

LG&E - KU- Mill Creek Unit 3 PJFF Rev. B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: =Spec Summary/D6
 ESTIMATE DATE: March-11

LOCATION: Jefferson 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 423
		Engr Equip	Commodities					
		Material \$	Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$1,172,200	\$102,505	\$0	0	\$984,736	\$2,259,441	1.33%	\$5.34
61.3801	Ductwork and breeching	\$1,982,800	\$0	\$0	0	\$600,000	\$2,582,800	1.52%	\$6.11
62.0000	Mechanical - Balance of Plant - (BOP)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.03%	\$0.12
63.0000	Electrical - (BOP) Equipment and raceway	\$290,000	\$1,062,720	\$0	0	\$0	\$1,352,720	0.80%	\$3.20
63.3002	VFDs, Motors and Couplings	\$2,938,000	\$0	\$0	0	\$0	\$2,938,000	1.73%	\$6.95
63.1202	Cable Bus	\$0	\$3,228,200	\$0	0	\$10,800	\$3,239,000	1.91%	\$7.66
63.3603	Switchgear and MCCs	\$1,509,000	\$0	\$0	0	\$0	\$1,509,000	0.89%	\$3.57
63.3802	SUS Transformers	\$239,752	\$0	\$0	0	\$0	\$239,752	0.14%	\$0.57
63.3803	Aux Transformers	\$562,000	\$0	\$0	0	\$0	\$562,000	0.33%	\$1.33
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.37%	\$1.48
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.34%	\$1.35
65.3210	Sorbent Injection	\$2,000,000	\$0	\$0	0	\$0	\$2,000,000	1.18%	\$4.73
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	8.84%	\$35.46
65.3500	H-PAC Mercury Control	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.59%	\$2.36
66.1000	Piping & Tubing	\$315,018	\$0	\$0	0	\$100,000	\$415,018	0.24%	\$0.98
66.2070	Pipe Supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.05%	\$0.19
67.0414	Fly Ash Transfer System	\$0	\$0	\$0	0	\$5,000,000	\$5,000,000	2.95%	\$11.82
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.14%	\$0.55
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.15%	\$0.59
67.9532	ID Booster Fans	\$1,948,000	\$0	\$0	0	\$0	\$1,948,000	1.15%	\$4.61
Subtotal Purchase Contracts:		\$29,832,770	\$4,704,675	\$0	0	\$7,315,536	\$41,852,981	24.66%	\$98.94

Construction Contracts:

71.0100	Demolition works	\$0	\$0	\$32,838	\$640	\$1,350,000	\$1,382,838	0.81%	\$3.27
71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	\$0	\$1,428,000	\$1,428,000	0.84%	\$3.38
71.0403	Civil / Structural Construction - Super Structures	\$0	\$494,216	\$1,901,835	\$33,594	\$173,027	\$2,569,078	1.51%	\$6.07
71.0402	Civil / Structural Construction - Sub-Structures	\$0	\$0	\$1,892,750	\$27,348	\$2,990,000	\$4,882,750	2.88%	\$11.54
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,752,375	207,479	\$3,241,600	\$15,993,975	9.43%	\$37.81
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,847,200	93,585	\$10,800	\$6,040,000	3.56%	\$14.28
75.3200	Mechanical - Scrubber Refurbishment	\$0	\$0	\$0	0	\$32,944,117	\$32,944,117	19.41%	\$77.88
78.0000	Service Contracts & Construction Indirects	\$0	\$2,944,725	\$3,314,884	71,397	\$10,672,418	\$16,932,027	9.98%	\$40.03
Subtotal Construction Contracts:		\$0	\$3,620,941	\$25,741,881	434,044	\$52,809,962	\$82,172,785	48.42%	\$194.26

