

May 23, 2005

Beth O'Donnell  
Executive Director  
Public Service Commission of Kentucky  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, Kentucky 40602-0615

RECEIVED

MAY 23 2005

PUBLIC SERVICE  
COMMISSION

Judith A. Villines  
(502) 209-1230  
(502) 223-4389 FAX  
jvillines@stites.com

Re: Kentucky Power Company's Second Amended Environmental  
Compliance Plan and Second Revised Tariff  
PSC Case No. 2005-00068

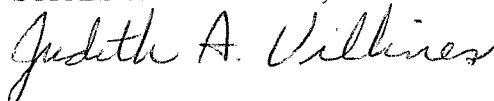
Dear Ms. O'Donnell:

Enclosed for filing are the originals and six (6) copies of Kentucky Power Company's Responses to KIUC's Second Set of Data Requests and to the Commission Staff's Third Set of Data Requests. Because of the volume of some of the documentation required for some of the responses, CDs are being provided with the Commission's originals for the response to KIUC Question No. 2 and Commission Question No. 1.

Please contact me at 502-223-3477 if you have any questions or require anything further.

Sincerely,

STITES & HARBISON, PLLC



Judith A. Villines

JAV:las

Enclosures

cc: Michael L. Kurtz (w/enclosures)  
Elizabeth E. Blackford (w/enclosures)  
Errol K. Wagner (w/o enclosures)  
Kevin F. Duffy (w/o enclosures)

KE057:KE113:12306:1:FRANKFORT

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

MAY 23 2005

PUBLIC SERVICE  
COMMISSION

In the Matter of:

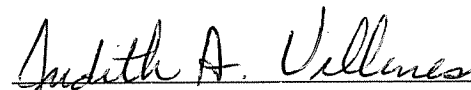
APPLICATION OF KENTUCKY POWER COMPANY )  
FOR APPROVAL OF AN AMENDED COMPLIANCE )  
PLAN FOR PURPOSES OF RECOVERING )  
ADDITIONAL COSTS OF POLLUTION CONTROL )  
FACILITIES AND TO AMEND ITS ENVIRONMENTAL )  
COST RECOVERY SURCHARGE TARIFF )

CASE NO.  
2005-00068

GENERAL OBJECTION OF  
KENTUCKY POWER COMPANY  
TO  
KIUC'S SECOND SET OF DATA REQUESTS

Kentucky Power hereby objects to KIUC's Second Set of Data Requests as being outside the scope of this proceeding, irrelevant and immaterial, not calculated to lead to relevant information, and burdensome. Notwithstanding this objection, and without waiving it, Kentucky Power provides the following responses.

Respectfully submitted,



\_\_\_\_\_  
Judith A. Villines  
Bruce F. Clark  
STITES & HARBISON, PLLC  
421 West Main Street  
P.O. Box 634  
Frankfort, Kentucky 40602-0634  
Telephone: 502-223-3477

**CERTIFICATE OF SERVICE**

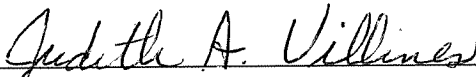
I hereby certify that a true and accurate copy of the foregoing was served via United States Postal Service, First Class Mail, postage prepaid, upon:

Michael L. Kurtz  
Boehm, Kurtz & Lowry  
2110 CBLD Center  
36 East Seventh Street  
Cincinnati, Ohio 45202

Elizabeth E. Blackford  
Kentucky Attorney General's Office  
Suite 800  
1024 Capital Center Drive  
Frankfort, Kentucky 40601-8204

Richard G. Raff  
Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, Kentucky 40602-0615

on this the 23<sup>th</sup> day of May, 2005.

