be severed and marketed separately from the Confirmation;
(d) Seller, at the time this Confirmation is entered into, intends to deliver the nonfinancial product if the embedded volumetric optionality is exercised;
(e) Buyer, at the time this Confirmation is entered into, intends to take delivery of the nonfinancial product if the embedded volumetric optionality is exercised;
(f) Buyer and Seller are each commercial parties; and
(g) At the time this Confirmation is entered into, the embedded volumetric optionality is primarily intended to address physical factors or regulatory requirements that reasonably influence the demand for, or the supply of, the nonfinancial commodity.

No Precedent. The terms and conditions set forth in this Confirmation are for the purposes of this Confirmation and the Transaction contemplated herein only and will not set or be construed or deemed to set a precedent for any future Transaction and/or Confirmation, if any, that may be entered into between Buyer and Seller.

Please confirm that the foregoing correctly sets forth the terms of the agreement between Buyer and Seller as to this Transaction by timely returning an executed copy of this letter by facsimile or email at the fax number or email address specified on the Confirmation.

Seller :
Foresight Coal Sales LLC, as agent for Macoupin Energy LLC and Hillsboro Energy LLC

By: Michael J. Beyer jcc 5/28/15
Name: Michael J. Beyer
Title: CEO
Date: 5/28/15

Buyer :
Duke Energy Kentucky, LLC

By: Elliott Batson
Name: Elliott Batson
Title: Director Coal
Date: 6/4/15

PUBLIC STAFF-DR-03-003
As to Attachment Only

REQUEST:

Refer to Duke Kentucky's response to the Commission Staff's Second Request for Information ("Staff's Second Request"), Item 2.a.

a. Duke Kentucky cites the following language from previous Commission FAC-related Orders:

> We interpret Administrative Regulation 807 KAR 5:056 as permitting an electric utility to recover through its FAC only the lower of the actual energy cost of the non-economy purchased energy or the fuel cost of its highest cost generating unit available to be dispatched to serve native load during the reporting expense month.

Duke Kentucky states on pages 2-3 of the response that its Woodsdale units are capable of dispatch at minimum load and that using some other assumption about the generating unit load would be contrary to the Commission language noted above.

1. Explain why Duke Kentucky concluded, regardless of the unit's actual load during the month, that the Commission intended that the highest-cost unit's most inefficient level of load operation should be used in the calculation rather than its most efficient level, or its actual level of load operation.
2. Explain how using a load other than the most inefficient level is contrary to the Commission's language cited above.

b. Duke Kentucky, on page 2 of the response, states, "PJM does dispatch Woodsdale CTs at minimum load when they are both available and needed." Explain whether this statement means that PJM Interconnection, LLC ("PJM") directs the Woodsdale units to be started and to operate at 5 MW. If not, explain the meaning of the statement. If so, provide the following:

1. The frequency of the requests; and
2. The reasons PJM makes the requests.

c. The response, on pages 2-3, also states, "Thus, they are typically the highest cost units available to be dispatched to serve native load in any reporting expense month." Explain the use of the term "typically" in this sentence.

d. Confirm that on a month-to-month basis, regardless of load, Duke Kentucky's combustion turbines will have a higher dispatch cost than its coal-fired generation.

RESPONSE:

<u>CONFIDENTIAL PROPRIETARY TRADE SECRET (AS TO ATTACHMENT ONLY)</u>

a.1. Duke Energy Kentucky concluded that the Commission intended that the highest cost unit should be used in the calculation based on language provided in its previous order that clearly states "highest cost generating unit available to be dispatched." Duke Energy Kentucky's highest cost unit is, in fact any of its Woodsdale CTs dispatched at minimum load. Calculating the $/MWh fuel cost of a unit at any loading, other than minimum load, mathematically and factually results in a solution that is something other than highest cost.