Total Direct Costs

\$29,832,770	\$8,325,616	\$25,741,881	434,044	\$60,125,498	\$124,025,766	73.09%	\$293.21
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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	3.60%	\$14.46
99.1200	EPC Construction Management (Includes G&A)	\$0	\$2,097,599	\$4,460,812	99,672	\$4,212,356	\$10,770,767	6.35%	\$25.46
99.1500	Project Insurance	\$0	\$0	\$0	0	\$2,248,969	\$2,248,969	1.33%	\$5.32
99.1600	Performance Bond	\$0	\$0	\$0	0	\$963,844	\$963,844	0.57%	\$2.28
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$47,732	\$0	0	\$0	\$47,732	0.03%	\$0.11
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$14,417,264	\$14,417,264	8.50%	\$34.08
99.2600	EPC Profit	\$0	\$0	\$0	0	\$11,101,000	\$11,101,000	6.54%	\$26.24
Total Indirect Costs		\$0	\$2,145,331	\$6,920,812	159,672	\$36,598,992	\$45,665,135	28.63%	\$107.96

Total Overnight (Mar. 2011) EPC Capital Costs:

\$29,832,770	\$10,470,948	\$32,662,693	593,716	\$96,724,490	\$169,690,901	100.00%	\$401.16
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

Separate Line Item Cost Break Out (Items listed below are included in the above EPC estimate)

1	Demolition	\$1,700,891
2	SCR	\$0
3	Scrubber Refurbishment	\$38,874,058
4	Scrubber Steel Refurbishment	\$1,043,988

LG&E - KU- Mill Creek Unit 3 PJFF Rev. B

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

LOCATION: Jefferson 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 423
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$3,155,000	\$102,505	\$0	0	\$1,584,736	\$4,842,241	2.85%	\$11.45
62.0000	Mechanical	\$2,513,018	\$311,250	\$0	0	\$5,150,000	\$7,974,268	4.70%	\$18.85
63.0000	Electrical	\$5,538,752	\$4,290,920	\$0	0	\$10,800	\$9,840,472	5.80%	\$23.26
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.70%	\$2.83
65.0000	Chemical	\$18,000,000	\$0	\$0	0	\$0	\$18,000,000	10.61%	\$42.55
Subtotal Purchase Contracts:		\$29,832,770	\$4,704,675	\$0	0	\$7,315,536	\$41,852,981	24.66%	\$98.94

Construction Contracts:

71.0100	Demolition Works	\$0	\$0	\$32,838	640	\$1,350,000	\$1,382,838	0.81%	\$3.27
71.0203	Site Finishing	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,428,000	\$1,428,000	0.84%	\$3.38
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$494,216	\$1,901,835	33,594	\$173,027	\$2,569,078	1.51%	\$6.07
71.0403	Civil / Structural Construction- Superstructures	\$0	\$0	\$1,892,750	27,348	\$2,990,000	\$4,882,750	2.88%	\$11.54
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,752,375	207,479	\$36,185,717	\$48,938,092	28.84%	\$115.69
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,847,200	93,585	\$10,800	\$6,040,000	3.56%	\$14.28
78.0000	Service Contracts & Construction Indirects	\$0	\$2,944,725	\$3,314,884	71,397	\$10,672,418	\$16,932,027	9.98%	\$40.03
Subtotal Construction Contracts:		\$0	\$3,620,941	\$25,741,881	434,044	\$52,809,962	\$82,172,785	48.42%	\$194.26

Total Direct Costs

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Indirect Costs:

99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	3.60%	\$14.46
99.1200	Construction Management (With G&A)	\$0	\$2,097,599	\$4,460,812	99,672	\$4,212,356	\$10,770,767	6.35%	\$25.46
99.1500	Project Insurance	\$0	\$0	\$0	0	\$2,248,969	\$2,248,969	1.33%	\$5.32
99.1600	Performance Bond	\$0	\$0	\$0	0	\$963,844	\$963,844	0.57%	\$2.28
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$47,732	\$0	0	\$0	\$47,732	0.03%	\$0.11
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$14,417,264	\$14,417,264	8.50%	\$34.08
99.2600	EPC profit	\$0	\$0	\$0	0	\$11,101,000	\$11,101,000	6.54%	\$26.24
Total Indirect Costs		\$0	\$2,145,331	\$6,920,812	159,672	\$36,598,992	\$45,665,135	26.91%	\$107.96

Total Overnight (Mar. 2011) EPC Capital Costs:

\$29,832,770	\$10,470,948	\$32,662,693	593,716	\$96,724,490	\$169,690,901	100.00%	\$401.16
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LG&E - KU- Mill Creek Unit 3 PJFF Rev. B