  
\_\_\_\_\_  
Judith A. Villines

RECEIVED

MAY 23 2005

PUBLIC SERVICE  
COMMISSION

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE**  
**PUBLIC SERVICE COMMISSION OF KENTUCKY**

**IN THE MATTER OF**

**KENTUCKY POWER COMPANY'S SECOND )**  
**AMENDED ENVIRONMENTAL COMPLIANCE )**  
**PLAN AND SECOND REVISED TARIFF )**

**Case No. 2005-00068**

**RESPONSES OF KENTUCKY POWER**  
**D/B/A**  
**AMERICAN ELECTRIC POWER**

**COMMISSION STAFF THIRD SET OF DATA REQUESTS**

**May 23, 2005**



**Kentucky Power  
d/b/a  
American Electric Power**

**REQUEST**

Refer to the response to the Commission Staff's Second Data Request dated April 18, 2005 ("Staff's Second Request"), Item 1. Page 2 of 79 in the response addresses the options available concerning the electrostatic precipitator ("ESP") controls upgrade at Tanners Creek Plant Unit No. 4. Page 7 of 79 in the response establishes that continuous emission monitors ("CEMS") were required by the provisions of the Clean Air Act Amendments of 1990. The ESP controls upgrade at Tanners Creek Plant Unit No. 4 and the CEMs constitute 8 of the 53 projects shown on Exhibit JMM-1. However, the analyses provided in the response generally do not adequately describe the options, alternative technologies, and evaluation processes used at the time the remaining projects shown on Exhibit JMM-1 were selected.

- a. For each of the remaining 45 projects, did American Electric Power Company ("AEP") or the AEP Pool Surplus Companies perform an analysis similar to the ones that were done for the environmental projects installed at Kentucky Power's Big Sandy Generating Station (as shown in the response to Item 1 of the Staff's Second Request, pages 18 through 45 and 69 through 77 of 79)?
- b. If yes to part (a), provide copies of the analyses performed.
- c. If no to part (a), for each project explain in detail why an analysis similar to the analyses submitted in the response to Item 1 was not performed.

**RESPONSE**

- a. AEP evaluated the reasonableness and cost effectiveness of its compliance plans, taking into consideration options and alternative technologies, as described in the answer to part b., below. As explained in Response to Item 1 of the Staff's 2nd Set, pages 18 through 45 and 69 through 77 of 79, AEP utilizes an optimization analysis to select the appropriate emission control technology. AEP did not produce a written discussion of the analysis results in the form provided to the Commission for the Big Sandy projects. The Big Sandy write-up provided in the response to Item 1 of the Staff's 2nd (pages 18 through 45 and 69 through 77 of 79) was specifically developed in connection with Kentucky Power's filings in cases 2001-00093 and 2002-000169.

“ The AEP technical staff provided a written analysis to the AEP Board for each project, except the two small projects identified in response to part c below, in the form of capital improvement documentation. That documentation is being provided on a CD submitted with these responses.”

b. As explained in the response to part (a), AEP did not, in the course of performing its analysis, prepare a written discussion of the analysis results for the 45 projects in the form of the Big Sandy write-up. Nevertheless, the analysis generally mirrored those performed for the Big Sandy Projects. The following provides a general description of the options, alternative technologies, and evaluation processes used to determine the appropriate control equipment mix for the AEP units under both the Title IV NOx Program and the NOx SIP Call Program.

NOx Reduction Projects Driven by the Title IV NOx Program:

The AEP Acid Rain Compliance Plan analysis was used to determine the appropriate NOx controls necessary to comply with the Title IV Acid Rain Program. In 1990, Congress passed legislation amending the Clean Air Act, which directed US EPA to establish NOx emission limits for utility boilers. Congress determined that these NOx emission limits were to be based upon the levels achievable and the costs comparable with low NOx burner technology. Implementation of the NOx reduction program was initiated in two phases (Phase I with a compliance date of 1996 and Phase II with a compliance date of 2000). The Mitchell Units 1 and 2 low NOx burner projects in the mid-1990's are the only Phase I projects that are included in case 2005-00068. The other Title IV NOx reduction projects are in response to Phase II requirements.

The Title IV NOx program established unit specific NOx limits. In general, AEP's analysis was driven by the need to meet these unit specific limits, considering equipment limitations, technology capabilities and cost (where more than one technology is capable of achieving the required reductions). The methodology used by AEP in the 1990's to evaluate the NOx control plan in the context of the Title IV NOx program, as required by the US EPA regulations, and develop a recommended course of action was comprised of:

Determine the expected costs of NOx reduction technology applicable for each unit including costs in the current NOx compliance plan.

