

Estimate No: 94336 R1
 CER No. : KIF93-1218-PO
 PCN : KIF009

TENNESSEE VALLEY AUTHORITY
FOSSIL & HYDRO POWER
COST ESTIMATE/SCOPE OF WORK

C09 941007 001

TO : Those listed
 FROM: Ronald W. Clevenger, Manager of Estimating, Fossil & Hydro Engineering
 LP 2L-C

Project: Kingston Fossil Plant

Feature: Coal Yard Runoff Pond

Requesting Organization: Project Management (D. A. Howard)

Purpose: For Phase II approval

Description of Work to be Performed: Estimate the cost to replace the existing coal yard runoff pond pumps, piping and remove the existing pumphouse and platform. Three alternate pump and pipeline configurations were estimated: Alternate 1 - One pump and one discharge pipeline to ash pond; Alternate 2 - two pumps and one discharge pipeline to ash pond; Alternate 3 - Two pumps and two discharge pipelines to ash pond; Alternate 4 - One submersible pump and one discharge pipeline to ash pond. Estimate was revised to add on additional alternate. Alternates 1-3 was also revised. The reduction for Alternate 1 is \$73,500; Alternate 2 is \$87,000; Alternate 3 is \$104,000. No Phase I cost is included in estimate.

Phase:	Study I	Design & Long-Lead Procurement II	Implementation III	Total
Total Direct Cost:				
Alternate 1	<u>SNA</u>	<u>\$170,580</u>	<u>\$245,920</u>	<u>\$416,500</u>
Alternate 2	<u>SNA</u>	<u>\$247,580</u>	<u>\$279,420</u>	<u>\$527,000</u>
Alternate 3	<u>SNA</u>	<u>\$266,580</u>	<u>\$312,420</u>	<u>\$579,000</u>
Alternate 4	<u>SNA</u>	<u>\$ 90,980</u>	<u>\$229,020</u>	<u>\$320,000</u>

Type of Estimate: NA Detail Preliminary

Schedule:
 Start : 04/04/94 10/03/94 FY 95
 Complete: 08/26/94 12/30/94 FY 95

Comments: Project Team Implemented? Yes x No

Reference the following attachments:

Attachment 1 - Cost Estimate Attachment 3 - Bill of Material
Attachment 2 - Scope of Work Attachment 4 - Cash Flow

- K. W. Burnett, LP 2G-C
- R. M. Cole, KIF
- J. R. Dunn, KIF 1A-K
- W. D. Hall, BR 4A-C
- D. A. Howard, BR 3D-C
- A. G. Mock, SMW 1B-K (with diskette)
- D. W. Scott, LP 2G-C
- RIMS, CST 13B-C

Lab D. C. Ritchey 10/7/94
 Submitted by (Date)

Issue Date: OCT 07 1994

94336.(file 94336A1)

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Phase II Approval

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KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
.ALT 1 - ONE PUMPS & ONE PIPELINE.

06-Oct-94

02:03 PM

EXECUTIVE SUMMARY

Location	Material \$\$	T & L Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
A REMOVALS		300	5,322			5,322
COAL YARD SUMP	15,560	949	16,954			32,514
DX PUMPING ASSY	105,614	256	5,908			111,522
EARTHFILL	2,070	55	970			3,040
PIPE TO ASHPOND	22,768	1,347	25,069	5,562		53,399
STNLS STL PIPE	23,173	187	4,482			27,655
z0 ELECTRICAL	2,088	180	4,287	31		6,406
z1 HEAVY EQUIP				21,320		21,320
z1 TAGGED EQUIP				5,580		5,580
Construction Facilities		997	16,318	11,288	244	27,850
TOTAL DIRECT COST	171,271	4,267	79,305	43,780	244	294,599
Non-Manual Labor	(Phase 2 = 6,000 + Phase 3 = 19,500)					25,500
Total Contingency	(Phase 2 = 6,000 + Phase 3 = 17,200)					23,200
Partner Expsse/Charges(84E)	(Fee = 7,600 + Ins = 7,600)					15,200
TOTAL CONSTRUCTION						358,500
:: LESS Engineered Materials - (Phase 2 = 125,000 + 6,000 contingency)					>	131,000 <
TOTAL CONTRACT CONSTRUCTION						227,500
F&H Engineering						23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials						12,000
Project Manager's Contingency						22,750
== TOTAL (PAB APPROVAL) COST ==						416,500

94336.(file 94336A2)

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KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
.ALT 2-TWO PUMPS & ONE PIPELINE.

06-Oct-94

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EXECUTIVE SUMMARY

Location	Material \$\$	T & L Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
A REMOVALS		272	4,723			4,723
COAL YARD SUMP	15,560	946	16,913			32,473
DX PUMPING ASSY	178,118	304	7,026			185,144
EARTHFILL	2,235	87	1,728	19		3,982
PIPE TO ASHPOND	22,764	1,348	25,084	5,562		53,410
STNLS STL PIPE	41,546	329	7,907			49,453
z0 ELECTRICAL	1,923	148	3,529	12		5,464
z1 HEAVY EQUIP				20,670		20,670
z1 TAGGED EQUIP				5,540		5,540
Construction Facilities		997	16,318	11,488	244	28,050
TOTAL DIRECT COST	262,144	4,427	83,221	43,291	244	388,899
Non-Manual Labor	(Phase 2 = 6,000 + Phase 3 = 20,300)					26,300
Total Contingency	(Phase 2 = 10,500 + Phase 3 = 19,400)					29,900
Partner Expnse/Charges(84E)	(Fee = 7,900 + Ins = 7,900)					15,800
TOTAL CONSTRUCTION						460,900
:: LESS Engineered Materials - (Phase 2 = 197,500 + 10,500 contingency)					>	208,000 <
TOTAL CONTRACT CONSTRUCTION						252,900
F&H Engineering						23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials						12,000
Project Manager's Contingency						30,850
== TOTAL (PAB APPROVAL) COST ==						527,000

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KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
.ALT 3–TWO PUMPS & TWO PIPELINE.

