

LG&E - KU- Mill Creek Unit 3 PJFF Rev. B (Without SCR)

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-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					TOTAL \$	% OF TOTAL C.V.	\$ PER KW 423
		Engr Equip	Commodities						
		Material \$	Material \$	Labor \$	Manhours	Other			

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$1,190,120	\$102,505	\$0	0	\$984,736	\$2,277,361	1.30%	\$5.38
61.3801	Ductwork and breeching	\$1,982,800	\$0	\$0	0	\$600,000	\$2,582,800	1.48%	\$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	\$1,062,495	\$0	0	\$0	\$1,352,495	0.77%	\$3.20
63.3002	VFDs, Motors and Couplings	\$2,938,000	\$0	\$0	0	\$0	\$2,938,000	1.68%	\$6.95
63.1202	Cable Bus	\$0	\$3,228,200	\$0	0	\$10,800	\$3,239,000	1.85%	\$7.66
63.3603	Switchgear and MCCs	\$1,509,000	\$0	\$0	0	\$0	\$1,509,000	0.86%	\$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	0.32%	\$1.33
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.36%	\$1.48
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.33%	\$1.35
65.3210	Sorbent Injection	\$2,000,000	\$0	\$0	0	\$0	\$2,000,000	1.15%	\$4.73
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	8.59%	\$35.46
65.3500	H-PAC Mercury Control	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.57%	\$2.36
66.1000	Piping & Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.18%	\$0.74
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	2.86%	\$11.82
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.13%	\$0.55
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.14%	\$0.59
67.9532	ID Booster Fans	\$1,948,000	\$0	\$0	0	\$0	\$1,948,000	1.12%	\$4.61
Subtotal Purchase Contracts:		\$29,850,690	\$4,704,450	\$0	0	\$7,215,536	\$41,770,676	23.91%	\$98.75

Construction Contracts:

71.0100	Demolition works	\$0	\$0	\$32,838	\$640	\$1,350,000	\$1,382,838	0.79%	\$3.27
71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	\$0	\$1,428,000	\$1,428,000	0.82%	\$3.38
71.0403	Civil / Structural Construction - Super Structures	\$0	\$525,296	\$1,945,000	\$34,331	\$173,027	\$2,643,323	1.51%	\$6.25
71.0402	Civil / Structural Construction - Sub-Structures	\$0	\$0	\$2,140,798	\$30,932	\$2,990,000	\$5,130,798	2.94%	\$12.13
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,752,375	207,479	\$3,241,600	\$15,993,975	9.16%	\$37.81
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,847,027	93,582	\$10,800	\$6,039,827	3.46%	\$14.28
75.3200	Mechanical - Scrubber Refurbishment	\$0	\$0	\$0	0	\$37,609,299	\$37,609,299	21.53%	\$88.91
78.0000	Service Contracts & Construction Indirects	\$0	\$2,492,167	\$3,089,024	65,803	\$9,780,196	\$15,361,387	8.79%	\$36.32
Subtotal Construction Contracts:		\$0	\$3,199,463	\$25,807,063	432,768	\$56,582,922	\$85,589,448	49.00%	\$202.34

Total Direct Costs

\$29,850,690	\$7,903,913	\$25,807,063	432,768	\$63,798,458	\$127,360,124	72.92%	\$301.09
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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	3.50%	\$14.46
99.1200	EPC Construction Management (Includes G&A)	\$0	\$61,433	\$4,738,819	104,333	\$6,715,336	\$11,515,588	6.59%	\$27.22
99.1500	Project Insurance	\$0	\$0	\$0	0	\$2,351,973	\$2,351,973	1.35%	\$5.56
99.1600	Performance Bond	\$0	\$0	\$0	0	\$1,007,989	\$1,007,989	0.58%	\$2.38
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$46,322	\$0	0	\$0	\$46,322	0.03%	\$0.11
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$14,839,756	\$14,839,756	8.50%	\$35.08
99.2600	EPC Profit	\$0	\$0	\$0	0	\$11,427,000	\$11,427,000	6.54%	\$27.01
Total Indirect Costs		\$0	\$107,755	\$7,198,819	164,333	\$39,997,613	\$47,304,187	28.63%	\$111.83