Develop NOx emission rate curves for each stack based on CEMS data (Baseline) and project the NOx emission rates for possible retrofitted combustion NOx control technologies.

Determine a Base Case that would bring the AEP System into compliance.

Calculate the cost for the study period to achieve compliance for each unit within the AEP System.

Evaluate the impact on the AEP System NO<sub>x</sub> Averaging Plan for the Base Case and Sensitivities Evaluate the incremental costs and benefits of applying additional NO<sub>x</sub> control technology beyond the installation of Low NO<sub>x</sub> Burners to increase the compliance margin of the AEP System NO<sub>x</sub> Averaging Plan to allow for increased load and/or operational variations.

In general, low NO<sub>x</sub> burners and over-fire air were determined to be the most cost effective solutions for compliance with the Title IV NO<sub>x</sub> control requirements.

The use of over-fire air (OFA) in the overall compliance strategy was minimized initially because it significantly increases the potential for furnace corrosion, particularly with supercritical pressure boiler applications, and increases the unburned carbon concentration in the fly ash. The use of OFA was considered only on subcritical boiler applications.

Other technologies considered for Title IV NO<sub>x</sub> compliance included burners-out-of-service (BOOS), interjectory air, water injection, gas reburn, SCR and SNCR. BOOS and interjectory air are both forms of OFA for specific applications. BOOS is limited to applications in which coal and equipment specifications allow for the uppermost burners to be removed from service and still meet the heat input demands. Interjectory air is a form of OFA used in roof-fired applications in which the air is introduced below the primary coal injector or burner elevations. Water injection utilizes water to preferentially cool the combustion zones that have a very hot and oxidizing combustion mixture. While water injection required relatively minimal capital investment, it also produced a unit efficiency penalty due to raising the injected moisture's temperature from its inlet ambient condition to the unit's stack discharge temperature. Gas reburn technology was determined not to be cost effective due to the high differential in the cost between coal supplies and natural gas for the AEP plant operating regions and the resulting high per ton cost of NO<sub>x</sub> emission reduction. Both the use of ammonia based selective catalytic reduction (SCR) and urea based selective non-catalytic reduction (SNCR) were considered on several of the most appropriate unit applications. Both of these post-combustion technologies were typically on the order of 2 to 4 times the cost (per ton NO<sub>x</sub> removed) of low NO<sub>x</sub> burners when operated at peak efficiency. Furthermore, Congress had specifically established low NO<sub>x</sub> burner technology as the basis for the Title IV NO<sub>x</sub> program and indicated that application of post-combustion technologies such as SCR and SNCR were not appropriate for this control program.

#### NO<sub>x</sub> Reduction Projects Driven by the NO<sub>x</sub> SIP Call:

The methodology used by AEP in the early 2000's to evaluate the NO<sub>x</sub> control plan in the context of the NO<sub>x</sub> SIP Call emission control options employed the use of a production cost simulation model to provide data for the optimization analysis.



The analysis considered regulatory emission requirements and the available NO<sub>x</sub> reduction options, i.e. Over-Fire Air, Deep Stage Combustion, Water Injection, Burner Alterations, Selective Non-Catalytic Reduction, Combined OFA/SNCR, Selective Catalytic Reduction, Powder River Basin (PRB) Fuel Blend, OFA/PRB Fuel Blend, Gas Reburn, Amine Enhanced Fuel Lean Gas Reburning, Unit Optimization (Neural Network), 100% Gas Conversion, and Do Nothing (Unit Curtailment). Some options were not considered at certain installations because either the technology is already implemented, not available or physically impractical.

An optimization algorithm was developed within AEP in order to help identify cost effective strategies and sensitivities to a host of variables that affect the system optimization, including market forecasts, unit-specific technology capital costs, and unit-specific technology incremental operating costs. The optimization analysis process is described on pages 26 through 40 of 79 in response to item 1 of the second request.