2. The Commission's order is very clear that the highest cost generating unit "available to be dispatched" should be used. Duke Energy Kentucky's highest cost generating unit that is available to be dispatched is a Woodsdale CT at minimum load. Unless all six Woodsdale units are experiencing an outage simultaneously, there is always a Woodsdale CT available to be dispatched at minimum load. Using a load assumption other than minimum load, such as maximum load, mathematically does not result in, or equate to, the Company's highest cost unit that is *available* to be dispatched. PJM does dispatch Woodsdale CTs at minimum load. Therefore using the cost of dispatching Woodsdale at minimum load as the Company's highest cost unit available to be dispatched is a reasonable assumption for determining the threshold for recovery of purchased power through the FAC. It is based upon actual experience insofar as Woodsdale CTs do indeed get dispatched at minimum load. If the Commission intended to establish the threshold for calculating purchased power that is recoverable through the FAC as something other than the dispatch cost of the Company's highest cost unit *available to be dispatched*, such as its highest cost unit that was *actually* dispatched, or the highest cost unit that is *available* to be *fully* dispatched it would have said so. Actual dispatch costs during a month, costs for a unit that is available to be *"fully"* dispatched, costs for a unit that is "*available*" to be dispatched at minimum load are three distinctly different thresholds. A Woodsdale CT may not be dispatched during an expense month because its dispatch costs were too high for PJM to call upon the unit and lesser cost units

were available in the market to satisfy demand and reliability needs. In that case, the actual dispatch cost for Woodsdale would be zero. However, it was still *available* to be dispatched, at any level, including at its highest cost of minimum load. And any purchased power that was necessary by the Company up to the cost of Woodsdale at minimum load, should be recoverable through the FAC. There are six Woodsdale CTs unless all six CTs are simultaneously experiencing an outage or there is some anomalous event that makes PJM dispatch all six CTs at full load, and that is still insufficient to serve Duke Energy Kentucky's native load, there will always be a Woodsdale CT "available" to be dispatched at any level, including minimum load.

b. PJM does order Woodsdale units to be started and operated at minimum load (5 MW). Because of Woodsdale's flexibility in operation in terms of fast start and ramp up rate, PJM frequently directs Woodsdale units(s) to start and run at minimum load, providing operating reserves, until greater loading is needed on a moment's notice. Then Woodsdale is backed down to minimum load again.

   1. Please see CONFIDENTIAL ATTACHMENT STAFF DR-03-003b1 being provided under a Petition for Confidential Treatment for an analysis of periods where the Woodsdale units operated at minimum load. For purposes of this analysis, minimum load was defined as ranging from 1 to 6 MW. Please note that Duke Energy Kentucky's response to STAFF DR-02-002e listed one hour periods where the five minute periods within

the hour averaged 5 MW. STAFF DR-03-003B1 Confidential Attachment provides additional detail.

2. PJM does not fully disclose its reasons for starting and dispatching specific generating units. PJM may post a specific transmission constraint that can at times be assumed is causing a Woodsdale dispatch, but the Company doesn't know the exact reason in most cases. PJM dispatches units for both satisfying minute to minute demand of the entire system in the most efficient manner (*e.g.* manage and minimize congestion and constraints, etc.) and to meet reliability needs for the entire transmission grid under its direction. Woodsdale units are capable of providing maximum operating reserve capability to PJM when operating at minimum load because of their fast ramp capability. Experience shows that PJM is using Woodsdale in this manner as would be expected.

c. The word "typically" was used instead of "always" to allow for the unlikely possibility that East Bend might be the highest cost unit available to be dispatched if, for example, all six Woodsdale units are not available to be dispatched during the entire month or if natural gas drops to a low enough level as explained in (d). Additionally, because several Woodsdale units are capable of dual fuel with an onsite propane reserve, it is possible that even if a unit is operating at maximum load, but a gas transmission flow restriction occurs, the Company could switch to propane, which would produce an even higher dispatch cost.

d. It is possible that Duke Energy Kentucky's East Bend coal-fired unit would be a higher cost dispatch than its Woodsdale CTs. If gas prices are extremely low for a sustained period and Woodsdale is operating at its most efficient level, or if coal prices rise dramatically, then it is possible that the dispatch cost of Woodsdale at maximum load would be lower than East Bend's dispatch cost. Generally, however, based upon the Company's existing portfolio, Duke Energy Kentucky's Woodsdale combustion turbines are higher cost than East Bend, and are the highest cost units available to be dispatched unless all six Woodsdale units are simultaneously unavailable due to forced outage or maintenance. Nonetheless, if available, Woodsdale CTs at minimum load should always be the Company's highest cost units *available* to be dispatched.

