

LG&E - KU- E.W. Brown Unit 1 PJFF without SCR Rev. B

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

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

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

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$558,000	\$0	\$0	0	\$153,000	\$711,000	0.79%	\$6.46
61.3801	Ductwork and breaching	\$1,153,910	\$0	\$0	0	\$0	\$1,153,910	1.28%	\$10.49
62.0000	Mechanical - Balance of Plant (BOP)	\$235,600	\$0	\$0	0	\$50,000	\$285,600	0.32%	\$2.60
63.0000	Electrical - BOP, Equipment, Raceway	\$317,500	\$2,797,042	\$0	0	\$0	\$3,114,542	3.46%	\$28.31
63.3603	Switchgear and MCCs	\$1,021,000	\$0	\$0	0	\$0	\$1,021,000	1.13%	\$9.28
63.3802	SUS Transformers	\$294,376	\$0	\$0	0	\$0	\$294,376	0.33%	\$2.68
63.3803	Aux Transformer	\$278,500	\$0	\$0	0	\$0	\$278,500	0.31%	\$2.53
64.0000	Control - DCS, Instrumentation	\$876,000	\$64,350	\$0	0	\$0	\$940,350	1.04%	\$8.55
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.63%	\$5.18
65.3120	Fabric filter	\$4,400,000	\$0	\$0	0	\$0	\$4,400,000	4.89%	\$40.00
65.3210	Sorbent Injection	\$750,000	\$0	\$0	0	\$0	\$750,000	0.83%	\$6.82
65.3500	H-PAC Mercury Control	\$500,000	\$0	\$0	0	\$0	\$500,000	0.56%	\$4.55
66.1000	Piping & Tubing	\$166,918	\$0	\$0	0	\$0	\$166,918	0.19%	\$1.52
66.2070	Pipe Supports	\$0	\$434,438	\$0	0	\$0	\$434,438	0.48%	\$3.95
66.3000	Valves and Accessories	\$0	\$23,200	\$0	0	\$0	\$23,200	0.03%	\$0.21
67.0414	Fly Ash Handling System	\$0	\$0	\$0	0	\$4,600,000	\$4,600,000	5.11%	\$41.82
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.28%	\$2.27
Subtotal Purchase Contracts:		\$10,801,804	\$3,319,030	\$0	0	\$5,373,000	\$19,493,834	21.65%	\$177.22

Construction Contracts:

71.0100	Demolition works	\$0	\$25,000	\$110,472	2,400	\$270,000	\$405,472	0.45%	\$3.69
71.0401	Civil / Structural Construction - Cast in -place Piling	\$0	\$0	\$0	0	\$1,456,000	\$1,456,000	1.62%	\$13.24
71.0402	Civil / Structural Construction - Super Structures	\$0	\$7,500	\$766,952	12,438	\$946,250	\$1,720,702	1.91%	\$15.64
71.0403	Civil / Structural Construction - Sub-Structures	\$0	\$334,723	\$1,014,443	20,519	\$128,422	\$1,477,587	1.64%	\$13.43
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$8,761,994	175,719	\$2,641,250	\$11,403,244	12.67%	\$103.67
73.0000	Electrical / Control Construction	\$0	\$809,600	\$5,564,445	105,049	\$10,800	\$6,384,845	7.09%	\$58.04
78.0000	Service Contracts & Construction Indirects	\$0	\$3,259,510	\$3,706,042	84,469	\$7,695,506	\$14,661,058	16.28%	\$133.28
Subtotal Construction Contracts:		\$0	\$4,436,332	\$19,924,348	400,594	\$13,148,228	\$37,508,909	41.66%	\$340.99

Total Direct Costs

\$10,801,804	\$7,755,362	\$19,924,348	400,594	\$18,521,228	\$57,002,743	63.32%	\$518.21
---------------------	--------------------	---------------------	----------------	---------------------	---------------------	---------------	-----------------

Indirect Costs:

99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$2,221,380	54,180	\$3,300,971	\$5,522,351	6.13%	\$50.20
99.1200	EPC Construction Management (Includes G&A)	\$0	\$66,285	\$5,368,245	116,855	\$7,189,983	\$12,624,513	14.02%	\$114.77
99.1500	Project Insurance	\$0	\$0	\$0	0	\$889,175	\$889,175	0.99%	\$8.08
99.1600	Performance Bond	\$0	\$0	\$0	0	\$381,075	\$381,075	0.42%	\$3.46
99.1900	Sales Tax 6% on indirect materials and services	\$0	\$70,509	\$0	0	\$0	\$70,509	0.08%	\$0.64
99.2500	Project Contingency 10%	\$0	\$0	\$0	0	\$7,649,037	\$7,649,037	8.50%	\$69.54
99.2600	EPC Profit	\$0	\$0	\$0	0	\$5,890,000	\$5,890,000	6.54%	\$53.55
Total Indirect Costs		\$0	\$136,793	\$7,589,625	171,035	\$25,300,241	\$33,026,660	36.68%	\$300.24