Justification Details for Specific Projects:

As further documentation of the justification for the specific projects, the internal AEP capital improvement documentation is being submitted for the majority of the specific projects.

“See the CD (described in response 1a above) being submitted with these responses.”

c. No detailed analysis was performed for the following projects because the project cost was smaller, relative to the larger capital projects typically covered under individual capital improvement requisitions.

- Mitchell Plant Common – Replace Burner Barrier Valves
- Muskingum River Plant Unit 1 – Water Injection Modifications

These smaller projects are generally completed under plant production blanket work orders and do not typically include detailed analyses.

**WITNESS:** John M McManus



**Kentucky Power  
d/b/a  
American Electric Power**

**REQUEST**

If AEP or the AEP Pool Surplus Companies did not perform written evaluation analyses that identified options and alternative technologies, and no utility regulatory commission approvals were sought, for the projects listed in Exhibit JMM-1, explain in detail how the Commission can determine that the proposed amendments to Kentucky Power's environmental compliance plan are reasonable and cost-effective for compliance with applicable environmental requirements.

**RESPONSE**

As demonstrated in response to Item No. 1 of Staff-3rd Set, the Company has made a good faith effort in this proceeding and in all prior environmental proceedings to demonstrate to this Commission that it has followed reasonable and well-recognized procedures within the industry to insure that it complies with the stringent and extensive environmental regulations in an effective and cost-efficient manner. AEP has analyzed all available technology that can reasonably be expected to meet the standards and has utilized models to determine the most effective and efficient mix of technologies that will meet the standards at the lowest overall price.

AEP previously employed Stone & Webster Consultants to provide a Third Party Environmental Compliance Plan and Cost Review for Big Sandy Units 1 and 2. This report was provided to the Commission as JJY EXHIBIT 1 in Case No. 2002-00169. Stone & Webster Consultants indicated in this September 2002 report that their previous due diligence work for other clients had resulted in a range of SCR retrofit costs from \$50/kW to \$190/kW. Stone & Webster Consultants also indicated that the cost trend was increasing. As shown in the table attached hereto, the SCR costs for the projects included in the current filing (Case No. 2005-00068) compare very favorably with the SCR benchmarking costs previously provided by Stone & Webster Consultants. Furthermore, the cost of the non-SCR NOx reduction projects included in the filing for Case No. 2005-00068 compare very favorably with the Big Sandy Unit 1 NOx reduction costs previously approved by the Commission. The Big Sandy Unit 1 NOx reduction costs were \$14.06/kW based on a total project cost of \$3,655,510 and a Unit 1 capacity of 260,000 kW.

Moreover, the Commission must recognize these costs as reasonable and cost-effective pursuant to the doctrine of federal preemption. Both the Commission and the Franklin Circuit Court have addressed this issue in orders arising from the first environmental surcharge case for Kentucky Power Company. In Case 96-489 the Commission declared in its order:

The Commission finds that federal preemption mandates our acceptance of the FERC jurisdictional agreements as reasonable. To the extent that environmental costs are part of the total costs Kentucky Power is allocated under the terms of these agreements, the costs must be accepted as reasonable. Contrary to KIUC's position, federal preemption is applicable and controls in this instance, not only for the allowance purchases required under the IAA, but also for the costs Kentucky Power is required to pay under the terms of the Rockport Unit Power Agreement and the Interconnection Agreement. Due to the application of federal preemption, the Commission is required to accept as reasonable the costs incurred under these FERC agreements. Consequently, all of the arguments presented by the AG and KIUC in opposition to the reasonableness of such costs are not appropriate for consideration by this Commission.<sup>1/</sup>

The Franklin Circuit Court subsequently "accept[ed] the Kentucky Public Service Commission's interpretation of the doctrine of federal preemption as it relates to this case." *Commonwealth of Kentucky v. Kentucky Public Service Commission*, Amended Opinion & Order, Consolidated Civil Action Nos. 97-CI-01144, 97-CI-01138, 97-CI-01319.

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<sup>1/</sup> In the Matter of : Application of Kentucky Power Company d/b/a American Electric Power to Assess a Surcharge Under KRS 278.183 to recover costs of compliance with the clean air act and those environmental requirements which apply to coal combustion waste and by-products, May 27, 1997 Order at p. 16.