06–Oct–94
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EXECUTIVE SUMMARY

Location	Material \$\$	T & L Man–Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
A REMOVALS		272	4,723			4,723
COAL YARD SUMP	15,560	946	16,913			32,473
DX PUMPING ASSY	178,118	304	7,026			185,144
EARTHFILL	2,235	87	1,728	19		3,982
STNLS STL PIPE	46,346	385	9,256			55,602
SUMP – ASH POND	41,564	1,858	37,034	5,562		84,160
z0 ELECTRICAL	1,923	148	3,529	12		5,464
z1 HEAVY EQUIP				23,620		23,620
z1 TAGGED EQUIP				5,540		5,540
Construction Facilities		997	16,318	12,339	244	28,901
TOTAL DIRECT COST	285,744	4,995	96,521	47,091	244	429,599
Non–Manual Labor	(Phase 2 = 6,000 + Phase 3 = 23,800)					29,800
Total Contingency	(Phase 2 = 10,700 + Phase 3 = 21,700)					32,400
Partner Expnse/Charges(84E)	(Fee = 9,200 + Ins = 9,200)					18,400
TOTAL CONSTRUCTION						510,200
:: LESS Engineered Materials – (Phase 2 = 216,300 + 10,700 contingency)					>	227,000 <
TOTAL CONTRACT CONSTRUCTION						283,200
F&H Engineering						23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials						12,000
Project Manager's Contingency						33,550
== TOTAL (PAB APPROVAL) COST ==						579,000

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

06-Oct-94

10:16 AM

EXECUTIVE SUMMARY

Location	Material \$\$	T & L		Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
		Man-Hours					
A REMOVALS		272		4,723			4,723
COAL YARD SUMP	1,513	320		5,315	397		7,225
EARTHFILL	2,070	55		970			3,040
PIPE TO ASHPOND	27,262	1,327		25,147	5,562		57,971
POWER SUPPLY	29,975	714		14,572	3,444	5,200	53,191
PUMPING ASSY	40,731	289		6,572			47,303
STNLS STL PIPE	3,853	57		1,375			5,228
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	7,437	131	17,836
TOTAL DIRECT COST	110,239	3,960		75,852	40,039	5,331	231,461
Non-Manual Labor							19,800
							(Phase 2 = 3,600 + Phase 3 = 16,200)
Total Contingency							9,579
							(Phase 2 = 2,879 + Phase 3 = 6,700)
Partner Expnse/Charges(84E)							14,200
							(Fee = 7,100 + Ins = 7,100)
TOTAL CONSTRUCTION							275,040
:: LESS Engineered Materials - (Phase 2 = 57,421 + 2,879 contingency)							> 60,300 <
TOTAL CONTRACT CONSTRUCTION							214,740
F&H Engineering							23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials							5,500

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

06-Oct-94

10:16 AM

EXECUTIVE SUMMARY

Location	T & L		Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
	Material \$\$	Man-Hours				
Project Manager's Contingency						16,210
== TOTAL (PAB APPROVAL) COST ==						320,000

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KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 1 - ONE PUMPS & ONE PIPELINE.

06 - Oct - 94

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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	84.00		84	1,797			1,797.00	1,797
	subtotal A REMOVALS			0		300	5,322	0	0	0	5,322
COAL YARD SUMP											
	Excavate for sump	810.0	cy	0.13		108	1,845			2.28	1,845
	Backfill for sump	470.0	cy	0.27		128	2,187			4.65	2,187
	Backfill 1" crushed stone	340.0	C.Y.	3.443		43	693			12.16	4,136
	Formwork for slab & walls sump	1,792.0	sfa	3.665		358	6,327			5.58	9,992
	Reinforcing place walls, #3 #7	4.4	ton	2,160		70	1,531			838.86	3,691
	Pour concrete in place 3000psi	60.0	cy	3.900		160	2,610			108.50	6,510
	Welded shear conn 3/4"x4 - 3/16"	24.0	ea	24		18	394			17.42	418
	3"x3"x5/16 steel angle A36	10.0	lf	40		6	131			17.10	171
	Str stl w/ 10' - 45's, w 1.4 x 28	50.0	lf	638		32	672			26.20	1,310
	Steel Plates 3/4"x1'-2"	6.0	ea	150		16	341			81.83	491
	1 - 1/2" x 3/16" Galv bar grating	125.0	sf	1,500		6	129			13.03	1,629
	4" PVC pipe sch 40	10.0	lf	40		4	94			13.40	134
	subtotal COAL YARD SUMP			15,560		949	16,954	0	0	0	32,514
DX PUMPING ASSY											
	::Polypropylene Sump 10' dia x 16'h	1.0	ea	> 18,000	<	40	848			18848.00	18,848
	::36" Polypropylene Suction pipe	1.0	ls	> 12,109	<	144	3,362			15471.00	15,471
	::6" Vert Cant 40hp pump w/mitr	1.0	ea	> 72,505	<	48	1,118			73623.00	73,623
	::Level control system	1.0	ea	> 3,000	<	24	580			3580.00	3,580
	subtotal DX PUMPING ASSY			105,614		256	5,908	0	0	0	111,522
EARTH FILL											

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KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 1 - ONE PUMPS & ONE PIPELINE.