Total Overnight (April 2011) EPC Capital Costs:

\$10,801,804	\$7,892,156	\$27,513,973	571,629	\$43,821,469	\$90,029,403	100.00%	\$818.45
---------------------	--------------------	---------------------	----------------	---------------------	---------------------	----------------	-----------------

\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
-----	-----	-----	---	-----	-----	-------	--------

LG&E - KU- E.W. Brown Unit 1 PJFF without SCR Rev. B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April 21, 2011

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

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 110	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
ESTIMATE SUMMARY									
Purchase Contracts:									
61.0000	Civil / Structural	\$1,711,910	\$0	\$0	0	\$153,000	\$1,864,910	2.07%	\$16.95
62.0000	Mechanical	\$652,518	\$457,638	\$0	0	\$4,650,000	\$5,760,156	6.40%	\$52.37
63.0000	Electrical	\$1,911,376	\$2,797,042	\$0	0	\$0	\$4,708,418	5.23%	\$42.80
64.0000	Control	\$876,000	\$64,350	\$0	0	\$570,000	\$1,510,350	1.68%	\$13.73
65.0000	Chemical	\$5,650,000	\$0	\$0	0	\$0	\$5,650,000	6.28%	\$51.36
Subtotal Purchase Contracts:		\$10,801,804	\$3,319,030	\$0	0	\$5,373,000	\$19,493,834	21.65%	\$177.22
Construction Contracts:									
71.0000	Civil / Structural Construction	\$0	\$367,223	\$1,891,867	35,357	\$2,800,672	\$5,059,761	5.62%	\$46.00
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$8,761,994	175,719	\$2,641,250	\$11,403,244	12.67%	\$103.67
73.0000	Electrical / Control Construction	\$0	\$809,600	\$5,564,445	105,049	\$10,800	\$6,384,845	7.09%	\$58.04
78.0000	Service Contracts & Construction Indirects	\$0	\$3,259,510	\$3,706,042	84,469	\$7,695,506	\$14,661,058	16.28%	\$133.28
Subtotal Construction Contracts:		\$0	\$4,436,332	\$19,924,348	400,594	\$13,148,228	\$37,508,909	41.66%	\$340.99
Total Direct Costs		\$10,801,804	\$7,755,362	\$19,924,348	400,594	\$18,521,228	\$57,002,743	63.32%	\$518.21
Indirect Costs:									
99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,221,380	54,180	\$3,300,971	\$5,522,351	6.13%	\$50.20
99.1200	Construction Management (With G&A)	\$0	\$66,285	\$5,368,245	116,855	\$7,189,983	\$12,624,513	14.02%	\$114.77
99.1500	Project Insurance	\$0	\$0	\$0	0	\$889,175	\$889,175	0.99%	\$8.08
99.1600	Performance Bond	\$0	\$0	\$0	0	\$381,075	\$381,075	0.42%	\$3.46
99.1900	Sales Tax 6% on indirect materials and services	\$0	\$70,509	\$0	0	\$0	\$70,509	0.08%	\$0.64
99.2500	Project Contingency	\$0	\$0	\$0	0	\$7,649,037	\$7,649,037	8.50%	\$69.54
99.2600	EPC Profit	\$0	\$0	\$0	0	\$5,890,000	\$5,890,000	6.54%	\$53.55
Total Indirect Costs		\$0	\$136,793	\$7,589,625	171,035	\$25,300,241	\$33,026,660	36.68%	\$300.24
Total Overnight (April 2011) EPC Capital Costs:		\$10,801,804	\$7,892,156	\$27,513,973	571,629	\$43,821,469	\$90,029,403	100.00%	\$818.45

LG&E - KU- E.W. Brown Unit 1 PJFF without SCR Rev. B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April 21, 2011