**WITNESS:** John M McManus

Generating Unit	Project Description	New Facilities Cost (\$1000s)	Generating Unit Capacity (kw net)	Cost per kw (\$)
Amos Unit 3	Low NOx Burners	\$6,681	1,300,000	\$5.14
Amos Unit 3	SCR	\$83,916	1,300,000	\$64.55
Cardinal Unit 1	Low NOx Burners	\$5,912	800,000	\$7.39
Cardinal Unit 1	SCR and associated SO3 Mitigation System	\$92,978	800,000	\$116.22
Gavin Plant Unit 1	Low NOx Burners	\$14,431	1,300,000	\$11.10
Gavin Plant Unit 1	SCR Catalyst Replacement	\$12,962	1,300,000	\$9.97
Gavin Plant Unit 2	Low NOx Burners	\$13,472	1,300,000	\$10.36
Gavin Plant Common	SCR and associated SO3 Mitigation	\$228,921	2,600,000	\$88.05
Kammer Plant Unit 1	Over Fire Air and Duct Modification	\$1,895	210,000	\$9.02
Kammer Plant Unit 2	Over Fire Air and Duct Modification	\$2,295	210,000	\$10.93
Kammer Plant Unit 3	Over Fire Air and Duct Modification	\$2,293	210,000	\$10.92
Mitchell Plant Unit 1	Low NOx Burners	\$10,413	800,000	\$13.02
Mitchell Plant Unit 1	Water Injection and Low NOx Burner Modifications	\$1,597	800,000	\$2.00
Mitchell Plant Unit 2	Low NOx Burners	\$9,922	800,000	\$12.40
Mitchell Plant Unit 2	Low NOx Burner Modifications	\$619	800,000	\$0.77
Mitchell Plant Common	Replace Burner Barrier Valves	\$326	1,600,000	\$0.20
Muskingum River Unit 1	Low NOx Ductwork and Over Fire Air	\$1,215	205,000	\$5.93
Muskingum River Unit 1	Over Fire Air Modifications and Water Injection	\$1,528	205,000	\$7.45
Muskingum River Unit 1	Water Injection Modifications	\$106	205,000	\$0.52
Muskingum River Unit 2	Low NOx Ductwork and Over Fire Air	\$1,004	205,000	\$4.90
Muskingum River Unit 2	Over Fire Air Modifications and Water Injection	\$1,254	205,000	\$6.12
Muskingum River Unit 3	Over Fire Air	\$984	215,000	\$4.58
Muskingum River Unit 3	Over Fire Air Modifications	\$868	215,000	\$4.04
Muskingum River Unit 4	Over Fire Air	\$838	215,000	\$3.90
Muskingum River Unit 4	Over Fire Air Modifications	\$819	215,000	\$3.81
Muskingum River Unit 5	Low NOx Burners	\$5,572	585,000	\$9.52
Muskingum River Unit 5	Low NOx Burner Modifications and Weld Overlays	\$2,144	585,000	\$3.66
Muskingum River Unit 5	SCR	\$98,297	585,000	\$168.03
Philip Sporn Unit 2	Low NOx Burners	\$2,684	150,000	\$17.89
Philip Sporn Unit 2	Low NOx Burner Modifications	\$617	150,000	\$4.11
Philip Sporn Unit 4	Low NOx Burners and Modulating Inject. Air	\$2,249	150,000	\$14.99
Philip Sporn Unit 4	Low NOx Burner Modifications	\$728	150,000	\$4.85
Philip Sporn Unit 5	Low NOx Burners and Modulating Inject. Air	\$4,597	450,000	\$10.22
Rockport Unit 1	Low NOx Burners	\$16,753	1,300,000	\$12.89
Rockport Unit 2	Low NOx Burners	\$16,712	1,300,000	\$12.86
Tanners Creek Unit 1	Low NOx Burners	\$1,459	145,000	\$10.06
Tanners Creek Unit 1	Low NOx Burner Modifications	\$1,300	145,000	\$8.97
Tanners Creek Unit 1	Low NOx Burner Leg Replacement	\$605	145,000	\$4.17
Tanners Creek Unit 2	Low NOx Burners	\$2,673	145,000	\$18.43
Tanners Creek Unit 2	Low NOx Burner Modifications	\$1,284	145,000	\$8.86
Tanners Creek Unit 3	Low NOx Burners	\$3,823	205,000	\$18.65
Tanners Creek Unit 3	Low NOx Burner Modifications	\$858	205,000	\$4.19
Tanners Creek Unit 4	Over Fire Air/Low NOx Burners	\$3,419	500,000	\$6.84



