

LG&E - KU- E.W. Brown Unit 3 PJFF Without SCR Rev. A

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 457
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$1,041,600	\$54,320	\$0	0	\$1,130,000	\$2,225,920	2.30%	\$4.87
61.3801	Ductwork and breaching	\$2,228,850	\$0	\$0	0	\$0	\$2,228,850	2.31%	\$4.88
62.0000	Mechanical - Balance of Plant - (BOP)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.05%	\$0.11
63.0000	Electrical - (BOP) Equipment and raceway	\$0	\$552,095	\$0	0	\$0	\$552,095	0.57%	\$1.21
63.1202	Cable Bus	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
63.3603	Switchgear and MCCs	\$1,101,000	\$0	\$0	0	\$0	\$1,101,000	1.14%	\$2.41
63.3802	SUS Transformers	\$379,752	\$0	\$0	0	\$0	\$379,752	0.39%	\$0.83
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.65%	\$1.37
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.59%	\$1.25
65.3120	Fabric Filter	\$16,200,000	\$0	\$0	0	\$0	\$16,200,000	16.75%	\$35.45
65.3500	H-PAC Mercury Control	\$700,000	\$0	\$0	0	\$0	\$700,000	0.72%	\$1.53
66.1000	Piping & Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.33%	\$0.69
66.2070	Pipe Supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.08%	\$0.17
67.0414	Fly Ash Transfer System	\$0	\$0	\$0	0	\$5,000,000	\$5,000,000	5.17%	\$10.94
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.24%	\$0.51
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.26%	\$0.55
Subtotal Purchase Contracts:		\$22,842,220	\$917,665	\$0	0	\$6,750,000	\$30,509,885	31.55%	\$66.76

Construction Contracts:

71.0100	Demolition works	\$0	\$0	\$0	0	\$735,000	\$735,000	0.76%	\$1.61
71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	0	\$1,393,000	\$1,393,000	1.44%	\$3.05
71.0403	Civil / Structural Construction - Super Structures	\$0	\$459,892	\$1,468,298	29,629	\$138,557	\$2,066,747	2.14%	\$4.52
71.0402	Civil / Structural Construction - Sub-Structures	\$7,500	\$0	\$2,000,250	32,440	\$1,362,524	\$3,370,274	3.49%	\$7.37
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$10,222,580	207,824	\$3,219,250	\$13,441,830	13.90%	\$29.41
73.0000	Electrical / Control Construction	\$0	\$182,000	\$1,480,797	27,955	\$3,600	\$1,666,397	1.72%	\$3.65
78.0000	Service Contracts & Construction Indirects	\$0	\$3,056,780	\$3,475,539	79,215	\$2,820,707	\$9,353,026	9.67%	\$20.47
Subtotal Construction Contracts:		\$7,500	\$3,698,672	\$18,647,464	377,064	\$9,672,638	\$32,026,274	33.12%	\$70.08

Total Direct Costs

\$22,849,720	\$4,616,337	\$18,647,464	377,064	\$16,422,638	\$62,536,159	64.67%	\$136.84
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Indirect Costs:

99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	6.32%	\$13.38
99.1200	EPC Construction Management (Includes G&A)	\$0	\$62,162	\$5,034,359	109,587	\$6,742,791	\$11,839,311	12.24%	\$25.91
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,116,846	\$1,116,846	1.16%	\$2.44
99.1600	Performance Bond	\$0	\$0	\$0	0	\$478,648	\$478,648	0.50%	\$1.05
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$66,124	\$0	0	\$0	\$66,124	0.07%	\$0.14
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$8,215,265	\$8,215,265	8.50%	\$17.98
99.2600	EPC Profit	\$0	\$0	\$0	0	\$6,326,000	\$6,326,000	6.54%	\$13.84
Total Indirect Costs		\$0	\$128,285	\$7,494,359	169,587	\$26,535,110	\$34,157,754	28.63%	\$74.74

Total Overnight (April 2011) EPC Capital Costs:

\$22,849,720	\$4,744,622	\$26,141,823	546,650	\$42,957,748	\$96,693,913	100.00%	\$211.58
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