Total Overnight (April 2011) EPC Capital Costs:

\$29,850,690	\$8,011,667	\$33,005,882	597,101	\$103,796,071	\$174,664,312	100.00%	\$412.92
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

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B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-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	\$3,172,920	\$102,505	\$0	0	\$1,584,736	\$4,860,161	2.78%	\$11.49
62.0000	Mechanical	\$2,513,018	\$311,250	\$0	0	\$5,050,000	\$7,874,268	4.51%	\$18.62
63.0000	Electrical	\$5,538,752	\$4,290,695	\$0	0	\$10,800	\$9,840,247	5.63%	\$23.26
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.68%	\$2.83
65.0000	Chemical	\$18,000,000	\$0	\$0	0	\$0	\$18,000,000	10.31%	\$42.55
Subtotal Purchase Contracts:		\$29,850,690	\$4,704,450	\$0	0	\$7,215,536	\$41,770,676	23.91%	\$98.75

Construction Contracts:

71.0100	Demolition Works	\$0	\$0	\$32,838	640	\$1,350,000	\$1,382,838	0.79%	\$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	0.82%	\$3.38
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$525,296	\$1,945,000	34,331	\$173,027	\$2,643,323	1.51%	\$6.25
71.0403	Civil / Structural Construction- Superstructures	\$0	\$0	\$2,140,798	30,932	\$2,990,000	\$5,130,798	2.94%	\$12.13
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,752,375	207,479	\$40,850,899	\$53,603,274	30.69%	\$126.72
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,847,027	93,582	\$10,800	\$6,039,827	3.46%	\$14.28
78.0000	Service Contracts & Construction Indirects	\$0	\$2,492,167	\$3,089,024	65,803	\$9,780,196	\$15,361,387	8.79%	\$36.32
Subtotal Construction Contracts:		\$0	\$3,199,463	\$25,807,063	432,768	\$56,582,922	\$85,589,448	49.00%	\$202.34

Total Direct Costs

\$29,850,690	\$7,903,913	\$25,807,063	432,768	\$63,798,458	\$127,360,124	72.92%	\$301.09
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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	3.50%	\$14.46
99.1200	Construction Management (With G&A)	\$0	\$61,433	\$4,738,819	104,333	\$6,715,336	\$11,515,588	6.59%	\$27.22
99.1500	Project Insurance	\$0	\$0	\$0	0	\$2,351,973	\$2,351,973	1.35%	\$5.56
99.1600	Performance Bond	\$0	\$0	\$0	0	\$1,007,989	\$1,007,989	0.58%	\$2.38
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$46,322	\$0	0	\$0	\$46,322	0.03%	\$0.11
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$14,839,756	\$14,839,756	8.50%	\$35.08
99.2600	EPC profit	\$0	\$0	\$0	0	\$11,427,000	\$11,427,000	6.54%	\$27.01
Total Indirect Costs		\$0	\$107,755	\$7,198,819	164,333	\$39,997,613	\$47,304,187	27.08%	\$111.83

Total Overnight (April 2011) EPC Capital Costs:

\$29,850,690	\$8,011,667	\$33,005,882	597,101	\$103,796,071	\$174,664,312	100.00%	\$412.92
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LG&E - KU- Mill Creek Unit 3 PJFF Rev. B (Without SCR)