06-Oct-94

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcont \$	Unit Cost	Total Cost
	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 ASHPOND											
	Temporary dike @ coal yd sump	1.0	ls	160.00		160	2,454	562		3016.00	3,016
	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	> 18,270	< 0.11	480	11,207			7.02	29,477
	:::10' Polyethylene Pipe ftgs 90d	2.0	ea	> 339	< 4.50	9	216			277.50	555
	:::10' Polyethylene Pipe ftgs 45d	5.0	ea	> 385	< 4.50	23	540			185.00	925
	:::10' Polyethylene Pipe flange	1.0	ea	> 97	< 4.50	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	> 295	< 6.00	6	144			439.00	439
	subtotal PIPE TO ASHPOND			22,768		1,347	25,089	5,562	0		53,399
STNLS STL PIPE											
	Valve box 20"x14"x16"dp,plas	1.0	ea	200	16.00	16	388			588.00	588
	Valve box 20"x14"x6"dp,plas	1.0	ea	100	8.00	8	194			294.00	294
	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
	10' SSteel 316 45deg sch 40	2.0	ea	1,760	12.00	24	578			1169.00	2,338
	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			185.30	1,653
	1" SSteel 316 pipe sch 40	10.0	lf	70	0.40	4	96			16.60	166
	10"x1" socket 3000# 316 ss	1.0	ea	108	4.00	4	94			202.00	202
	1" socket 3000# 316ss 90deg	2.0	ea	100	4.00	8	189			144.50	289
	10"x1" threadlet 3000# 316 ss	1.0	ea	90	4.00	4	94			184.00	184
	1/2"plug hex head 316 ss	1.0	ea	15	1.00	1	24			39.00	39
	12" pipe sleeves,A53 cs,coated	100.0	lf	4,800	0.50	50	1,204			60.04	6,004

94336.(file 94336A1)

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KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 1 - ONE PUMPS & ONE PIPELINE.

06-Oct-94

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Sub-contr \$\$	Unit Cost	Total Cost
	10" ss check valve 150# jingd	1.0	ea	6,300	24.00	24	582			6882.00	6,882
	1" ss gate valve 150#, threaded	1.0	ea	6,300	2.50	3	59			6359.00	6,359
	subtotal STNLS STL PIPE			23,173		187	4,482	0	0		27,655
	Z0 ELECTRICAL										
	3/4"GRS conduit w/ftgs & spts	30.0	lf	52	0.72	22	517	7		19.20	576
	1"GRS conduit w/ftgs & spts	80.0	lf	165	0.40	32	758	19		11.78	942
	1 - 1/2"GRSconduit w/ftgs & spts	12.0	lf	35	0.80	10	230	1		22.17	266
	2" GRS conduit w/ftgs & 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
	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			1.66	166
	#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	120.0	lf	228	0.08	9	221			3.74	449
	Cable Terminations	62.0	ea	62	0.40	25	600			10.68	662
	Bare copper wire stranded #2	50.0	lf	39	0.30	15	363			8.04	402
	Grnd.cdwi,#2 wire mobt frame	4.0	ea	40	2.00	8	196			59.00	236
	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
	Safety hvy duty 600v 3p 60 a	1.0	ea	700	6.00	6	141			841.00	841
	Light fix, 100mv, stanchion mtd	1.0	ea	350	4.00	4	97			447.00	447
	subtotal z0 ELECTRICAL			2,088		180	4,287	31	0		6,406
	Z1 HEAVY EQUIP										
	AirComp, 250cfm	1.0	ea					250		250.00	250
	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
	Bkhol,Dr, 1-1/4CYx17'x18"	2.0	ea					2,700		1350.00	2,700
	TrkDmp, 4x2, Platform	1.0	ea					750		750.00	750

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KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 1 - ONE PUMPS & ONE PIPELINE.