**Kentucky Power  
d/b/a  
American Electric Power**

**REQUEST**

Assume for purposes of this question that in 2005 Kentucky Power did not file this application for an amendment to its environmental surcharge, but instead filed an application for an adjustment to its base rates. Could the costs associated with the projects identified in Exhibit JMM-1 be included in the determination of Kentucky Power's base rate revenue requirements? Explain the response.

**RESPONSE**

Yes. The costs associated with the projects identified in Exhibit JMM-1 would be properly included in the determination of Kentucky Power Company's base rates revenues requirement had the Company filed for an adjustment in base rates instead of a recovery of the environmental costs through the surcharge statute. These costs would be included in the AEP Pool capacity equalization charges as operation and maintenance expense, as appropriate, for the ratemaking test year. However, KRS 278.183 allows for current recovery of environmental costs required to comply with the Federal Clean Air Act without a utility filing for a change in base rates.

**WITNESS: Errol K Wagner**





**Kentucky Power**  
**d/b/a**  
**American Electric Power**

**REQUEST**

Refer to Exhibit EKW-1 and the response to the Staff's Second Request, Item 5. For each of the projects listed below, show how the information provided in the response to Item 5 reflects the amount shown as "New Environmental Facilities Cost" on Exhibit EKW-1.

- a. Line 10, Gavin Plant Unit Common, SCR Associated SO3 Mitigation System, page 1 of 4.
- b. Line 12, Kammer Plant Unit 2, Over Fire Air and Duct Modification, page 1 of 4.
- c. Line 13, Kammer Plant Unit 3, Over Fire Air and Duct Modification, page 1 of 4.
- d. Line 43, Rockport Unit 2, Low NOx Burners, page 4 of 4.
- e. Line 53, Tanners Creek Plant Common, Continuous Emissions Monitoring System, page 4 of 4.

**RESPONSE**

Please refer to the attached pages to this response.

**WITNESS:** Errol K Wagner

Kentucky Power Company  
Case No. 2005-00068  
Gavin Plant Unit Common  
SCR Associated SO3 Mitigation System  
Exhibit EKW-1 Line 10

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4a  
Page 2 of 9

Ln No		Amount
1	Company's Response Item No 5 page 50	\$6,329,738.77
	Company's Response Item No 5 page 63	\$196,827,167.32
1	Company's Response Item No 5 page 66	\$7,235,661.69
2	Company's Response Item No 5 page 67	\$5,379,319.86
3	Company's Response Item No 5 page 69	<u>\$13,149,493.79</u>
4	Total	<u><u>\$228,921,381.43</u></u>

Kentucky Power Company  
Case No. 2005-00068  
Kammer Plant Unit No. 2  
Over Fire Air & Duct Modification  
Exhibit EKW-1 Line 12

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4b  
Page 3 of 9

Ln No		Amount
1	Company's Response Item No 5 page 74	\$1,421,157.77
2	Company's Response Item No 5 page 75	\$74,756.36
3	Company's Response Item No 5 page 76	\$791,366.12
4	Company's Response Item No 5 page 77	<u>\$7,356.32</u>
5	Total	<u><u>\$2,294,636.57</u></u>

Kentucky Power Company  
Case No. 2005-00068  
Kammer Plant Unit No. 3  
Over Fire Air & Duct Modification  
Exhibit EKW-1 Line 13

