

Estimate revisions following Plant Meeting on 7/26/94.

JPP

94336. (file 94336A4)
 TVA - FHP FHE ESTIMATING
 Phase II Approval
 rept:np95

**KINGSTON FOSSIL PLANT
 COAL YARD RUNOFF POND - ALT 4
 ONE SUBMERSIBLE PUMP & ONE PIPE**

05-Oct-94
 11:03 AM
 EXECUTIVE SUMMARY

Location	Material \$\$	T & L Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
A REMOVALS		272	4,723			4,723
COAL YARD SUMP	2,411	382	6,733	397		9,541
PUMPING ASSY	39,833	227	5,154			44,987
EARTH FILL	2,070	55	970			3,040
PIPE TO ASHPOND	27,557	1,333	25,291	5,562		58,410
POWER SUPPLY	29,975	714	14,572	3,444	5,200	53,191
STNLS STL PIPE	4,406	60	1,444			5,850
z0 ELEC LTG	1,836	48	1,120			2,956
z0 ELECTRICAL	3,002	241	5,792	30		8,824
z1 HEAVY EQUIP				19,195		19,195
z1 TAGGED EQUIP				3,975		3,975
Construction Facilities		641	10,268	7,430	131	17,829
TOTAL DIRECT COST	111,088	3,969	76,065	40,032	5,331	232,515
Non-Manual Labor		(Phase 2 = 3,600 + Phase 3 = 16,200)				19,800
Total Contingency		(Phase 2 = 2,884 + Phase 3 = 6,700)				9,584
Partner Expense/Charges(84E)		(Fee = 7,100 + Ins = 7,100)				14,200
TOTAL CONSTRUCTION						276,100
:: LESS Engineered Materials - (Phase 2 = 57,716 + 2,884 contingency)						> 60,600 <
TOTAL CONTRACT CONSTRUCTION						215,500
F&H Engineering						23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials						5,500

Some minor adjustments were made to this estimate on 10/6/94. JPP

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EXECUTIVE SUMMARY

Location	Material \$\$	T&L Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
Project Manager's Contingency						15,150
== TOTAL (PAB APPROVAL) COST ==						320,000

PRELIMINARY

OCT 5 1994

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
A REMOVALS											
	Electrical Demolition	1.0	ls	24.00		24	580			580.00	580
	Remove Pump & Piping	1.0	ls	48.00		48	854			854.00	854
	Remove Pump House & Slab	1.0	ls	144.00		144	2,091			2,091.00	2,091
	Remove Pump Platform & Piping	1.0	ls	56.00		56	1,198			1,198.00	1,198
	subtotal A REMOVALS			0		272	4,723	0	0		4,723
COAL YARD SUMP											
	Excavate for sump	638.0	cy	0.13		85	1,449			2.28	1,449
	Backfill for sump	607.0	cy	0.27		165	2,824			4.65	2,824
	Backfill 1" crushed stone	29.0	C.Y.	0.13		4	59			12.17	353
	Riprap at 36" pipe inlet	56.0	cy	0.06		48	743			95.58	4,779
	8' long galv metal fence post	2.0	ea	2.00		4	53			36.50	73
	Wood Guard Post	4.0	ea	2.00		8	105			91.25	365
	X Reinforcing steel	250.0	lb	75		4	85			0.64	160
	X Filter Fabric (non-woven)	50.0	sf	25		2	28			1.06	53
	24" Polyethylene Suction pipe	40.0	lf	760		40	932			42.30	1,692
	24" Polyethylene coupling	2.0	ea	38		16	373			205.50	411
	Trtd Wood pole 6"x16ft, marker	2.0	ea	300		6	82			191.00	382
	subtotal COAL YARD SUMP			2,411		382	6,733	397	0		9,541
PUMPING ASSY											
	::Polyethylene Sump 6'dx16'h w/c	1.0	ea	> 11,000	<	40	848			11848.00	11,848
	Concrete base 6'x6'x2'	3.0	cy	180		8	100			93.33	280
	36" Polyethylene Suction pipe	50.0	lf	1,200		67	1,553			55.06	2,753
	36" Polyethylene couplings	4.0	ea	112		24	582			173.50	694
	::6sbmsbl 40hp pmp w/slide rail	1.0	ea	> 24,341	<	64	1,491			25832.00	25,832
	::Level control system	1.0	ea	> 3,000	<	24	580			3580.00	3,580
	subtotal PUMPING ASSY			39,833		227	5,154	0	0		44,987

94338.(file 94336A4)