06-Oct-94

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcont \$\$	Unit Cost	Total Cost
	TrkDmp,6x4,12-14CY, OnRd	3.0	ea					4,050		1350.00	4,050
	Trk, Fuel, 4x2	1.0	ea					750		750.00	750
	Sprnkt,6x4, 2,000 Gal	1.0	ea					900		900.00	900
	Crn,RghtTrn,21-25Tn,SwCb	1.0	ea					1,800		1800.00	1,800
	Crn,RghtTrn,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	21,320	0		21,320
z1 TAGGED EQUIP											
	Air Hoist(Tugger)1000#	1.0	ea					750		750.00	750
	AirEqp,1khr to 70# paving blr	2.0	ea					240		120.00	240
	CmptEqp,Tamper,175lb,	2.0	ea					2,400		1200.00	2,400
	Cncte bucket,laydown,1 C.Y.	1.0	ea					240		240.00	240
	Cncte,mtrzd,buggy,walk-behind	1.0	ea					1,365		1365.00	1,365
	Bndr,hydr,cndt/pipe,to 2"	1.0	ea					585		585.00	585
subtotal z1 TAGGED EQUIP											
				0		0	0	5,580	0		5,580
Construction Facilities											
	Mobilization	1.0	WKS.		192.00	192	2,876	243		3119.00	3,119
	Admin Time(Employee proc,etc.)	13.0	WKS.		9.00	117	2,442			187.85	2,442
	General Cleanup	13.0	WKS.		16.00	208	3,109	788		299.77	3,897
	Drinking Water	13.0	WKS.		8.00	104	1,741	1,438		244.54	3,179
	Hauling	13.0	WKS.		24.00	312	5,223	2,365		583.69	7,588
	Small Tool Dispense & Repair	4,267.0	str					2,902		0.68	2,902
	Portable Toilet Service	13.0	WKS					244		18.77	244
	Consumables & Expendables	4,267.0	cehr					3,431		0.80	3,431
	Demobilization	1.0	WKS.		64.00	64	927	121		1048.00	1,048
subtotal Construction Facilities											
				0		997	16,318	11,288	244		27,850

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Phase II Approval

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KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 1 - ONE PUMPS & ONE PIPELINE.

06-Oct-94

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ATTACHMENT 1

Loc	Description	Quantity Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
	TOTAL DIRECT COST		171,271		4,267	79,305	43,780	244		294,599
	Non-Manual Labor	(Phase 2 = 6,000 + Phase 3 = 19,500)								25,500
	Total Contingency	(Phase 2 = 6,000 + Phase 3 = 17,200)								23,200
	Partner Expenses/Charges (84E)	(Fee = 7,600 + Insur = 7,600)								15,200
	TOTAL CONSTRUCTION									358,500
	LESS Engineered Materials - (Indicated by > <)	(Phase 2 = 125,000 + 6,000 contingency)							>	131,000 <
	TOTAL CONTRACT CONSTRUCTION									227,500
	F&H Engineering - Phase 1									21,580
	F&H Engineering - Phase 2									1,970
	F&H Engineering - Phase 3									12,000
	Plant Overhead Charges for Procurement & Handling of Capital Materials									22,750
	Project Manager's Contingency									
	== TOTAL (PAB APPROVAL) COST ==									416,500

Loc	Description	Quantity	Unit	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	810.0	cy	0.13	108	1,845			2.28	1,845
	Backfill for sump	470.0	cy	0.27	128	2,187			4.65	2,187
	Backfill 1" crushed stone	340.0	C.Y.	0.12	40	652			12.04	4,095
	Formwork for slab & walls sump	1,792.0	sft	0.20	358	6,327			5.58	9,992
	Reinforcing place walls, #3 #7	4.4	ton	16.00	70	1,531			838.86	3,991
	Pour concrete in place 3000psi	60.0	cy	2.67	160	2,610			108.50	6,510
	Welded shear conn 3/4"x4-3/16"	24.0	ea	0.75	18	394			17.42	418
	3"x3"x5/16 steel angle A36	10.0	lf	0.60	6	131			26.20	171
	Str stl w/ 10' - 45's, w 14 x 26	50.0	lf	0.64	32	672			81.83	491
	Steel Plates 3/4"x1'x1'-2"	6.0	ea	2.67	16	341			13.03	1,929
	1-1/2"x3/16"Galv bar grating	125.0	sf	0.05	6	129			13.40	134
	4" PVC pipe sch 40	10.0	lf	0.40	4	94				
	subtotal COAL YARD SUMP			15,560	946	16,913	0	0		32,473
DX PUMPING ASSY										
	:::Polypropylene Sump 10' dia x 16'h	1.0	ea	> 18,000	< 40.00	848			18848.00	18,948
	:::36" Polypropylene Suction pipe	1.0	ls	> 12,109	< 144.00	3,362			15471.00	15,471
	:::6" Vert Cent 40hp pump w/mtr	2.0	ea	> 145,009	< 48.00	2,236			73622.50	147,245
	:::Level control system	1.0	ea	> 3,000	< 24.00	580			3580.00	3,580
	subtotal DX PUMPING ASSY			178,118	304	7,026	0	0		185,144
EARTH FILL										

