B&V PROJECT #: 168908
PROJECT ESTIMATOR: Ron Fields
PROJECT MANAGER: Tim Hillman
PURPOSE OF ESTIMATE: Budgetary
ESTIMATE DATE: April-11

LOCATION: Mercer County, KY
PLANT TYPE: PC Fired Boiler
CLIENT: LG&E - KU
PARTNER: N/A
CURRENCY: US Dollars

PARTNER: CURRENCY: BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

		PROJECT - TOTAL COSTS							
Contract		Engr Equip	Commodities					% OF	\$ PER
Number	Description	Material \$	Material \$	Labor \$	Manhours	Other	TOTAL \$	TOTAL C.V.	KW 110
ESTIMATI	E SUMMARY								
Purchase C	Contractor								
	Civil / Structural	\$1,342,800	\$20,385	\$0	0	\$271,800	\$1,634,985	1.08%	\$14.86
61.3801	Ductwork and breeching	\$4,002,990	\$0	\$0	0	\$0	\$4,002,990	2.64%	\$36.39
	<u> </u>	\$837,150	\$0	\$0	0	\$50,000	\$887,150	0.59%	\$8.07
63.0000	Electrical - BOP, Equipment, Raceway	\$317,500	\$4,077,839	\$0	0	\$0	\$4,395,339	2.90%	\$39.96
63.3603	Switchgear and MCCs	\$1,070,300	\$0	\$0	0	\$0	\$1,070,300	0.71%	\$9.73
63.3802		\$294,376	\$0	\$0	0	\$0	\$294,376	0.19%	\$2.68
63.3803	Aux Transformer	\$278,500	\$0	\$0	0	\$0	\$278,500	0.18%	\$2.53
64.0000	Control - DCS, Instrumentation	\$996,000	\$205,525	\$0	0	\$0	\$1,201,525	0.79%	\$10.92
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.38%	\$5.18
65.3120		\$4,400,000	\$0 \$0	\$0 \$0	0	\$0 ©0	\$4,400,000	2.90%	\$40.00
65.3210 65.3310	Sorbent Injection Selective Catalytic Reduction System	\$750,000 \$11,010,860	\$0 \$0	\$0 \$0	0	\$0 \$0	\$750,000 \$11,010,860	0.50% 7.27%	\$6.82 \$100.10
65.3500	H-PAC Mercury Control	\$500,000	\$0 \$0	\$0 \$0	0	\$0 \$0	\$500,000	0.33%	\$4.55
66.1000	•	\$291,381	\$0 \$0	\$0 \$0	0	\$0 \$0	\$291,381	0.19%	\$2.65
66.2070		\$0	\$579,250	\$0	0	\$0	\$579,250	0.38%	\$5.27
66.3000	• • • • • • • • • • • • • • • • • • • •	\$0	\$523,200	\$0	0	\$0	\$523,200	0.35%	\$4.76
67.0414	Fly Ash Handling System	\$0	\$0	\$0	0	\$4,700,000	\$4,700,000	3.10%	\$42.73
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.17%	\$2.27
67.9531	FD Fan	\$515,000	\$0	\$0	0	\$0	\$515,000	0.34%	\$4.68
	Subtotal Purchase Contracts:	\$26,856,857	\$5,406,199	\$0	0	\$5,591,800	\$37,854,855	24.99%	\$344.14
	•								
	on Contracts: Demolition works	Φ0	\$25,000	\$110,472	2,400	\$370,000	\$505,472	0.33%	\$4.60
71.0100		\$0 \$0	\$25,000 \$0	\$110,472	2,400	\$1,540,000	\$1,540,000	1.02%	\$14.00
	Civil / Structural Construction - Cast in -place Filing Civil / Structural Construction - Super Structures	\$0 \$0	\$90,000	\$1,887,066	30,604	\$1,216,250	\$3,193,316	2.11%	\$29.03
71.0403		\$0	\$375,573	\$1,126,138	22,729	\$128,422	\$1,630,133	1.08%	\$14.82
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$13,651,890	273,592	\$4,641,250	\$18,293,140	12.07%	\$166.30
73.0000	Electrical / Control Construction	\$0	\$1,271,588	\$9,696,279	183,052	\$10,800	\$10,978,667	7.25%	\$99.81
78.0000	Service Contracts & Construction Indirects	\$0	\$3,865,623	\$5,640,018	123,576	\$12,510,837	\$22,016,478	14.53%	\$200.15
	Subtotal Construction Contracts:	\$0	\$5,627,784	\$32,111,863	635,954	\$20,417,559	\$58,157,206	38.39%	\$528.70
	Total Direct Costs	\$26,856,857	\$11,033,982	\$32,111,863	635,954	\$26,009,359	\$96,012,061	63.37%	\$872.84
ndirect Cos	sts:								
99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$6,346,800	154,800	\$9,431,345	\$15,778,145	10.41%	\$143.44
99.1200	EPC Construction Management (Includes G&A)	\$0	\$74,610	\$6,212,458	135,877	\$8,366,618	\$14,653,687	9.67%	\$133.22
99.1500	Project Insurance	\$0 \$0	\$0 \$0	\$0 *0	0	\$1,556,007	\$1,556,007	1.03%	\$14.15
99.1600	Performance Bond	\$0 \$0	\$0 \$56.272	\$0 \$0	0	\$666,860	\$666,860 \$56,272	0.44%	\$6.06 \$0.51
99.1900 99.2500		\$0 \$0	\$56,273 \$0	\$0 \$0	0	\$0 \$12,872,303	\$56,273 \$12,872,303	0.04% 8.50%	\$0.51 \$117.02
99.2600		\$0 \$0	\$0 \$0	\$0 \$0	0	\$9,912,000	\$9,912,000	6.54%	\$90.11
	Total Indirect Costs	\$0	\$130,884	\$12,559,258	290,677	\$42,805,134	\$55,495,276	36.63%	\$504.50
	Total Overnight (April 2011) EPC Capital Costs:	\$26,856,857	\$11,164,866	\$44,671,122	926,630	\$68,814,493	\$151,507,337	100.00%	\$1,377.34
		\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