PERSON RESPONSIBLE: Scott Burnside and John Swez

STAFF-DR-03-003b1 CONFIDENTIAL ATTACHMENT - FILED UNDER SEAL WITH A PETITION FOR CONFIDENTIAL TREATMENT

Duke Energy Kentucky
Case No. 2016-00005
Staff Third Set Data Requests
Date Received: March 18, 2016

STAFF-DR-03-004

REQUEST:

Refer to Duke Kentucky's response to Staff's Second Request, Item 2.c. The response, on page 5, states, "The Company bases the prices paid for actual delivered natural gas upon observed gas prices on the Intercontinental Exchange (ICE), or independent market quotes for bilateral natural gas delivered to Woodsdale Station." State whether this sentence is meant to provide the basis for the natural gas prices Duke Kentucky uses in bidding the Woodsdale units into the PJM market. If not, explain the meaning of the sentence.

RESPONSE:

Yes. The delivered natural gas prices observed on the Intercontinental Exchange and independent market quotes provide the basis for the natural gas prices Duke Energy Kentucky uses in offering the Woodsdale units into the PJM market.

PERSON RESPONSIBLE: Scott Burnside and John Swez

PUBLIC STAFF-DR-03-005

REQUEST:

Refer to Duke Kentucky's response to Staff's Second Request, Item 2.e.

a. For each month of the review period that Duke Kentucky indicated that one or more Woodsdale units were operated at minimum load (May, June, July, and October), provide the following:

   1. The length of time each unit was operated at the minimum load;
   2. The \$/MWh generation cost of operating the units using the natural gas price actually paid (not the maximum natural gas price) to operate the unit at minimum load; and
   3. The reasons the units were operated at the minimum load.

b. For each month of the review period that Duke Kentucky indicated that one or more Woodsdale units were operated at a load higher than minimum load (August and September), provide the following:

   1. The length of time each unit was operated at the load indicated;
   2. The highest \$/MWh generation cost of operating the units using the natural gas price actually paid (not the maximum natural gas price) to operate the unit at the load indicated; and
   3. The reasons the units were operated at the indicated load.

c. The second sentence of the partial paragraph at the bottom of page 8 of the response reads, "Using actual MWs generated by Duke Energy Kentucky's assets to determine the average heat rate does not correlate with generation MWs potentially avoided." For each month of the review period, provide the generation MWs avoided as a result of power purchases and the related avoided cost. Show how the avoided MWs were determined and the calculations of the related avoided cost. Include a narrative description of how the avoided generation and related avoided cost were derived.

RESPONSE:

<u>CONFIDENTIAL PROPRIETARY TRADE SECRET</u>

a. 1 - 2. Duke Energy Kentucky's response to Staff's Second Request, Item 2.e utilized data where the average of 5 minute intervals over an hour equaled 5 MW. There are many examples where Woodsdale operates at minimum load for individual 5 minute periods but the entire hour averages higher than 5 MW. Please see CONFIDENTIAL ATTACHMENT STAFF DR-03-003b1, being filed with the Commission under a Petition for Confidential Treatment, submitted in response to Staff-DR-03-003 for a list of exact loadings by 5 minute period.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e. stated that the highest cost unit operated during the month of May 2015 was Woodsdale 2 which operated at minimum load, on average, for a one hour period on 5/21/15 hour ending (HE) 10:00 EST. The gas price for delivery to Woodsdale on 5/21/15 was $3.40/MMbtu. The heat rate at minimum load was [redacted]

Btu/kWh. The average cost of a Woodsdale unit at minimum load on 5/21/15 was ([redacted])*3.40 = $[redacted]/MWh.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e stated that the highest cost unit operated during the month of June 2015 was Woodsdale 3 which operated at minimum, on average, for a one hour period on 6/3/15 HE 9:00 EST. The gas price for delivery to Woodsdale on 6/13/15 was $3.20/MMBtu. The heat rate at minimum load was [redacted]5 Btu/kWh. The average cost of a Woodsdale unit at minimum load on 6/13/15 was ([redacted])*3.2 = $[redacted]/MWh.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e stated that the highest cost units operated during the month of July 2015 were Woodsdale units 2,3,4,5 and 6 which operated at minimum load, on an hourly average basis, for two consecutive one hour periods on 7/18/15 HE 13:00 and 14:00 EST and again, for a single one hour period, on 7/27/15 HE 19:00 EST. The gas price for delivery to Woodsdale on 7/18/15 and 7/27/15 was $3.25/MMBtu. The heat rate at minimum load was [redacted] Btu/kWh. The average cost of a Woodsdale unit at minimum load on 7/18/15 and 7/27/15 was ([redacted])*3.25 = $[redacted].