Loc	Description	Quantity	Unit	Material \$	M - H/Unit	Man - Hours	Labor \$	Eqpt/Ottr \$	Subcontr \$	Unit Cost	Total Cost
	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
	1"GRS conduit w/fts & spts	80.0	lf	165	0.40	32	758		19	11.78	942
	subtotal EARTHFILL			2,235		87	1,728		19	0	3,982
PIPE TO ASHPOND											
	Temporary dike @ coal yd sump	1.0	ls	160.00		160	2,454		562	3016.00	3,016
	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	> 18,270	< 0.11	481	11,222			7.02	29,492
	::10" Polyethylene Pipe fgs 90d	2.0	ea	> 339	< 4.50	9	216			277.50	555
	::10" Polyethylene Pipe fgs 45d	5.0	ea	> 385	< 4.50	23	540			185.00	925
	::10" Polyethylene Pipe flange	1.0	ea	> 97	< 4.50	5	108			205.00	205
	Rent polyethylene fusion welder	1.0	ls					5,000		5000.00	5,000
	::10" Polyethylene Pipe fgs WYE	1.0	ea	> 291	< 6.00	6	144			435.00	435
	subtotal PIPE TO ASHPOND			22,764		1,348	25,084		5,562	0	53,410
STNLS STL PIPE											
	Valve box 20"x14"x16"dp,plns	2.0	ea	400	16.00	32	776			588.00	1,176
	Valve box 20"x14"x6"dp,plns	2.0	ea	200	8.00	16	388			294.00	588
	10" SSteel 316 flange,150# SO	2.0	ea	1,400	6.00	12	289			844.50	1,689
	6" SSteel 316 flange,150# SO	2.0	ea	470	4.00	8	193			331.50	663
	6" SSteel 316 90deg sch 40	2.0	ea	750	9.00	18	434			592.00	1,184
	10" SSteel 316 45deg sch 40	4.0	ea	3,520	12.00	48	1,156			1169.00	4,676
	10x6" SS 316 reducer sch 40	2.0	ea	1,200	12.00	24	578			889.00	1,778
	10" SSteel 316 pipe sch 40	20.0	lf	2,840	1.00	20	466			165.30	3,306
	1" SSteel 316 pipe sch 40	20.0	lf	140	0.40	8	193			16.65	333
	10"x1" socketlet 3000# 316 ss	2.0	ea	216	4.00	8	189			202.50	405
	1" socketlet 3000# 316ss 90deg	4.0	ea	200	4.00	16	378			144.50	578
	10"x1" threadolet 3000# 316 ss	2.0	ea	180	4.00	8	189			184.50	369
	1/2"plug hex head 316 ss	2.0	ea	30	1.00	2	47			38.50	77

94336 (file 94336A2)

TVA - FHP FHE ESTIMATING

Phase II Approval

rept:n195

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
.ALT 2-TWO PUMPS & ONE PIPELINE.**

06-Oct-94

02:13 PM

ATTACHMENT 1

Loc	Description	Quantity	Unit	M-H/Unit	Man-Hours	Labor \$\$	Eqply/Othr \$\$	Subcontnr \$\$	Unit Cost	Total Cost
	12" pipe sleeves A53 cs. coated	100.0	lf	0.56	56	1,349			61.49	6,149
	10" ss check valve 150# flngd	2.0	ea	24.00	48	1,164			6882.00	13,764
	1" ss gate valve 150# threaded	2.0	ea	2.50	5	118			6359.00	12,718
	subtotal STNLS STL PIPE				329	7,907	0	0		49,453
Z0 ELECTRICAL										
	3/4" GRS conduit w/flgs & spts	30.0	lf	0.72	22	517		7	19.20	576
	1-1/2" GRS conduit w/flgs & spts	12.0	lf	0.80	10	230		1	22.17	266
	2" GRS conduit w/flgs & spts	30.0	lf	0.50	15	359		4	15.97	479
	3/4" flexible conduit, sealite	5.0	lf	1.20	6	145			32.60	163
	1" flexible conduit, sealite	10.0	lf	0.90	9	218			26.30	263
	2" flexible conduit, sealite	5.0	lf	1.80	9	218			54.20	271
	#10 -3/c PXMJ 600v P & C cable	100.0	lf	0.04	4	87			1.66	166
	#12 -4/c PXMJ 600v P & C cable	40.0	lf	0.08	3	73			2.75	110
	#2/0 -s/c PXJ-600v P & C cable	120.0	lf	0.08	9	221			3.74	449
	Cable Terminations	62.0	ea	0.40	25	600			10.88	682
	Bare copper wire stranded #2	50.0	lf	0.30	15	363			8.04	402
	Grnd,cdwl,#2 wire motr frame	4.0	ea	2.00	8	196			59.00	236
	1" FD outlet box	1.0	ea	0.67	1	16			26.00	26
	Ground fault indicating,15 amp	1.0	ea	1.00	1	24			64.00	64
	Cover plwthr proof nema 7-23	1.0	ea	1.00	1	24			43.00	43
	Safety hvy duty 600v 3p 60 a	1.0	ea	6.00	6	141			841.00	841
	Light fix 100mv, stanchion mtd	1.0	ea	4.00	4	97			447.00	447
	subtotal Z0 ELECTRICAL				148	3,529	12	0		5,464
Z1 HEAVY EQUIP										
	AirComp, 250cfm	1.0	ea				250		250.00	250
	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,SheepFl,Rex 3-50	1.0	ea				1,400		1400.00	1,400
	BkhdLdr, 1-1/4CYx17"x18"	2.0	ea				2,700		1350.00	2,700
	TrkDmp, 4x2, Platform	1.0	ea				1,500		1500.00	1,500