Total Overnight (April 2011) EPC Capital Costs:

B&V PROJECT #: PROJECT ESTIMATOR: PROJECT MANAGER: Tim Hillman PURPOSE OF ESTIMATE: Budgetary ESTIMATE DATE: April 21, 2011

CURRENCY:
BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

LOCATION: PLANT TYPE: Mercer County, KY PC Fired Boiler LG&E - KU CLIENT: PARTNER: US Dollars

\$151,507,337

				PROJECT - 7	TOTAL COSTS				
Contract		Engr Equip	Commodities					% OF	\$ PER
Number	Description							TOTAL C.V.	KW
		Material \$	Material \$	Labor \$	Manhours	Other	TOTAL \$		110
ESTIMAT	E SUMMARY								

TOTAL C.V. KW	TOTAL \$	Other	Manhours	Labor \$	Material \$	84-4	Description	umber
						Material \$		
							ESUMMARY	TIMAT
							ontracts:	rchase C
	\$5,637,975	\$271,800	0	\$0	\$20,385	\$5,345,790	Civil / Structural	61.0000
	\$7,745,981	\$4,750,000	0	\$0	\$1,102,450	\$1,893,531	Mechanical	62.0000
	\$6,038,515	\$0	0	\$0	\$4,077,839	\$1,960,676	Electrical	63.0000
	\$1,771,525	\$570,000	0	\$0	\$205,525	\$996,000	Control	64.0000
11.00% \$151.	\$16,660,860	\$0	0	\$0	\$0	\$16,660,860	Chemical	65.0000
24.99% \$344.	\$37,854,855	\$5,591,800	0	\$0	\$5,406,199	\$26,856,857	Subtotal Purchase Contracts:	
							on Contracts:	nstructio
4.53% \$62.	\$6,868,921	\$3,254,672	55,734	\$3,123,676	\$490,573	\$0	Civil / Structural Construction	71.0000
· ·	\$18,293,140	\$4,641,250	273,592	\$13,651,890	\$0	\$0	Mechanical / Chemical Construction	72.0000
	\$10,978,667	\$10,800	183,052	\$9,696,279	\$1,271,588	\$0	Electrical / Control Construction	73.0000
	\$22,016,478	\$12,510,837	123,576	\$5,640,018	\$3,865,623	\$0	Service Contracts & Construction Indirects	78.0000
38.39% \$528.	\$58,157,206	\$20,417,559	635,954	\$32,111,863	\$5,627,784	\$0	Subtotal Construction Contracts:	
63.37% \$872.	\$96,012,061	\$26,009,359	635,954	\$32,111,863	\$11,033,982	\$26,856,857	Total Direct Costs	
							sts:	lirect Co:
	\$15,778,145	\$9,431,345	154,800	\$6,346,800	\$0	\$0	Engineering Costs (With G&A)	99.1100
•	. , ,				. ,			
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		. ,			* -			
	. ,	* -			. ,			
6.54% \$90.	\$9,912,000	\$9,912,000	0	\$0	\$0	\$0	EPG Profit	99.2600
36.63% \$504.	\$55,495,276	\$42,805,134	290,677	\$12,559,258	\$130,884	\$0	Total Indirect Costs	
,	\$14,653,687 \$1,556,007 \$666,860 \$56,273 \$12,872,303 \$9,912,000	\$8,366,618 \$1,556,007 \$666,860 \$0 \$12,872,303 \$9,912,000	135,877 0 0 0 0 0	\$6,212,458 \$0 \$0 \$0 \$0 \$0 \$0	\$74,610 \$0 \$0 \$56,273 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	Engineering Costs (With G&A) Construction Management (With G&A) Project Insurance Performance Bond Sales Tax 6% on indirect materials and services Project Contingency EPC Profit	