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M--H/Unit	Man--Hours	Labor \$\$	Eqpt/Othr \$\$	Subcont \$	Unit Cost	Total Cost
EARTHFILL											
	Earth Fill & compaction	700.0	C.Y.		0.01	9	151			0.22	151
	Crushed Stone Pmp House Area	230.0	tn	2,070	0.20	46	819			12.56	2,889
	subtotal EARTHFILL			2,070		55	970	0	0		3,040
PIPE TO ASPHOND											
	Temporary dike @ coal yd sump	1.0	ls		96.00	96	1,472	562		2034.00	2,034
	Backfill sand around 10" pipe	620.0	cy	3,382	0.33	205	3,047			10.37	6,429
	Excavate for 10" pipe trench	2,050.0	cy		0.11	219	3,639			1.78	3,639
	Backfill earth for 10" trench	1,430.0	cy		0.17	240	3,714			2.60	3,714
	::10" Polyethylene Pipe SDR 19	4,200.0	lf		0.11	480	11,207			7.02	29,477
	::10" Polyethylene Pipe ftgs 90d	2.0	ea		4.50	9	216			272.00	544
	::10" Polyethylene Pipe ftgs 45d	5.0	ea		4.50	23	540			185.00	925
	::10" Polyethylene Pipe flange	1.0	ea		97	5	108			205.00	205
	Rent polyethylene fusion welder	1.0	ls					5,000		5000.00	5,000
	::10" Polyethylene Pipe ftgs WYE	1.0	ea		6.00	6	144			439.00	439
	12" pipe sleeves, A53 cs, coated	100.0	lf	4,800	0.50	50	1,204			60.04	6,004
	subtotal PIPE TO ASPHOND			27,557		1,333	25,291	5,562	0		58,410
POWER SUPPLY											
	Backfill sand over cable	194.0	cy	1,058	0.33	64	953			10.37	2,011
	Backfill earth trench & area	583.0	cy		0.11	65	972			1.67	972
	Horz Boring under road	80.0	lf					5,200		65.00	5,200
	Excavate trench 18x36x3500ff	583.0	cy		0.15	87	1,353			2.32	1,353
	3" GRS conduit w/ftgs & spts	200.0	lf	1,643	0.74	147	3,506	38		25.94	5,187
	#300 mcm s/c underground cable	9,900.0	lf	26,374	0.03	297	6,482			3.32	32,856
	#300 mcm splices underground	9.0	ea	900	6.00	54	1,306			245.11	2,206
	Cmptr, Ybrtr, plate, gas, 360lb	2.0	ea					420		210.00	420
	Bkhw/Ldr, 1CYx15'x18"(Eqpt Only	1.0	ea					800		800.00	800
	TrkDmp, 4x2, Platform	1.0	ea					250		250.00	250
	Crn, RghTrn, 21-25Tn, SwCb	1.0	ea					900		900.00	900
	Small Tool Dispense & Repair	700.0	sthr					476		0.68	476

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Loc	Description	Quantity	Unit	Material \$\$	M--H/Unit	Man--Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
	Consumables & Expendables	700.0	cehr					560		0.80	560
	subtotal POWER SUPPLY			29,975		714	14,572	3,444	5,200		53,191
	STNLS STL PIPE										
	6" dia SSteel 316 pipe sch 40	14.0	lf	1,061	1.30	18	440			107.21	1,501
	10" SSteel 316 flange, 150# SO	1.0	ea	700	6.00	6	145			845.00	845
	6" SSteel 316 flange, 150# SO	1.0	ea	235	4.00	4	96			331.00	331
	6" SSteel 316 90deg sch 40	1.0	ea	375	9.00	9	217			592.00	592
	10x6" SS 316 reducer sch 40	1.0	ea	600	12.00	12	289			889.00	889
	10" SSteel 316 pipe sch 40	10.0	lf	1,420	1.00	10	233			165.30	1,653
	1/2" plug hex head 316 ss	1.0	ea	15	1.00	1	24			39.00	39
	subtotal STNLS STL PIPE			4,406		60	1,444	0	0		5,850
	Z0 ELEC LTG										
	1-1/2" GRS conduit for stanchion	12.0	lf	35	0.80	10	230			22.08	265
	Conduit trench, galv steel, 3/4"	20.0	lf	71	0.20	4	94			8.25	165
	#12--s/THHN/THWN lighting wire	100.0	lf	11	0.03	3	71			0.82	82
	1" FD outlet box	1.0	ea	10	0.67	1	16			26.00	26
	Ground fault indicating, 15 amp	1.0	ea	40	1.00	1	24			64.00	64
	Cover plwthr proof nema 7-23	1.0	ea	19	1.00	1	24			43.00	43
	Mini Pwr--zone pwr fed 120v, 5kva	1.0	ea	1,300	24.00	24	564			1864.00	1,864
	Light fix 100mv, stanchion mid	1.0	ea	350	4.00	4	97			447.00	447
	subtotal z0 ELEC LTG			1,836		48	1,120	0	0		2,956
	Z0 ELECTRICAL										
	Elec Equip Rack (Pmp ctrl, disc)	1.0	ea	130	8.00	8	193			323.00	323
	3/4" GRS conduit w/flgs & spts	30.0	lf	52	0.72	22	517	7		19.20	576
	1" GRS conduit w/flgs & spts	80.0	lf	165	0.40	32	758	19		11.78	942
	2" GRS conduit w/flgs & spts	30.0	lf	116	0.50	15	359	4		15.97	479
	3/4" flexible conduit, sealite	5.0	lf	18	1.20	6	145			32.60	163