There were no hourly average time periods in August and September 2015 where Woodsdale operated at minimum load. There were, however, multiple 5 minute periods where Woodsdale operated at minimum load. Please see CONFIDENTIAL ATTACHMENT STAFF-DR03-003b1, being filed with the

Commission under a Petition for Confidential Treatment, for a summary of 5 minute data.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e stated that the highest cost unit operated during the month of October 2015 was Woodsdale 3 which operated at minimum load, on average, for a one hour period on 10/15/15 HE 14:00 EST. The gas price for delivery to Woodsdale on 6/13/15 was \$3.05/MMBtu. The heat rate at minimum load was [redacted] Btu/kWh. The average cost of a Woodsdale unit at minimum load on 6/13/15 was ([redacted])*3.05 = \$[redacted]/MWh.

3. Woodsdale CTs were operated at minimum load because PJM directed the Company to do so, except for occasional testing of the unit. PJM does not fully disclose its reasons for starting and dispatching generating units. However, Woodsdale units provide maximum operating reserve capability to PJM when operating at minimum load. Experience shows that PJM is using Woodsdale in this manner.

b. 1 - 2. Duke Energy Kentucky's response to Staff's Second Request, Item 2.e utilized data where the average of 5 minute intervals over an hour equaled 5 MW. There were no hourly averaged time periods in August and September 2015 where Woodsdale operated at minimum load. There were, however, multiple 5 minute periods where Woodsdale operated at minimum load. Please see CONFIDENTIAL ATTACHMENT STAFF-DR03-003b1, being filed with the Commission under a Petition for Confidential Treatment, for a summary of 5 minute data.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e. stated that the highest cost units operating during the month of August 2015 were Woodsdale units 1,2,3 and 4 which operated at 11MWh, on average for a one hour period, on 8/19/15 hour ending (HE) 16:00 EST. The gas price for delivery to Woodsdale on 8/19/15 was $3.00/MMbtu. The heat rate at 11 MW was [redacted] Btu/kWh. The average cost of a Woodsdale unit at 11 MW on 8/19/15 was ([redacted])*3.00 = $[redacted]/MWh.

Duke Energy Kentucky's response to Staff's Second Request, Item 2.e. stated that the highest cost units operating during the month of September 2015 were Woodsdale units 1,2, and 3 which operated at 6 MWh, on average for a one hour period, on 9/17/15 hour ending (HE) 18:00 EST. The gas price for delivery to Woodsdale on 9/17/15 was $3.15/MMbtu. The heat rate at 6 MW was [redacted] Btu/kWh. The average cost of a Woodsdale unit at 6 MW on 9/17/15 was ([redacted])*3.15 = $[redacted]MWh.

3. Woodsdale CTs were operated because PJM directed the Company to do so, except for occasional testing of the unit. PJM does not fully disclose its reasons for starting and dispatching generating units. However, Woodsdale units provide maximum operating reserve capability to PJM when operating at minimum load. Experience shows that PJM is using Woodsdale in this manner.

c. In PJM, Duke Energy Kentucky offers in all of its available generation into both the day-ahead and real-time energy markets on the one hand, and on the other, must purchase all energy from PJM to satisfy its load. The net difference in terms of MWs of the two basic transaction concepts determines whether or not Duke Energy Kentucky is a net purchaser or seller on any given hour, day, week or month. PJM's security constrained economic dispatch process is the mechanism under which generation is committed in either the day-ahead or real time markets, having determined which generating units are best suited at any given moment to satisfy load and reliability requirements in the most economically efficient manner across the entire footprint, not just one utility's service territory. It is therefore not possible to determine, with certainty, which PJM units provided energy to Duke Energy Kentucky, were used to serve other load, or which units were used simply to provide congestion relief, reserves, and otherwise maintain system reliability.

That said, and understanding that Kentucky regulations were crafted at a time when energy markets had a different construct than they do today, and do not comport with the economics and functionality of the PJM market Duke Energy Kentucky has made an attempt to estimate avoided cost as requested by restricting the calculation to include only Duke Energy Kentucky owned generation and assumed that Duke Energy Kentucky's generation was used solely to serve Duke Energy Kentucky native load.