\$11,164,866

\$44,671,122

B&V PROJECT #: PROJECT ESTIMATOR: PROJECT MANAGER: Tim Hillman PURPOSE OF ESTIMATE: Budgetary April 21, 2011 ESTIMATE DATE:

CURRENCY:
BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

LOCATION: PLANT TYPE: Mercer County, KY PC Fired Boiler LG&E - KU CLIENT: N/A US Dollars PARTNER:

-				BP - 15 -					
Co		En and Entertie	Comment	PROJECT -	TOTAL COSTS	T		8, 05	¢ 055
Contract	Bernstaten	Engr Equip	Commodities					% OF	\$ PER
Number	Description	Material \$	Material \$	Labor \$	Manhours	Other	TOTAL \$	TOTAL C.V.	KW 110
		iviateriai ş	Materiai \$	Labor \$	Maimours	Other	TOTAL \$	<u> </u>	110
Civil / Struc	ctural Purchase Contracts:								
61.0200	Buildings - Insulated panels	\$0	\$0	\$0	0	\$271,800	\$271,800	0.18%	\$2.47
61.0300	Grating	\$0	\$10,440	\$0	0	\$0	\$10,440	0.01%	\$0.09
61.3801	Ductwork and Breeching	\$4,002,990	\$0	\$0	0	\$0	\$4,002,990	2.64%	\$36.39
61.4001	Structural Steel	\$1,342,800	\$0	\$0	0	\$0	\$1,342,800	0.89%	\$12.21
61.4015	Handrail and stairs	\$0	\$9,945	\$0	0	\$0	\$9,945	0.01%	\$0.09
61.4052	Sheet Piling and Coffer Dam	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
	Subtotal - Civil / Structural Purchase Contracts:	\$5,345,790	\$20,385	\$0	0	\$271,800	\$5,637,975	3.72%	\$51.25
Mechanica	Purchase Contracts:	\$0	\$0	\$0	0	\$0			
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0		\$50,000	\$50,000	0.03%	\$0.45
62.2201	Large Bore Pipe	\$437,150	\$0	\$0	0	\$0	\$437,150	0.29%	\$3.97
62.2418	Primary Flow elements	\$400,000	\$0	\$0	0	\$0	\$400,000	0.26%	\$3.64
66.1000	Piping & Tubing	\$291,381	\$0	\$0	0	\$0	\$291,381	0.19%	\$2.65
66.2070	Pipe Supports	\$0	\$579,250	\$0	0	\$0	\$579,250	0.38%	\$5.27
66.3000	Valves and Accessories	\$0	\$523,200	\$0	0	\$0	\$523,200	0.35%	\$4.76
67.0414	Fly Ash Handling system	\$0	\$0	\$0	0	\$4,700,000	\$4,700,000	3.10%	\$42.73
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.17%	\$2.27
67.9531	FD Fan	\$515,000	\$0	\$0	0	\$0	\$515,000	0.34%	\$4.68
	Subtotal - Mechanical Purchase Contracts:	\$1,893,531	\$1,102,450	\$0	\$0	\$4,750,000	\$7,745,981	5.11%	\$70.42
Electrical F	Purchase Contracts:	\$0	\$0	\$0	0	\$0			
63.0000	Electrical Equipment & Materials	\$0	\$2,800	\$0		\$0	\$2,800	0.00%	\$0.03
63.0500	Lightning Protection Equipment and Materials	\$0	\$7,220	\$0	0	\$0	\$7,220	0.00%	\$0.07
63.0601	Plant Communication System	\$0	\$90,496	\$0	0	\$0	\$90,496	0.06%	\$0.82
63.0801	Cable - 8-15KV Power	\$0	\$214,605	\$0	0	\$0	\$214,605	0.14%	\$1.95