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

LOCATION: Jefferson 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 423	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Purchase Contracts:									
61.0300	Grating	\$0	\$3,450	\$0	0	\$0	\$3,450	0.00%	\$0.01
61.0810	Embeds and Anchor Bolts	\$0	\$55,755	\$0	0	\$0	\$55,755	0.03%	\$0.13
61.3601	Chain Link Fence	\$0	\$10,000	\$0	0	\$100,000	\$110,000	0.06%	\$0.26
61.3801	Ductwork and Breeching	\$1,982,800	\$0	\$0	0	\$600,000	\$2,582,800	1.52%	\$6.11
61.4001	Structural Steel	\$1,172,200	\$0	\$0	0	\$884,736	\$2,056,936	1.21%	\$4.86
61.4015	Handrail and stairs	\$0	\$33,300	\$0	0	\$0	\$33,300	0.02%	\$0.08
Subtotal - Civil / Structural Purchase Contracts:		\$3,155,000	\$102,505	\$0	0	\$1,584,736	\$4,842,241	2.85%	\$11.45
Mechanical Purchase Contracts:									
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.03%	\$0.12
67.0414	Fly Ash Tranfer System	\$0	\$0	\$0	0	\$5,000,000	\$5,000,000	2.95%	\$11.82
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.15%	\$0.59
67.9532	ID Booster Fans	\$1,948,000	\$0	\$0	0	\$0	\$1,948,000	1.15%	\$4.61
66.1000	Piping and Tubing	\$315,018	\$0	\$0	0	\$100,000	\$415,018	0.24%	\$0.98
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.14%	\$0.55
66.2070	Piping supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.05%	\$0.19
Subtotal - Mechanical Purchase Contracts:		\$2,513,018	\$311,250	\$0	\$0	\$5,150,000	\$7,974,268	4.70%	\$18.85
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	\$1,400	\$0	0	\$0	\$1,400	0.00%	\$0.01
63.0601	Plant Communication System	\$0	\$2,220	\$0	0	\$0	\$2,220	0.00%	\$0.01
63.0601	Plant Communication System	\$0	\$300,000	\$0	0	\$0	\$300,000	0.18%	\$0.71
63.0802	Cable and Raceway	\$0	\$500,000	\$0	0	\$0	\$500,000	0.29%	\$1.18
63.1001	Welding System	\$0	\$7,500	\$0	0	\$0	\$7,500	0.00%	\$0.02
63.1201	Iso-Phase Bus Duct	\$230,000	\$0	\$0	0	\$0	\$230,000	0.14%	\$0.54
63.1202	Cable Bus	\$0	\$3,228,200	\$0	0	\$10,800	\$3,239,000	1.91%	\$7.66
63.2000	Metering & Relaying	\$60,000	\$0	\$0	0	\$0	\$60,000	0.04%	\$0.14
63.2800	UPS System	\$0	\$221,375	\$0	0	\$0	\$221,375	0.13%	\$0.52
63.2805	PanelBoards	\$0	\$30,000	\$0	0	\$0	\$30,000	0.02%	\$0.07
63.3002	VFDs, Motors and couplings	\$2,938,000	\$0	\$0	0	\$0	\$2,938,000	1.73%	\$6.95
63.3603	Low Voltage Switchgear	\$1,509,000	\$0	\$0	0	\$0	\$1,509,000	0.89%	\$3.57
63.3802	SUS Transformers	\$239,752	\$0	\$0	0	\$0	\$239,752	0.14%	\$0.57
63.3803	Aux. - Misc. Transformers	\$562,000	\$0	\$0	0	\$0	\$562,000	0.33%	\$1.33
63.5010	Grounding Materials and Equipment	\$0	\$225	\$0	0	\$0	\$225	0.00%	\$0.00
Subtotal - Electrical Purchase Contracts:		\$5,538,752	\$4,290,920	\$0	0	\$10,800	\$9,840,472	5.80%	\$23.26
Control Purchase Contracts:									
64.0202	DCS / PLC mods	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
64.0202	DCS / PLC mods	\$576,000	\$0	\$0	0	\$0	\$576,000	0.34%	\$1.36
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.34%	\$1.35
64.1003	Instrumentation	\$50,000	\$0	\$0	0	\$0	\$50,000	0.03%	\$0.12
Subtotal - Control Purchase Contracts:		\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.70%	\$2.83
Chemical Purchase Contracts:									
65.3210	Sorbent Injection	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3210	Sorbent Injection	\$2,000,000	\$0	\$0	0	\$0	\$2,000,000	1.18%	\$4.73
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	8.84%	\$35.46
65.3500	H - PAC Injection system	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.59%	\$2.36
Subtotal - Chemical Purchase Contracts:		\$18,000,000	\$0	\$0	0	\$0	\$18,000,000	10.61%	\$42.55
Subtotal Purchase Contracts:		\$29,832,770	\$4,704,675	\$0	0	\$7,315,536	\$41,852,981	24.66%	\$98.94