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Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcont \$	Unit Cost	Total Cost
	1" flexible conduit, sealite	10.0	lf	45	0.90	9	218			26.30	263
	2" flexible conduit, sealite	5.0	lf	53	1.80	9	218			54.20	271
	#10 -3/c PXMJ 600v P & C cable	100.0	lf	79	0.04	4	87			1.86	186
	#12-4/c PXMJ 600v P & C cable	40.0	lf	37	0.08	3	73			2.75	110
	#2/0-s/c PXJ-600v P & C cable	450.0	H	871	0.08	34	830			3.78	1701
	Cable Terminations	68.0	ea	68	0.40	27	658			10.68	726
	3/4" ground rod at sump	2.0	ea	50	2.00	4	94			72.00	144
	Bare copper wire stranded #2	100.0	lf	78	0.30	30	725			8.03	803
	Grnd,cdwl,#2 wire mot frame	4.0	ea	40	2.00	8	196			59.00	236
	Junction Box NEMA4,30"-30"-8"	1.0	ea	500	24.00	24	580			1080.00	1,080
	Safety hvy duty 600v 3p 60 a	1.0	ea	700	6.00	6	141			841.00	841
	subtotal z0 ELECTRICAL			3,002		241	5,792	30	0	0	8,824
	Z1 HEAVY EQUIP										
	AirComp, 250cfm	1.0	ea					375		375.00	375
	Trac,Crawl,Med,D5,100-110 hp	1.0	ea					2,700		2700.00	2,700
	Trac,Crawl,Hvy,D8,270-300 hp	1.0	ea					1,750		1750.00	1,750
	Compct,SheepFt,Rex 3-50	1.0	ea					2,800		2800.00	2,800
	Bkhd/Ldr, 1-1/4CYx17'x18"	2.0	ea					2,700		1350.00	2,700
	TrkDmp, 4x2, Platform	1.0	ea					750		750.00	750
	TrkDmp,6x4,12-14CY, OnRd	2.0	ea					1,800		900.00	1,800
	Trk, Fuel, 4x2	1.0	ea					750		750.00	750
	Sprnkr 6x4, 2,000 Gal	1.0	ea					900		900.00	900
	Crn,RghTrn,21-25Tn,SwCb	1.0	ea					1,800		1800.00	1,800
	Crn,RghTrn,41-50Tn,SwCb	1.0	ea					1,500		1500.00	1,500
	Welder	1.0	ea					500		500.00	500
	Tugger, 2,000-2,500 lb	1.0	ea					870		870.00	870
	subtotal z1 HEAVY EQUIP			0		0	0	19,195	0	0	19,195
	Z1 TAGGED EQUIP										
	Air Hoist(Tugger)1000#	1.0	ea					750		750.00	750
	AirEqp,,khmt,to 70# paving bkr	2.0	ea					240		120.00	240

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	CmptEqp,Tamper,175lb,	2.0	ea					2,400		1,200.00	2,400
	Bndr,hydrf,cndt/pipe,to 2'	1.0	ea					585		585.00	585
subtotal z1 TAGGED EQUIP											
		0		0	0	0	0	3,975	0		3,975
Construction Facilities											
	Mobilization	1.0	WKS.		192.00	192	2,876	243		3,119.00	3,119
	Admin Time(Employee proc.etc.)	7.0	WKS.		7.00	49	1,042			148.86	1,042
	General Cleanup	7.0	WKS.		16.00	112	1,674	424		299.71	2,098
	Drinking Water	7.0	WKS.		8.00	56	937	774		244.43	1,711
	Hauling	7.0	WKS.		24.00	168	2,812	1,273		583.57	4,085
	Small Tool Dispense & Repair	3.070.0	sthr					2,087		0.68	2,087
	Portable Toilet Service	7.0	WKS						131	18.71	131
	Consumables & Expendables	3.070.0	cehr					2,508		0.82	2,508
	Demobilization	1.0	WKS.		64.00	64	927	121		1048.00	1,048
subtotal Construction Facilities											
		0		0	641	10,268	7,430	131			17,829

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	TOTAL DIRECT COST		111,088		3,969	76,065	40,032	5,331		232,515
	Non-Manual Labor		(Phase 2 = 3,600 + Phase 3 = 16,200)							19,800
	Total Contingency		(Phase 2 = 2,884 + Phase 3 = 6,700)							9,584
	Partner Expenses/Charges (84E)		(Fee = 7,100 + Insur = 7,100)							14,200
	TOTAL CONSTRUCTION									276,100
	LESS Engineered Materials - (Indicated by ><)		(Phase 2 = 57,716 + 2,884 contingency)							60,600 <
	TOTAL CONTRACT CONSTRUCTION									215,500
	F&H Engineering - Phase 1									21,580
	F&H Engineering - Phase 2									1,670
	F&H Engineering - Phase 3									5,500
	Plant Overhead Charges for Procurement & Handling of Capital Materials									15,150
	Project Manager's Contingency									
	= = TOTAL (PAB APPROVAL) COST = =									320,000