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4c  
Page 4 of 9

Ln No		Amount
1	Company's Response Item No 5 page 78	\$1,153,614.04
	Company's Response Item No 5 page 79	\$349,677.75
1	Company's Response Item No 5 page 81	\$170,674.67
2	Company's Response Item No 5 page 82	\$12,657.60
3	Company's Response Item No 5 page 83	<u>\$607,642.45</u>
4	Total	<u><u>\$2,294,266.51</u></u>

Kentucky Power Company  
Case No. 2005-00068  
Rockport Unit No. 2  
Low Nox Burners  
Exhibit EKW-1 Line 43

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4d  
Page 5 of 9

<u>Ln No</u>	<u>Source</u>	<u>Amount</u>
1	Company's Response Item No 5 page 198	\$3,040,432.38
2	Company's Response Item No 5 page 199	\$3,686,048.02
3	Company's Response Item No 5 page 200	\$742,459.79
4	Company's Response Item No 5 page 201	\$570,451.25
5	Company's Response Item No 5 page 202	<u>\$264,188.15</u>
6	AEGenerating Total	<u>\$8,303,579.59</u>
7	Company's Response Item No 5 page 203	\$3,085,269.89
8	Company's Response Item No 5 page 204	\$3,715,221.45
9	Company's Response Item No 5 page 205	\$748,001.10
10	Company's Response Item No 5 page 206	\$583,004.31
11	Company's Response Item No 5 page 207	<u>\$276,356.77</u>
12	I&M Total	<u>\$8,407,853.52</u>
13	Rock Unit No. 2 Total (Lns 6+12)	<u>\$16,711,433.11</u>

Kentucky Power Company  
Case No. 2005-00068  
Tanners Creek Plant Common  
Continuous Emissions Monitoring System  
Exhibit EKW-1 Line 53

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4e  
Page 6 of 9

Ln No		Amount
1	Company's Response Item No 5 page 235	\$1,114,462.00
2	Three pages left out of May 2, 2005 filing	<u>\$1,513,327.00</u>
3	Total	<u><u>\$2,627,789.00</u></u>

**AEP Power Generation  
Work Order Completion Report**

*Field  
Copy*

KPSC Case No. 2005-00068  
Staff 3<sup>rd</sup> Set Data Request  
Order Dated May 13, 2005  
Item No. 4a  
Page 7 of 9

To: G.O. Accounting Department - Electric Plant  
City Lawrenceburg

Company No.:	04	CIA No.:	31575	Work Order:	772/0509
Plant:	TannersCreek	Location/Site No.:		In/Out Service Date	7/1/1994
Project No.:	00105	Tax District:	11401	Last Activity Date	

Work Order Description  
 Continuous Emissions Monitoring System  
 Units - 1, 2, 3  
 JL ENTRY NO. 704 AUG '98

Prepared By: T. Leibbecke / E. Howaniec, Jr. Date: August 17, 1998

Control Account		Quantity	Material Cost	Total Installed Cost
Primary Account (Detail Plant or Expense Account)				
PRU/PAN/PIN				
Material and Equipment / Remarks				
00101	Electric Plant in Service			
312.10	Boiler Plant Equipment			
	Continuous Emissions Monitoring System			
	consisting of:			
	Analyzer-NO <sub>x</sub> , Thermo Environmental			
	Model # 42D	2	\$14,492	
	Analyzer-NO <sub>x</sub> , Land Combustion			
	Model # 7100	3	\$75,090	
	Analyzer-SO <sub>2</sub> , Lear Siegler, Model # 8850	2	\$13,400	
	Analyzer-CO, Rosemount,			
	Model # 5100115254, w/ 3 control			
	modules, Sending units, Receiver units,			
	and Thermocouples	1	\$35,700	
	Monitor-CO <sub>2</sub> , Infra-red, Milton Roy,			
	Model # 3300A	2	\$8,182	
	Monitor-Gas flow & Temperature, United			
	Science, Model # 100	2	\$31,496	
	Monitor-Opacity, Unity Science,			
	Model # 500C, w/ Microprocessor,			
	remote panel; 4) Optical heads, & Retro			
	assemblies	4	\$60,886	