LG&E - KU- E.W. Brown Unit 3 PJFF Without SCR Rev. A

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 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 457	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
ESTIMATE SUMMARY									
Purchase Contracts:									
61.0000	Civil / Structural	\$3,270,450	\$54,320	\$0	0	\$1,130,000	\$4,454,770	4.61%	\$9.75
62.0000	Mechanical	\$565,018	\$311,250	\$0	0	\$5,050,000	\$5,926,268	6.13%	\$12.97
63.0000	Electrical	\$1,480,752	\$552,095	\$0	0	\$0	\$2,032,847	2.10%	\$4.45
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	1.24%	\$2.62
65.0000	Chemical	\$16,900,000	\$0	\$0	0	\$0	\$16,900,000	17.48%	\$36.98
Subtotal Purchase Contracts:		\$22,842,220	\$917,665	\$0	0	\$6,750,000	\$30,509,885	31.55%	\$66.76
Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$735,000	\$735,000	0.76%	\$1.61
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,393,000	\$1,393,000	1.44%	\$3.05
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$459,892	\$1,468,298	29,629	\$138,557	\$2,066,747	2.14%	\$4.52
71.0403	Civil / Structural Construction- Superstructures	\$7,500	\$0	\$2,000,250	32,440	\$1,362,524	\$3,370,274	3.49%	\$7.37
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$10,222,580	207,824	\$3,219,250	\$13,441,830	13.90%	\$29.41
73.0000	Electrical / Control Construction	\$0	\$182,000	\$1,480,797	27,955	\$3,600	\$1,666,397	1.72%	\$3.65
78.0000	Service Contracts & Construction Indirects	\$0	\$3,056,780	\$3,475,539	79,215	\$2,820,707	\$9,353,026	9.67%	\$20.47
Subtotal Construction Contracts:		\$7,500	\$3,698,672	\$18,647,464	377,064	\$9,672,638	\$32,026,274	33.12%	\$70.08
Total Direct Costs		\$22,849,720	\$4,616,337	\$18,647,464	377,064	\$16,422,638	\$62,536,159	64.67%	\$136.84
Indirect Costs:									
99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	6.32%	\$13.38
99.1200	Construction Management (With G&A)	\$0	\$62,162	\$5,034,359	109,587	\$6,742,791	\$11,839,311	12.24%	\$25.91
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,116,846	\$1,116,846	1.16%	\$2.44
99.1600	Performance Bond	\$0	\$0	\$0	0	\$478,648	\$478,648	0.50%	\$1.05
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$66,124	\$0	0	\$0	\$66,124	0.07%	\$0.14
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$8,215,265	\$8,215,265	8.50%	\$17.98
99.2600	EPC profit	\$0	\$0	\$0	0	\$6,326,000	\$6,326,000	6.54%	\$13.84
Total Indirect Costs		\$0	\$128,285	\$7,494,359	169,587	\$26,535,110	\$34,157,754	35.33%	\$74.74
Total Overnight (April 2011) EPC Capital Costs:		\$22,849,720	\$4,744,622	\$26,141,823	546,650	\$42,957,748	\$96,693,913	100.00%	\$211.58