Loc	Description	Quantity	Unit	Material \$	M - H/Unit	Man - Hours	Labor \$	Eqpt/Othr \$	Subcontr \$	Unit Cost	Total Cost
	TrkDmp,6x4,12-14CY, OnRd	3.0	ea					4,050		1,350.00	4,050
	Trk, Fuel, 4x2	1.0	ea					750		750.00	750
	Sprnkr,6x4, 2,000 Gal	1.0	ea					900		900.00	900
	Cn,RghTrn,21-25Tn,SwCb	1.0	ea					1,800		1,800.00	1,800
	Cn,RghTrn,41-50Tn,SwCb	1.0	ea					1,500		1,500.00	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	20,670	0		20,670
	z1 TAGGED EQUIP										
	Air Hoist(Tugger)1000#	1.0	ea					750		750.00	750
	AirEqp,Jkhrm,to 70# paving blr	1.0	ea					200		200.00	200
	CmpEqp,Tamper,175lb,	2.0	ea					2,400		1,200.00	2,400
	Cncte bucket,laydown,1 C.Y.	1.0	ea					240		240.00	240
	Cncte,rtrzd,buggy,walk-behind	1.0	ea					1,365		1,365.00	1,365
	Bndr,hydr,ondt/pipe,to 2"	1.0	ea					585		585.00	585
	subtotal z1 TAGGED EQUIP			0		0	0	5,540	0		5,540
	Construction Facilities										
	Mobilization	1.0	WKS.		192.00	192	2,876	243		3,119.00	3,119
	Admin Time(Employee proc,etc.)	13.0	WKS.		9.00	117	2,442			187.85	2,442
	General Cleanup	13.0	WKS.		16.00	208	3,109	788		299.77	3,897
	Drinking Water	13.0	WKS.		8.00	104	1,741	1,438		244.54	3,179
	Hauling	13.0	WKS.		24.00	312	5,223	2,365		583.69	7,588
	Small Tool Dispense & Repair	4,427.0	str					3,010		0.68	3,010
	Portable Toilet Service	13.0	WKS					244		18.77	244
	Consumables & Expendables	4,427.0	celr					3,523		0.80	3,523
	Demobilization	1.0	WKS.		64.00	64	927	121		1048.00	1,048
	subtotal Construction Facilities			0		997	16,318	11,488	244		28,050

94336 (file 94336A2)
 TVA - FHP FHE ESTIMATING
 Phase II Approval
 rept:nl95

**KINGSTON FOSSIL PLANT
 COAL YARD RUNOFF POND
 .ALT 2 - TWO PUMPS & ONE PIPELINE.**

06 - Oct - 94
 02:13 PM
 ATTACHMENT 1

Loc	Description	Quantity	Unit	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcont \$\$	Unit Cost	Total Cost
	TOTAL DIRECT COST				4,427	83,221	43,291	244		388,899
	Non-Manual Labor									26,300
	Total Contingency									29,900
	Partner Expenses/Charges (64E)									15,800
										460,900
	TOTAL CONSTRUCTION									460,900
	LESS Engineered Materials - (Indicated by ><)								>	208,000 <
										252,900
	TOTAL CONTRACT CONSTRUCTION									252,900
	F&H Engineering - Phase 1									21,560
	F&H Engineering - Phase 2									1,870
	F&H Engineering - Phase 3									12,000
	Plant Overhead Charges for Procurement & Handling of Capital Materials									30,850
	Project Manager's Contingency									
	== TOTAL (PAB APPROVAL) COST ==									527,000

94336 (file 94336A3)

TVA - FHP FHE ESTIMATING

Phase II Approval
rept:n195

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
.ALT 3 - TWO PUMPS & TWO PIPELINE.**

06 - Oct - 94

02:16 PM

ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Cttr \$	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	810.0	cy		0.13	108	1,845			2.28	1,845
	Backfill for sump	470.0	cy		0.27	128	2,187			4.65	2,187
	Backfill 1" crushed stone	340.0	C.Y.		3.443	40	652			12.04	4,095
	Formwork for slab & walls sump	1,792.0	sft		3.665	358	6,327			5.58	9,992
	Reinforcing place walls, #3 #7	4.4	ton		2.160	70	1,531			838.86	3,691
	Pour concrete in place 3000psi	60.0	cy		3.900	160	2,610			108.50	6,510
	Welded shear conn 3/4"x4-3/16"	24.0	ea		24	18	394			17.42	418
	3"x3"x5/16 steel angle A36	10.0	lf		40	6	131			17.10	171
	Str stl w/10' - 45's, w 14 x 26	50.0	lf		638	32	672			26.20	1,310
	Steel Plates 3/4"x1'-2"	6.0	ea		150	16	341			81.83	491
	1 - 1/2"x 3/16" Galv bar grating	125.0	sf		1,500	6	129			13.03	1,629
	4" PVC pipe sch 40	10.0	lf		40	4	94			13.40	134
	subtotal COAL YARD SUMP			15,560		946	16,913	0	0		32,473
DX PUMPING ASSY											
	::Polypropylene Sump 10'diax16'h	1.0	ea	>	18,000	<	40.00			848	18,848
	::36" Polypropylene Suction pipe	1.0	ls	>	12,109	<	144.00			3,362	15,471
	::6" Vert Cant 40hp pump w/mtr	2.0	ea	>	145,009	<	48.00			2,236	147,245
	::Level control system	1.0	ea	>	3,000	<	24.00			580	3,580
	subtotal DX PUMPING ASSY				178,118		304	7,026	0		185,144
EARTHFILL											

94336 (file 94336A3)

TVA - FHP FHE ESTIMATING

Phase II Approval

rept:n195

KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 3 - TWO PUMPS & TWO PIPELINE.