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

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					TOTAL \$	% OF TOTAL C.V.	\$ PER KW 110
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			
Civil / Structural Purchase Contracts:									
61.3801	Ductwork and Breeching	\$1,153,910	\$0	\$0	0	\$0	\$1,153,910	1.28%	\$10.49
61.4001	Structural Steel	\$558,000	\$0	\$0	0	\$0	\$558,000	0.62%	\$5.07
Subtotal - Civil / Structural Purchase Contracts:		\$1,711,910	\$0	\$0	0	\$153,000	\$1,864,910	2.07%	\$16.95
Mechanical Purchase Contracts:									
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0	0	\$0	\$0	0.06%	\$0.45
62.2201	Large Bore Pipe	\$0	\$0	\$0	0	\$50,000	\$50,000	0.26%	\$2.14
66.1000	Piping & Tubing	\$235,600	\$0	\$0	0	\$0	\$235,600	0.19%	\$1.52
66.2070	Pipe Supports	\$166,918	\$0	\$0	0	\$0	\$166,918	0.48%	\$3.95
66.3000	Valves and Accessories	\$0	\$434,438	\$0	0	\$0	\$434,438	0.03%	\$0.21
67.0414	Fly Ash Handling system	\$0	\$23,200	\$0	0	\$0	\$23,200	5.11%	\$41.82
67.9300	Air Compressors, Dryers, & Air Receivers	\$0	\$0	\$0	0	\$4,600,000	\$4,600,000	0.28%	\$2.27
Subtotal - Mechanical Purchase Contracts:		\$652,518	\$457,638	\$0	\$0	\$4,650,000	\$5,760,156	6.40%	\$52.37
Electrical Purchase Contracts:									
63.0000	Electrical Equipment & Materials	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.02
63.0500	Lightning Protection Equipment and Materials	\$0	\$2,000	\$0	0	\$0	\$2,000	0.00%	\$0.02
63.0601	Plant Communication System	\$0	\$2,220	\$0	0	\$0	\$2,220	0.06%	\$0.48
63.0801	Cable - 8-15KV Power	\$0	\$52,996	\$0	0	\$0	\$52,996	0.24%	\$1.95
63.0804	Cable - 300-600V Instrument & T/C	\$0	\$214,605	\$0	0	\$0	\$214,605	0.03%	\$0.23
63.0802	Cable and Raceway	\$0	\$24,750	\$0	0	\$0	\$24,750	1.44%	\$11.76
63.1201	Iso-Phase Bus Duct	\$0	\$1,293,943	\$0	0	\$0	\$1,293,943	0.29%	\$2.34
63.1202	Cable Bus	\$257,500	\$0	\$0	0	\$0	\$257,500	0.70%	\$5.77
63.2000	Metering & Relaying	\$0	\$634,360	\$0	0	\$0	\$634,360	0.07%	\$0.55
63.2802	Batteries - DC Equipment	\$60,000	\$0	\$0	0	\$0	\$60,000	0.25%	\$2.01
63.2805	PanelBoards	\$0	\$221,375	\$0	0	\$0	\$221,375	0.07%	\$0.55
63.3603	Switchgear & MCCs	\$0	\$60,000	\$0	0	\$0	\$60,000	1.13%	\$9.28
63.3802	SUS Transformers	\$1,021,000	\$0	\$0	0	\$0	\$1,021,000	0.33%	\$2.68
63.3803	Aux Transformer	\$294,376	\$0	\$0	0	\$0	\$294,376	0.31%	\$2.53
63.5022	Raceway - General	\$278,500	\$0	\$0	0	\$0	\$278,500	0.21%	\$1.68
Subtotal - Electrical Purchase Contracts:		\$1,911,376	\$2,797,042	\$0	0	\$0	\$4,708,418	5.23%	\$42.80
Control Purchase Contracts:									
64.0202	DCS / PLC mods	\$0	\$0	\$0	0	\$0	\$0	0.64%	\$5.24
64.0407	On-line Performance Monitoring - Neural Network	\$576,000	\$0	\$0	0	\$0	\$576,000	0.63%	\$5.18
64.1003	Instrumentation	\$0	\$0	\$0	0	\$570,000	\$570,000	0.33%	\$2.73
64.5010	Tubing	\$300,000	\$0	\$0	0	\$0	\$300,000	0.07%	\$0.59
Subtotal - Control Purchase Contracts:		\$876,000	\$64,350	\$0	0	\$570,000	\$1,510,350	1.68%	\$13.73
Chemical Purchase Contracts:									
65.3120	Fabric Filter	\$0	\$0	\$0	0	\$0	\$0	4.89%	\$40.00
65.3210	Sorbent Injection	\$4,400,000	\$0	\$0	0	\$0	\$4,400,000	0.83%	\$6.82
65.3500	H -PAC Mecury Control	\$750,000	\$0	\$0	0	\$0	\$750,000	0.56%	\$4.55
Subtotal - Chemical Purchase Contracts:		\$5,650,000	\$0	\$0	0	\$0	\$5,650,000	6.28%	\$51.36
Subtotal Purchase Contracts:		\$10,801,804	\$3,319,030	\$0	0	\$5,373,000	\$19,493,834	21.65%	\$177.22