For purposes of this calculation, East Bend is assumed to be utilized to its full physical or economic potential at all times. Woodsdale CTs represent the only other generation owned by Duke Energy Kentucky that are available because Miami Fort Unit 6 was retired effective June 1, 2015. Calculations were made on an hour by hour basis comparing the cost of actual purchased power to what the cost would have been if Woodsdale CTs had been operated in lieu of purchased power. The number of Woodsdale CTs needed to supply the MWh amount of purchased power are calculated. The amount of purchased power in some hours is greater than what could be provided by the six existing Woodsdale units. Additional Woodsdale units, although they don't actually exist, are used to solve calculation in these instances. Each Woodsdale is assumed to run at the same loading. This would allow for operating reserves while also maximizing the generation MWh, and consequently minimizing the cost of energy provided. Daily as-delivered gas prices (not the highest monthly cost) were utilized. The $/MWh fuel cost of the avoided Woodsdale generation was calculated using the generation MWh, the heat rate at that specific MWh loading and the daily fuel price. Startup costs were amortized over the length of consecutive hours that each Woodsdale unit would have run. For example, if there is a five hour period where Duke Energy Kentucky purchased power then the startup cost of the Woodsdale CTs would be amortized evenly over 5 hours. The cost of fuel is added to the amortized startup cost each hour to arrive at a total cost of avoided Woodsdale generation. Variable O&M and emission allowance expense were not included for ease of analysis, although they are included in the actual supply offers submitted to PJM each day. Please see CONFIDENTIAL ATTACHMENT STAFF-03-005c, being filed with the Commission under a Petition for Confidential Treatment, for detailed results and formulas.

PERSON RESPONSIBLE: Scott Burnside

STAFF-DR-03-005c
CONFIDENTIAL
ATTACHMENT -
FILED UNDER SEAL
WITH A
PETITION FOR
CONFIDENTIAL
TREATMENT

Duke Energy Kentucky
Case No. 2016-00005
Staff Third Set Data Requests
Date Received: March 18, 2016

STAFF-DR-03-006

REQUEST:

Refer to Duke Kentucky's response to Staff's Second Request, Item 2.f.

a. Page 8 of the response states, "Using actual MWs generated by Duke Energy Kentucky's assets to determine the average heat rate does not correlate with generation MWs potentially avoided." Explain this statement.

b. Page 9 of the response states, "Calculating the threshold for recoverability of purchased power expense at something other than the minimum load creates a perverse situation where the utility is penalized for purchasing a MW of power at a lower $/MWh than what the Company could generate that same MW." Confirm that this statement assumes that the "same MW" was generated at the most inefficient levels of operation of which the generating unit is capable.

c. Page 10 of the response states that setting the threshold for disallowing purchased power at a load level other than minimum load "is establishing a new threshold standard that is no longer reflective of the Company's actual costs. . . ." The response also states, "Such a determination is artificially establishing a much lower threshold for excluding economy purchased power that is not tied in any way to the Company's true costs of operating its owned generation on a monthly basis. . . ." Explain how using the minimum load, regardless of the level of operation of the unit, and the maximum gas price, is reflective of Duke Kentucky's true costs of operating its owned generation.

RESPONSE:

a. Duke Energy Kentucky intended the statement to emphasize that a unit that actually runs is not the same as unit that is *available* to run but was avoided. Suppose during an hour that only one of the six Woodsdale units runs, and it is at maximum load. Suppose also that power was purchased in the same hour, but at a level something less than a Woodsdale CT is capable of generating at maximum load. There would be five remaining Woodsdale units *available* to run anywhere from minimum load to maximum loading. The MWh loading at which these remaining available units would need to operate would depend upon the quantity of MWhs being replaced. The highest cost of that avoided next MWh would be a Woodsdale CT's cost of dispatch at minimum load. Any purchased power below that cost should be an economic purchase.

b. The point of the statement was that, per the Commission's order, the question at issue is establishing the appropriate threshold for recovery of purchased power under the FAC at the utility's highest cost unit *available* to be dispatched. Power purchased at a price in excess of that "highest cost unit *available*" is not eligible for recovery through the FAC. Power purchased for a price less than that threshold is recoverable through the FAC. The Company believes this threshold should be established at a level that accurately reflects what equates to the Company's highest cost unit available to be dispatched consistent with the Commission's prior rulings.