LG&E - KU- E.W. Brown Unit 3 PJFF Without SCR Rev. A

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 457	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Purchase Contracts:									
61.0810	Embeds and Anchor Bolts	\$0	\$54,320	\$0	0	\$0	\$54,320	0.06%	\$0.12
61.3601	Chain Link Fence	\$0	\$0	\$0	0	\$50,000	\$50,000	0.05%	\$0.11
61.3801	Ductwork and Breeching	\$2,228,850	\$0	\$0	0	\$0	\$2,228,850	2.31%	\$4.88
61.4001	Structural Steel	\$1,041,600	\$0	\$0	0	\$0	\$1,041,600	1.08%	\$2.28
Subtotal - Civil / Structural Purchase Contracts:		\$3,270,450	\$54,320	\$0	0	\$1,130,000	\$4,454,770	4.61%	\$9.75
Mechanical Purchase Contracts:									
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0	0	\$0	\$0	0.05%	\$0.11
67.0414	Fly Ash Transfer System	\$0	\$0	\$0	0	\$5,000,000	\$5,000,000	5.17%	\$10.94
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.26%	\$0.55
66.1000	Piping and Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.33%	\$0.69
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.24%	\$0.51
66.2070	Piping supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.08%	\$0.17
Subtotal - Mechanical Purchase Contracts:		\$565,018	\$311,250	\$0	\$0	\$5,050,000	\$5,926,268	6.13%	\$12.97
Electrical Purchase Contracts:									
63.0000	Electrical Equipment & Materials	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
63.0500	Lightning Protection Equipment and Materials	\$0	\$1,000	\$0	0	\$0	\$1,000	0.00%	\$0.00
63.0601	Lightning Protection Equipment and Materials	\$0	\$2,220	\$0	0	\$0	\$2,220	0.00%	\$0.00
63.0601	Plant Communication System	\$0	\$100,000	\$0	0	\$0	\$100,000	0.10%	\$0.22
63.0802	Cable and Raceway	\$0	\$200,000	\$0	0	\$0	\$200,000	0.21%	\$0.44
63.1001	Welding System	\$0	\$7,500	\$0	0	\$0	\$7,500	0.01%	\$0.02
63.2800	UPS System	\$0	\$221,375	\$0	0	\$0	\$221,375	0.23%	\$0.48
63.2805	PanelBoards	\$0	\$20,000	\$0	0	\$0	\$20,000	0.02%	\$0.04
63.3603	Low Voltage Switchgear	\$1,101,000	\$0	\$0	0	\$0	\$1,101,000	1.14%	\$2.41
63.3802	SUS Transformers	\$379,752	\$0	\$0	0	\$0	\$379,752	0.39%	\$0.83
Subtotal - Electrical Purchase Contracts:		\$1,480,752	\$552,095	\$0	0	\$0	\$2,032,847	2.10%	\$4.45
Control Purchase Contracts:									
64.0202	DCS / PLC mods	\$0	\$0	\$0	0	\$0	\$0	0.60%	\$1.26
64.0407	On-line Performance Monitoring - Neural Network	\$576,000	\$0	\$0	0	\$0	\$576,000	0.59%	\$1.25
64.1003	Instrumentation	\$0	\$0	\$0	0	\$570,000	\$570,000	0.59%	\$1.25
64.1003	Instrumentation	\$50,000	\$0	\$0	0	\$0	\$50,000	0.05%	\$0.11
Subtotal - Control Purchase Contracts:		\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	1.24%	\$2.62
Chemical Purchase Contracts:									
65.3210	Sorbent Injection	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3120	Fabric Filter	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3120	Fabric Filter	\$16,200,000	\$0	\$0	0	\$0	\$16,200,000	16.75%	\$35.45
65.3500	H - PAC Injection system	\$700,000	\$0	\$0	0	\$0	\$700,000	0.72%	\$1.53
Subtotal - Chemical Purchase Contracts:		\$16,900,000	\$0	\$0	0	\$0	\$16,900,000	17.48%	\$36.98
Subtotal Purchase Contracts:		\$22,842,220	\$917,665	\$0	0	\$6,750,000	\$30,509,885	31.55%	\$66.76

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Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 457	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$735,000	0.76%	\$1.61
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,393,000	\$1,393,000	1.44%	\$3.05
71.0402	General Construction - Substructures	\$0	\$459,892	\$1,468,298	29,629	\$138,557	\$2,066,747	2.14%	\$4.52
71.0403	General Construction - Superstructures	\$7,500	\$0	\$2,000,250	32,440	\$1,362,524	\$3,370,274	3.49%	\$7.37
Subtotal - Civil / Structural Construction Contracts:		\$7,500	\$459,892	\$3,468,549	62,069	\$3,629,081	\$7,565,022	7.82%	\$16.55
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$0	0	\$0	\$1,847,965	1.91%	\$4.04
72.0403	Piping & Equipment Insulation	\$0	\$0	\$1,847,965	34,580	\$0	\$2,006,000	2.07%	\$4.39
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$1,213,250	\$1,213,250	1.25%	\$2.65
77.0000	Mechanical Construction	\$0	\$0	\$8,374,615	173,244	\$0	\$8,374,615	8.66%	\$18.33
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$10,222,580	\$207,824	\$3,219,250	\$13,441,830	13.90%	\$29.41
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$0	\$0	0	\$0	\$1,460,449	1.51%	\$3.20
74.0201	Control & Instrumentation Installation	\$0	\$182,000	\$1,274,849	24,067	\$3,600	\$205,947	0.21%	\$0.45
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$1,480,797	27,955	\$3,600	\$1,666,397	1.72%	\$3.65
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$0	\$0	0	\$0	\$9,178,626	9.49%	\$20.08
78.4000	Warranty	\$0	\$3,056,780	\$3,475,539	79,215	\$2,646,307	\$174,400	0.18%	\$0.38
Subtotal - Construction Indirects & Service Contracts:		\$0	\$3,056,780	\$3,475,539	79,215	\$2,820,707	\$9,353,026	9.67%	\$20.47
Subtotal - Construction Costs:		\$7,500	\$3,698,672	\$18,647,464	377,064	\$9,672,638	\$32,026,274	33.12%	\$70.08
Subtotal - Direct Costs:		\$22,849,720	\$4,616,337	\$18,647,464	377,064	\$16,422,638	\$62,536,159	64.67%	\$136.84
Indirect Costs:									
99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$0	0	\$0	\$6,115,560	6.32%	\$13.38
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