63.0804	Cable - 300-600V Instrument & T/C	\$0	\$37,125	\$0	0	\$0	\$37,125	0.02%	\$0.34
63.0802	Cable and Raceway	\$0	\$2,019,665	\$0	0	\$0	\$2,019,665	1.33%	\$18.36
63.1201	Iso-Phase Bus Duct	\$257,500	\$0	\$0	0	\$0	\$257,500	0.17%	\$2.34
63.1202	Cable Bus	\$0	\$634,360	\$0	0	\$0	\$634,360	0.42%	\$5.77
63.2000	Metering & Relaying	\$60,000	\$0	\$0	0	\$0	\$60,000	0.04%	\$0.55
63.2802	Batteries - DC Equipment	\$0	\$221,375	\$0	0	\$0	\$221,375	0.15%	\$2.01
63.2805	PanelBoards	\$0	\$60,000	\$0	0	\$0	\$60,000	0.04%	\$0.55
63.3603	Switchgear & MCCs	\$1,070,300	\$0	\$0	0	\$0	\$1,070,300	0.71%	\$9.73
63.3802	SUS Transformers	\$294,376	\$0	\$0	0	\$0	\$294,376	0.19%	\$2.68
63.3803	Aux Transformer	\$278,500	\$0	\$0	0	\$0	\$278,500	0.18%	\$2.53
63.5000	Junction Boxes	\$0	\$20,000	\$0	0	\$0	\$20,000	0.01%	\$0.18
63.5010	Grounding Materials and Equipment	\$0	\$117,993	\$0	0	\$0	\$117,993	0.08%	\$1.07
63.5021	Raceway - Cable Tray	\$0 \$0	\$375,000	\$0 \$0	0	\$0 \$0	\$375,000	0.25%	\$3.41
63.5022	Raceway - General	\$0	\$277,200	\$0	0	\$0	\$277,200	0.18%	\$2.52
	Subtotal - Electrical Purchase Contracts:	\$1,960,676	\$4,077,839	\$0	0	\$0	\$6,038,515	3.99%	\$54.90
Control Pu	rchase Contracts:	\$0	\$0	\$0	0	\$0			
64.0202	DCS / PLC mods	\$696,000	\$0	\$0	0	\$0	\$696,000	0.46%	\$6.33
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.38%	\$5.18
64.1003	Instrumentation	\$300,000	\$100,000	\$0	0	\$0	\$400,000	0.26%	\$3.64
64.1602	Instr. Racks and Enclosures	\$0	\$9,000	\$0	0	\$0	\$9,000	0.01%	\$0.08
64.5010	Tubing	\$0	\$96,525	\$0	0	\$0	\$96,525	0.06%	\$0.88
	Subtotal - Control Purchase Contracts:	\$996,000	\$205,525	\$0	0	\$570,000	\$1,771,525	1.17%	\$16.10
Chemical P	Purchase Contracts:	\$0	\$0	\$0	0	\$0			
65.3120	Fabric Filter	\$4,400,000	\$0	\$0	0	\$0	\$4,400,000	2.90%	\$40.00
65.3210	Sorbent Injection	\$750,000	\$0	\$0	0	\$0	\$750,000	0.50%	\$6.82
65.3310	Selective Catalytic Reduction system	\$11,010,860	\$0	\$0	0	\$0	\$11,010,860	7.27%	\$100.10
65.3500	H -PAC Mecury Control	\$500,000	\$0	\$0	0	\$0	\$500,000	0.33%	\$4.55
	Subtotal - Chemical Purchase Contracts:	\$16,660,860	\$0	\$0	0	\$0	\$16,660,860	11.00%	\$151.46
	Subtotal Purchase Contracts:	\$26,856,857	\$5,406,199	\$0	0	\$5,591,800	\$37,854,855	24.99%	\$344.14

B&V PROJECT #: PROJECT ESTIMATOR: PROJECT MANAGER: PURPOSE OF ESTIMATE: ESTIMATE DATE:

Tim Hillman Budgetary April 21, 2011 LOCATION: PLANT TYPE: CLIENT: PARTNER:

Mercer County, KY PC Fired Boiler LG&E - KU N/A US Dollars

CURRENCY: BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

				PROJECT - T	OTAL COSTS				
Contract Number	Description	Engr Equip	Commodities					% OF TOTAL C.V.	\$ PER KW
Number	Description	Material \$	Material \$	Labor \$	Manhours	Other	TOTAL \$	TOTAL C.V.	110
Civil / Struc	ctural Construction Contracts:	\$0	\$0	\$0	0	\$0			
71.0100	Demolition Works	\$0	\$25,000	\$110,472	2,400	\$370,000	\$505,472	0.33%	\$4.60
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,540,000	\$1,540,000	1.02%	\$14.00
71.0402	General Construction - Substructures	\$0	\$375,573	\$1,126,138	22,729	\$128,422	\$1,630,133	1.08%	\$14.82
71.0403	General Construction - Superstructures	\$0	\$90,000	\$1,887,066	30,604	\$1,216,250	\$3,193,316	2.11%	\$29.03
	Subtotal - Civil / Structural Construction Contracts:	\$0	\$490,573	\$3,123,676	55,734	\$3,254,672	\$6,868,921	4.53%	\$62.44
Mechanica	Construction Contracts:	\$0	\$0	\$0	0	\$0			
72.0401	Plant Piping Installation	\$0	\$0	\$4,468,527	83,618	\$0	\$4,468,527	2.95%	\$40.62
72.0403	Duct and Reactor Insulation	\$0	\$0	\$0	0	\$4,006,000	\$4,006,000	2.64%	\$36.42
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$635,250	\$635,250	0.42%	\$5.78
77.0000	Mechanical Construction	\$0	\$0	\$9,183,363	189,974	\$0	\$9,183,363	6.06%	\$83.49
	Subtotal - Mechanical Construction Contracts:	\$0	\$0	\$13,651,890	\$273,592	\$4,641,250	\$18,293,140	12.07%	\$166.30
Electrical /	Control Construction Contracts:	\$0	\$0	\$0	0	\$0			
73.0201	Electrical Equipment Erection	\$0	\$1,271,588	\$8,738,728	164,975	\$10,800	\$10,021,115	6.61%	\$91.10
74.0201	Control & Instrumentation Installation	\$0	\$0	\$957,552	18,077	\$0	\$957,552	0.63%	\$8.71
	Subtotal - Electrical / Control Construction Contracts:	\$0	\$1,271,588	\$9,696,279	183,052	\$10,800	\$10,978,667	7.25%	\$99.81
Construction	on Indirects & Service Contracts:	\$0	\$0	\$0	0	\$0			
78.0000	Service Contracts & Construction Indirects	\$0	\$3,865,623	\$5,640,018	123,576	\$12,139,837	\$21,645,478	14.29%	\$196.78
78.4000	Warranty	\$0	\$0	\$0	0	\$371,000	\$371,000	0.24%	\$3.37
	Subtotal - Construction Indirects & Service Contracts:	\$0	\$3,865,623	\$5,640,018	123,576	\$12,510,837	\$22,016,478	14.53%	\$200.15
	Subtotal - Construction Costs:	\$0	\$5,627,784	\$32,111,863	635,954	\$20,417,559	\$58,157,206	38.39%	\$528.70
	Subtotal - Direct Costs:	\$26,856,857	\$11,033,982	\$32,111,863	635,954	\$26,009,359	\$96,012,061	63.37%	\$872.84
Indirect Co	sts:	\$0	\$0	\$0	0	\$0			
99.1100	Engineering Costs (Includes G&A)	\$0 \$0	\$0 \$0	\$6,346,800	154,800	\$9,431,345	\$15,778,145	10.41%	\$143.44
99.1200	EPC Construction Management (Includes G&A)	\$0	\$74,610	\$6,212,458	135,877	\$8,366,618	\$14,653,687	9.67%	\$133.22
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,556,007	\$1,556,007	1.03%	\$14.15
99.1600	Performance Bond	\$0	\$0	\$0	0	\$666,860	\$666,860	0.44%	\$6.06
99.1900	Sales Tax 6% on indirect materials and services	\$0	\$56,273	\$0	0	\$0	\$56,273	0.04%	\$0.51
99.2500	Project Contingency	\$0	\$0	\$0	0	\$12,872,303	\$12,872,303	8.50%	\$117.02
99.2600	EPC Profit	\$0	\$0	\$0	0	\$9,912,000	\$9,912,000	6.54%	\$90.11
	Subtotal - Indirect Costs:	\$0	\$130,884	\$12,559,258	290,677	\$42,805,134	\$55,495,276	36.63%	\$504.50
	Total Overnight (April 2011) EPC Capital Costs:	\$26,856,857	\$11,164,866	\$44,671,122	926,630	\$68,814,493	\$151,507,337	100.00%	\$1,377.34