If the dispatch cost of Woodsdale at full load (approx. 77MWs summer rating) is used as establishing that "cap," then the cap is being arbitrarily established at a $/MWh level that is something other than what actually equates to the Company's highest cost unit, which would be the $/MWh cost of a Woodsdale CT at *minimum* load. Establishing the cap at something other than minimum load $/MWh cost introduces inconsistency into the economy purchased power calculation. Suppose that the cost of a Woodsdale CT at full load (77 MW) is $40/MWh, the cost of Woodsdale CT at minimum load (5 MW) is $150/MWh, and the cost of 5 MW of purchased power is $90/MWh. Now suppose, a single Woodsdale CT is being dispatched at full load ($40/MWh), and the Company must also purchase an incremental 5 MWs ($90/MWh) in an hour to meet its native load, and the next 'available' Woodsdale unit was not dispatched by PJM In this case power purchased at $90/MWh was less than the cost of a Woodsdale CT providing 5 MW at $150/MWh. If the cap is established as the cost of a Woodsdale CT at full load ($40/MWh) then $50/MWh ($90 - $40) will be disallowed from FAC recovery even though purchasing power at $90/MWh was clearly a more economic option than running a Woodsdale CT at 5 MW. The arbitrary nature of such a premise is further exacerbated by the fact that in that scenario, Duke Energy Kentucky would not and could not run and PJM would not dispatch that next "available" Woodsdale CT at its full 77 MW load. Only 5 MWs were needed to satisfy Duke Energy Kentucky's native load requirement. And yet, establishing the threshold for FAC recoverability at the Woodsdale CT full load heat rate would imply that Duke Energy Kentucky should have done just that.

c. Using the minimum load of a Woodsdale unit for the economy purchase threshold calculation, rather than the actual loading of a Woodsdale unit and the maximum gas price is not intended to reflect Duke Energy Kentucky's *actual* cost of operation in a reporting month. Rather, it is reflective of Duke Energy Kentucky's true cost of its highest cost unit that was *available* to be dispatched to serve native load, which is the threshold established by the Commission in its May 2, 2002 Order in Case No 2000-00495-B1 and May 2, 2002 Order in Case No. 2000-00496-B2 interpreting the FAC regulation.

> "We interpret Administrative Regulation 807 KAR 5:056 as permitting an electric utility to recover through its FAC only the lower of the actual energy cost of the non-economy purchased energy or the fuel cost of its highest cost generating unit *available to be dispatched to serve native load* during the reporting expense month." *Emphasis added.*

The Order does not say "... highest cost generating unit 'available to be fully dispatched,' or 'actually dispatched.'" Duke Energy Kentucky's highest cost unit *available* to be dispatched is, in fact, a Woodsdale unit operating at minimum load. Calculating the $/MWh fuel cost of a unit at any loading, other than minimum load, mathematically and factually results in a solution that is something other than the Company's highest cost unit *available*. Using the maximum gas price during the month is, likewise, reasonable and logical to calculate the highest cost generating unit available to be dispatched to serve native load during the reporting expense *month.*

A Woodsdale CT at maximum load (irrespective of if it was actually dispatched as such), or at any actual monthly load that is not minimum load, is simply not reflective of the highest cost that is available to be dispatched. This is especially apparent when PJM dispatches the Woodsdale CTs at levels less than maximum loading, and in fact dispatches Woodsdale CTs at minimum load. Even if PJM dispatches Woodsdale CT unit 1, at its maximum load, Woodsdale Units 2 through 6 would still be available to be dispatched by PJM at minimum load to serve native load if needed.

The question posed implies that the threshold established by the Commission was that a Company's actual cost of dispatch in a month should be used as a cap for purchased power, no more, and irrespective of whether other units were not called upon to serve native load. What was *available* to be dispatched, and what was *actually* dispatched are two different concepts. The latter is a moving target that changes monthly with load, season, and availability of other generation in the market and results in a hindsight review, that is not reflective of the facts available at the time when dispatch decisions are made. The utility's highest cost unit available to be dispatched in a month is relatively static and assumes a unit is capable of operating at a particular level that reflects its highest cost varying merely upon the delivered cost of fuel. The $/MWh costs of a Woodsdale CT that is available to be dispatched at 5 MWs versus at 75 MWs are different. Establishing the FAC threshold for purchased power at the utility's actual or "true" cost for each month means that the utility could only recover purchased power that was lesser in price than the most expensive unit that was actually dispatched during the month, not at the highest cost unit that was *available* to be dispatched.