LG&E - KU- E.W. Brown Unit 1 PJFF without SCR Rev. B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April 21, 2011

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

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 110	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:		\$0	\$0	\$0	0	\$0			
71.0100	Demolition Works	\$0	\$25,000	\$110,472	2,400	\$270,000	\$405,472	0.45%	\$3.69
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,456,000	\$1,456,000	1.62%	\$13.24
71.0402	General Construction - Substructures	\$0	\$334,723	\$1,014,443	20,519	\$128,422	\$1,477,587	1.64%	\$13.43
71.0403	General Construction - Superstructures	\$0	\$7,500	\$766,952	12,438	\$946,250	\$1,720,702	1.91%	\$15.64
Subtotal - Civil / Structural Construction Contracts:		\$0	\$367,223	\$1,891,867	35,357	\$2,800,672	\$5,059,761	5.62%	\$46.00
Mechanical Construction Contracts:		\$0	\$0	\$0	0	\$0			
72.0401	Plant Piping Installation	\$0	\$0	\$2,805,656	52,501	\$0	\$2,805,656	3.12%	\$25.51
72.0403	Duct and Reactor Insulation	\$0	\$0	\$0	0	\$2,006,000	\$2,006,000	2.23%	\$18.24
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$635,250	\$635,250	0.71%	\$5.78
77.0000	Mechanical Construction	\$0	\$0	\$5,956,339	123,218	\$0	\$5,956,339	6.62%	\$54.15
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$8,761,994	175,719	\$2,641,250	\$11,403,244	12.67%	\$103.67
Electrical / Control Construction Contracts:		\$0	\$0	\$0	0	\$0			
73.0201	Electrical Equipment Erection	\$0	\$809,600	\$4,994,911	94,297	\$10,800	\$5,815,311	6.46%	\$52.87
74.0201	Control & Instrumentation Installation	\$0	\$0	\$569,533	10,752	\$0	\$569,533	0.63%	\$5.18
Subtotal - Electrical / Control Construction Contracts:		\$0	\$809,600	\$5,564,445	105,049	\$10,800	\$6,384,845	7.09%	\$58.04
Construction Indirects & Service Contracts:		\$0	\$0	\$0	0	\$0			
78.0000	Service Contracts & Construction Indirects	\$0	\$3,259,510	\$3,706,042	84,469	\$7,357,706	\$14,323,258	15.91%	\$130.21
78.4000	Warranty	\$0	\$0	\$0	0	\$337,800	\$337,800	0.38%	\$3.07
Subtotal - Construction Indirects & Service Contracts:		\$0	\$3,259,510	\$3,706,042	84,469	\$7,695,506	\$14,661,058	16.28%	\$133.28
Subtotal - Construction Costs:		\$0	\$4,436,332	\$19,924,348	400,594	\$13,148,228	\$37,508,909	41.66%	\$340.99
Subtotal - Direct Costs:		\$10,801,804	\$7,755,362	\$19,924,348	400,594	\$18,521,228	\$57,002,743	63.32%	\$518.21
Indirect Costs:		\$0	\$0	\$0	0	\$0			
99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$2,221,380	54,180	\$3,300,971	\$5,522,351	6.13%	\$50.20
99.1200	EPC Construction Management (Includes G&A)	\$0	\$66,285	\$5,368,245	116,855	\$7,189,983	\$12,624,513	14.02%	\$114.77
99.1500	Project Insurance	\$0	\$0	\$0	0	\$889,175	\$889,175	0.99%	\$8.08
99.1600	Performance Bond	\$0	\$0	\$0	0	\$381,075	\$381,075	0.42%	\$3.46
99.1900	Sales Tax 6% on indirect materials and services	\$0	\$70,509	\$0	0	\$0	\$70,509	0.08%	\$0.64
99.2500	Project Contingency	\$0	\$0	\$0	0	\$7,649,037	\$7,649,037	8.50%	\$69.54
99.2600	EPC Profit	\$0	\$0	\$0	0	\$5,890,000	\$5,890,000	6.54%	\$53.55
Subtotal - Indirect Costs:		\$0	\$136,793	\$7,589,625	171,035	\$25,300,241	\$33,026,660	36.68%	\$300.24
Total Overnight (April 2011) EPC Capital Costs:		\$10,801,804	\$7,892,156	\$27,513,973	571,629	\$43,821,469	\$90,029,403	100.00%	\$818.45