06 - Oct - 94

02:16 PM

ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
	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
	1'GRS conduit w/fts & spts	80.0	ft	165	0.40	32	758	19		11.78	942
	subtotal EARTHFILL			2,235		87	1,728	19	0		3,982
	STNLS STL PIPE										
	Valve box 20"x14"x16"dp,plas	2.0	ea	400	16.00	32	776			588.00	1,176
	Valve box 20"x14"x6"dp,plas	2.0	ea	200	8.00	16	388			294.00	588
	10" SSteel 316 flange,150# SO	2.0	ea	1,400	6.00	12	289			844.50	1,689
	6" SSteel 316 flange,150# SO	2.0	ea	470	4.00	8	193			331.50	663
	6" SSteel 316 90deg sch 40	2.0	ea	750	9.00	18	434			592.00	1,184
	10" SSteel 316 45deg sch 40	4.0	ea	3,520	12.00	48	1,156			1,169.00	4,676
	10x6" SS 316 reducer sch 40	2.0	ea	1,200	12.00	24	578			889.00	1,778
	10" SSteel 316 pipe sch 40	20.0	ft	2,840	1.00	20	466			165.30	3,306
	1" SSteel 316 pipe sch 40	20.0	ft	140	0.40	8	193			16.65	333
	10"x1" socket 3000# 316 ss	2.0	ea	216	4.00	8	189			202.50	405
	1" socket 3000# 316ss 90deg	4.0	ea	200	4.00	16	378			144.50	578
	10"x1" treadolet 3000# 316 ss	2.0	ea	180	4.00	8	189			184.50	369
	1/2"plug hex head 316 ss	2.0	ea	30	1.00	2	47			38.50	77
	12" pipe sleeves A83 cs,coated	200.0	ft	9,600	0.56	112	2,698			61.49	12,298
	10" ss check valve 150# flngd	2.0	ea	12,600	24.00	48	1,164			6882.00	13,764
	1" ss gate valve 150#,threaded	2.0	ea	12,600	2.50	5	118			6359.00	12,718
	subtotal STNLS STL PIPE			46,346		385	9,256	0	0		55,602
	SUMP - ASH POND										
	Temporary dike @ coal yd sump	1.0	ls		160.00	160	2,454	562		3016.00	3,016
	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	8,400.0	ft	> 36,540	< 0.11	962	22,453			7.02	58,993
	:::10" Polyethylene Pipe fgs 90d	4.0	ea	> 678	< 4.50	18	432			277.50	1,110
	:::10" Polyethylene Pipe fgs 45d	10.0	ea	> 770	< 4.50	45	1,079			184.90	1,849

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcontr \$	Unit Cost	Total Cost
	:::10" Polyethylene Pipe flange	2.0 ea	>	194 <	4.50	9	216			205.00	410
	Rent polyethylene fusion welder	1.0 ls						5,000		5000.00	5,000
subtotal SUMP - ASH POND				41,564		1,858	37,034	5,562	0		84,160
Z0 ELECTRICAL											
	3/4"GRS conduit w/ftgs & sps	30.0 ft		52	0.72	22	517	7		19.20	576
	1-1/2"GRS conduit w/ftgs & sps	12.0 ft		35	0.80	10	230	1		22.17	266
	2" GRS conduit w/ftgs & sps	30.0 ft		116	0.50	15	359	4		15.97	479
	3/4"flexible conduit, sealite	5.0 ft		18	1.20	6	145			32.90	163
	1" flexible conduit, sealite	10.0 ft		45	0.90	9	218			26.30	263
	2" flexible conduit, sealite	5.0 ft		53	1.80	9	218			54.20	271
	#10 -3/c PXMJ 600v P & C cable	100.0 ft		79	0.04	4	87			1.86	186
	#12-4/c PXMJ 600v P & C cable	40.0 ft		37	0.08	3	73			2.75	110
	#2/0-s/c PXJ-600v P & C cable	120.0 ft		228	0.08	9	221			3.74	449
	Cable Terminations	62.0 ea		62	0.40	25	600			10.68	662
	Bare copper wire stranded #2	50.0 ft		39	0.30	15	363			8.04	402
	Grnd,cdfw,#2 wire molt frame	4.0 ea		40	2.00	8	196			59.00	236
	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
	Safety hvy duty 600v 3p 60 a	1.0 ea		700	6.00	6	141			841.00	841
	Light fix 100mv. stanchion mtd	1.0 ea		350	4.00	4	97			447.00	447
subtotal z0 ELECTRICAL				1,923		148	3,529	12	0		5,164
Z1 HEAVY EQUIP											
	AirComp, 201 -250cfm	1.0 ea						400		400.00	400
	Trac,Crawl,Meq,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
	CompctSheepFlt,Res 3-50	1.0 ea						4,200		4200.00	4,200
	Bkhol,dr, 1-1/4CYx17"x18"	2.0 ea						2,700		1350.00	2,700
	TrkDmp, 4x2, Platform	1.0 ea						1,500		1500.00	1,500
	TrkDmp,6x4,12-14CY, OnRd	3.0 ea						4,050		1350.00	4,050

94336 (file 94336A3)

TVA - FHP FHE ESTIMATING

Phase II Approval

rept:n195

KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND

.ALT 3 - TWO PUMPS & TWO PIPELINE.