There have been times where no Woodsdale CTs were dispatched despite being "*available.*" And in those situations the Company's coal-fired East Bend Unit was the only "owned" unit *actually* dispatched in a given month. This is due to market prices, not load requirements. East Bend alone does not wholly satisfy our native load obligation in every hour and additional MWs are necessary whether generated directly from Woodsdale or purchased in the market. Interpreting the Commission's previous directives that the utility's highest cost unit available to be dispatched is limited to the unit that was actually dispatched (*i.e. "true" monthly cost of its owned generation)*, would mean for Duke Energy Kentucky that any additional power purchased at a price in excess of the $/MWh of East Bend would be disallowed even though all such additional power purchased was at a $/MWh less than what it would have cost to generate at an "available" Woodsdale unit. Such a result is unfairly punitive to the Company because it denies the ability to recover the true cost of fuel. Instead, it creates the incentive for the company to operate its own units despite costs and not attempt to make economy power purchases to benefit customers. Otherwise, at the end of the month, the Company is punished for buying power when its owned, higher cost, generation is not dispatched.

PERSON RESPONSIBLE: Scott Burnside

Duke Energy Kentucky
Case No. 2016-00005
Staff Third Set Data Requests
Date Received: March 18, 2016

PUBLIC STAFF-DR-03-007
As to Attachment Only

REQUEST:

Refer to Duke Kentucky's response to Staff's Second Request, Item 2.g., Staff-DR-02-002(g) B CONF Attachment. State whether the natural gas price used for this attachment was the natural gas price actually paid (not the maximum natural gas price) to operate the unit at the load specified. If not, provide a revised attachment using the natural gas price actually paid.

RESPONSE:

CONFIDENTIAL PROPRITARY TRADE SECRET (AS TO ATTACHMENT ONLY)

The natural gas price used in Staff-DR-02-002(g) B CONF Attachment was the highest natural gas price in each month.

Please see CONFIDENTIAL ATTACHMENT STAFF-DR-03-007, being provided under a Petition for Confidential Treatment, for revised calculations that utilize daily natural gas prices. Each day, a natural gas price, obtained either through actual transactions or observed market activity, is used to calculate the Woodsdale supply offers to PJM. Please note that these prices are market prices for each unique day and are only representative of natural gas prices actually paid on days when gas was purchased for the Woodsdale units.

Duke Energy Kentucky submits that neither of these requested analyses utilizing actual cost and actual MW loading are appropriate, reasonable, or consistent given that the analyses do not comport with the Commission's May 2, 2002 Order in Case No. 2000-00495-B1 and May 2, 2002 Order in Case No. 2000-00496-B2 and do not reflect Duke Energy Kentucky's highest cost unit available to be dispatched. It is logical, reasonable, factually supportable, and accurate to use a Woodsdale CT at minimum load as the calculation to establish the Company's highest cost unit *available* to be dispatched. Evidence shows that PJM can and does dispatch Woodsdale units at minimum load. And a Woodsdale unit at minimum load is, in fact, the Company's highest cost unit available to be dispatched. Using a calculation other than minimum load is arbitrary and establishes a benchmark that is based upon something other than Duke Energy Kentucky's highest cost unit that is *available* to be dispatched. Similarly, using the highest observed gas price during a month results in a price that represents the highest cost unit available to be dispatched during the reporting month.

PERSON RESPONSIBLE: Scott Burnside and John Swez

STAFF-DR-03-007 CONFIDENTIAL ATTACHMENT - FILED UNDER SEAL WITH A PETITION FOR CONFIDENTIAL TREATMENT

Duke Energy Kentucky
Case No. 2016-00005
Staff Third Set Data Requests
Date Received: March 18, 2016

STAFF-DR-03-008

REQUEST:

Provide the MW capacity of each of the Woodsdale units.

RESPONSE:

The net capacity of each of the 6 Woodsdale CT units are the same as follows:

94 MW Winter (December-March)

77 MW Summer (June-September)

86 MW Spring (April-May)

86 MW Fall (October-November)

PERSON RESPONSIBLE: Scott Burnside