LG&E - KU- Mill Creek Unit 3 PJFF Rev. B

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Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 423	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$0		
71.0401	Cast In place Piling	\$0	\$0	\$32,838	640	\$1,350,000	\$1,382,838	0.81%	
71.0402	General Construction - Substructures	\$0	\$494,216	\$1,901,835	33,594	\$173,027	\$2,569,078	1.51%	
71.0403	General Construction - Superstructures	\$0	\$0	\$1,892,750	27,348	\$2,990,000	\$4,882,750	2.88%	
Subtotal - Civil / Structural Construction Contracts:		\$0	\$494,216	\$3,827,423	61,582	\$5,941,027	\$10,262,666	6.05%	\$24.26
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$0	0	\$0	\$0		
72.0403	Piping & Equipment Insulation	\$0	\$0	\$2,179,588	34,580	\$0	\$2,179,588	1.28%	
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$2,006,000	\$2,006,000	1.18%	
75.3200	Mechanical - Scrubber Refurbishment	\$0	\$0	\$0	0	\$1,235,600	\$1,235,600	0.73%	
77.0000	Mechanical Construction	\$0	\$0	\$0	0	\$32,944,117	\$32,944,117	19.41%	
77.0000	Mechanical Construction	\$0	\$0	\$10,572,786	172,899	\$0	\$10,572,786	6.23%	
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$12,752,375	\$207,479	\$36,185,717	\$48,938,092	28.84%	\$115.69
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$0	\$0	0	\$0	\$0		
74.0201	Control & Instrumentation Installation	\$0	\$182,000	\$5,604,278	89,697	\$10,800	\$5,797,078	3.42%	
74.0201	Control & Instrumentation Installation	\$0	\$0	\$242,922	3,888	\$0	\$242,922	0.14%	
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$5,847,200	93,585	\$10,800	\$6,040,000	3.56%	\$14.28
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$0	\$0	0	\$0	\$0		
78.0000	Service Contracts & Construction Indirects	\$0	\$2,944,725	\$3,314,884	71,397	\$10,526,818	\$16,786,427	9.89%	
78.4000	Warranty	\$0	\$0	\$0	0	\$145,600	\$145,600	0.09%	
Subtotal - Construction Indirects & Service Contracts:		\$0	\$2,944,725	\$3,314,884	71,397	\$10,672,418	\$16,932,027	9.98%	\$40.03
Subtotal - Construction Costs:		\$0	\$3,620,941	\$25,741,881	434,044	\$52,809,962	\$82,172,785	48.42%	\$194.26
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Indirect Costs:									
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99.1200	EPC Construction Management (Includes G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	3.60%	
99.1200	EPC Construction Management (Includes G&A)	\$0	\$2,097,599	\$4,460,812	99,672	\$4,212,356	\$10,770,767	6.35%	
99.1500	Project Insurance	\$0	\$0	\$0	0	\$2,248,969	\$2,248,969	1.33%	
99.1600	Performance Bond	\$0	\$0	\$0	0	\$963,844	\$963,844	0.57%	
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$47,732	\$0	0	\$0	\$47,732	0.03%	
99.2500	Project Contingency	\$0	\$0	\$0	0	\$14,417,264	\$14,417,264	8.50%	
99.2600	EPC profit	\$0	\$0	\$0	0	\$11,101,000	\$11,101,000	6.54%	
Subtotal - Indirect Costs:		\$0	\$2,145,331	\$6,920,812	159,672	\$36,598,992	\$45,665,135	26.91%	\$107.96
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