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-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	1.48%	\$6.11
61.4001	Structural Steel	\$1,190,120	\$0	\$0	0	\$884,736	\$2,074,856	1.19%	\$4.91
61.4015	Handrail and stairs	\$0	\$33,300	\$0	0	\$0	\$33,300	0.02%	\$0.08
Subtotal - Civil / Structural Purchase Contracts:		\$3,172,920	\$102,505	\$0	0	\$1,584,736	\$4,860,161	2.78%	\$11.49
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	2.86%	\$11.82
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.14%	\$0.59
67.9532	ID Booster Fans	\$1,948,000	\$0	\$0	0	\$0	\$1,948,000	1.12%	\$4.61
66.1000	Piping and Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.18%	\$0.74
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.13%	\$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	\$5,050,000	\$7,874,268	4.51%	\$18.62
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	0.17%	\$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	0.13%	\$0.54
63.1202	Cable Bus	\$0	\$3,228,200	\$0	0	\$10,800	\$3,239,000	1.85%	\$7.66
63.2000	Metering & Relaying	\$60,000	\$0	\$0	0	\$0	\$60,000	0.03%	\$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	1.68%	\$6.95
63.3603	Low Voltage Switchgear	\$1,509,000	\$0	\$0	0	\$0	\$1,509,000	0.86%	\$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	0.32%	\$1.33
63.5010	Grounding Materials and Equipment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
Subtotal - Electrical Purchase Contracts:		\$5,538,752	\$4,290,695	\$0	0	\$10,800	\$9,840,247	5.63%	\$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	0.33%	\$1.36
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.33%	\$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	0.68%	\$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	1.15%	\$4.73
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	8.59%	\$35.46
65.3500	H - PAC Injection system	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.57%	\$2.36
Subtotal - Chemical Purchase Contracts:		\$18,000,000	\$0	\$0	0	\$0	\$18,000,000	10.31%	\$42.55
Subtotal Purchase Contracts:		\$29,850,690	\$4,704,450	\$0	0	\$7,215,536	\$41,770,676	23.91%	\$98.75

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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	0.79%	\$3.27
71.0401	Cast In place Piling	\$0	\$0	\$32,838	640	\$1,350,000	\$1,382,838	0.82%	\$3.38
71.0402	General Construction - Substructures	\$0	\$525,296	\$1,945,000	34,331	\$173,027	\$2,643,323	1.51%	\$6.25
71.0403	General Construction - Superstructures	\$0	\$0	\$2,140,798	30,932	\$2,990,000	\$5,130,798	2.94%	\$12.13
Subtotal - Civil / Structural Construction Contracts:		\$0	\$525,296	\$4,118,637	65,903	\$5,941,027	\$10,584,960	6.06%	\$25.02
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$0	0	\$0	\$0	1.25%	\$5.15
72.0403	Piping & Equipment Insulation	\$0	\$0	\$2,179,588	34,580	\$0	\$2,179,588	1.15%	\$4.74
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$1,235,600	\$1,235,600	0.71%	\$2.92
75.3200	Mechanical - Scurbber Refurbishment	\$0	\$0	\$0	0	\$37,609,299	\$37,609,299	21.53%	\$88.91
77.0000	Mechanical Construction	\$0	\$0	\$10,572,786	172,899	\$0	\$10,572,786	6.05%	\$24.99
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$12,752,375	\$207,479	\$40,850,899	\$53,603,274	30.69%	\$126.72
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$182,000	\$5,604,105	89,694	\$10,800	\$5,796,905	3.32%	\$13.70
74.0201	Control & Instrumentation Installation	\$0	\$0	\$242,922	3,888	\$0	\$242,922	0.14%	\$0.57
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$5,847,027	93,582	\$10,800	\$6,039,827	3.46%	\$14.28
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$2,492,167	\$3,089,024	65,803	\$9,605,796	\$15,186,987	8.69%	\$35.90
78.4000	Warranty	\$0	\$0	\$0	0	\$174,400	\$174,400	0.10%	\$0.41
Subtotal - Construction Indirects & Service Contracts:		\$0	\$2,492,167	\$3,089,024	65,803	\$9,780,196	\$15,361,387	8.79%	\$36.32
Subtotal - Construction Costs:		\$0	\$3,199,463	\$25,807,063	432,768	\$56,582,922	\$85,589,448	49.00%	\$202.34
Subtotal - Direct Costs:		\$29,850,690	\$7,903,913	\$25,807,063	432,768	\$63,798,458	\$127,360,124	72.92%	\$301.09
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