06 - Oct - 94

02:16 PM

ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
	Trk. Fuel, 4x2	1.0 ea						750		750.00	750
	Sprnktr 6x4, 2,000 Gal	1.0 ea						900		900.00	900
	Cn.RghtTrn,21-25Trn,SwCb	1.0 ea						1,800		1800.00	1,800
	Cn.RghtTrn,41-50Trn,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	0	23,620	0	0	23,620
	z1 TAGGED EQUIP										
	Air Hoist(Tugger)1000#	1.0 ea						750		750.00	750
	AirEqp.,khrm.to 70# paving blr	1.0 ea						200		200.00	200
	CmpEqp.Tamper, 175lb.	2.0 ea						2,400		1200.00	2,400
	Cncte bucket,laydown,1 C.Y.	1.0 ea						240		240.00	240
	Cncte.mtrzd,buggy,walk-behind	1.0 ea						1,365		1365.00	1,365
	Bndr.hydrf,cndt/pipe to 2"	1.0 ea						585		585.00	585
	subtotal z1 TAGGED EQUIP			0	0	0	0	5,540	0	0	5,540
	Construction Facilities										
	Mobilization	1.0 WKS.			192.00	192	2,876	243		3119.00	3,119
	Admin Time(Employee proc,etc.)	13.0 WKS.			9.00	117	2,442			187.85	2,442
	General Cleanup	13.0 WKS.			16.00	208	3,109	788		299.77	3,897
	Drinking Water	13.0 WKS.			8.00	104	1,741	1,438		244.54	3,179
	Hauling	13.0 WKS.			24.00	312	5,223	2,365		583.69	7,588
	Small Tool Dispense & Repair	4,995.0 sthr						3,397		0.68	3,397
	Portable Toilet Service	13.0 WKS						244		18.77	244
	Consumables & Expendables	4,995.0 celt						3,987		0.80	3,987
	Demobilization	1.0 WKS.			64.00	64	927	121		1048.00	1,048
	subtotal Construction Facilities			0	997	16,318	12,339	244	0	0	28,901

94336 (file 94336A3)

TVA - FHP FHE ESTIMATING

Phase II Approval

rept:n195

**KINGSTON FOSSIL PLANT
 COAL YARD RUNOFF POND
 .ALT 3-TWO PUMPS & TWO PIPELINE.**

06-Oct-94

02:16 PM

ATTACHMENT 1

Loc	Description	Quantity	Unit	M-H/Unit	Man-Hours	Labor \$\$	Eqpy/Othr \$\$	Subcontn' \$\$	Unit Cost	Total Cost
	TOTAL DIRECT COST				4,995	96,521	47,091	244		429,599
	Non-Manual Labor									29,800
	Total Contingency									32,400
	Partner Expenses/Charges (84E)									18,400
	TOTAL CONSTRUCTION									510,200
	LESS Engineered Materials - (Indicated by ><)									
										227,000 <
	TOTAL CONTRACT CONSTRUCTION									283,200
	F&H Engineering - Phase 1									21,580
	F&H Engineering - Phase 2									1,670
	F&H Engineering - Phase 3									12,000
	Plant Overhead Charges for Procurement & Handling of Capital Materials									33,550
	Project Manager's Contingency									
	== TOTAL (PAB APPROVAL) COST ==									579,000

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

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcont \$	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	636.0	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
	Rip-up at 36" pipe inlet	50.0	cy	0.96		48	743	397		35.58	1,779
	8' long galv metal fence post	2.0	ea	20		4	53			36.50	73
	Wood Guard Post	4.0	ea	260		8	105			91.25	365
	Trtd Wood pole 6"x16lf,marker	2.0	ea	300		6	82			191.00	382
	subtotal COAL YARD SUMP			1,513		320	5,315	397	0		7,225
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		46	819			12.56	2,889
	subtotal EARTHFILL			2,070		55	970	0	0		3,040
PIPE TO ASHPOND											
	Temporary dike @ coal yd sump	1.0	ls	96.00		96	1,472	562		2,034.00	2,034
	Backfill sand around 10" pipe	620.0	cy	3,382		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	18,270	<	480	11,207			7.02	29,477
	:::10" Polyethylene Pipe figs 90d	2.0	ea	328	<	9	216			272.00	544
	:::10" Polyethylene Pipe figs 45d	5.0	ea	385	<	23	540			185.00	925

94336 (file 94336A4)

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

06-Oct-94
10:12 AM
ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcont# \$\$	Unit Cost	Total Cost
	::10' Polyethylene Pipe flange	1.0 ea	>	97 <	4.50	5	108			205.00	205
	Rent polyethylene fusion welder	1.0 ls						5,000		5000.00	5,000
	12" pipe sleeves, A53 cs, coated	100.0 lf		4,800	0.50	50	1,204			60.04	6,004
	subtotal PIPE TO ASHPOND			27,262		1,327	25,147	5,562	0		57,971
	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 18x36x3500lf	583.0 cy			0.15	87	1,353			2.32	1,353
	3" GRS conduit w/ffgs & spits	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 Vbrtr, plate, gas, 360lb	2.0 ea						420		210.00	420
	Bkhol, dr, 1CYx15'x18'(Eqpt Only	1.0 ea						800		800.00	800
	TrkDmp, 4x2, Platform	1.0 ea						250		250.00	250
	Crn, RghtTrn, 21 - 25Tn, SwCb	1.0 ea						900		900.00	900
	Small Tool Dispense & Repair	700.0 sthr						476		0.68	476
	Consumables & Expendables	700.0 cefr						560		0.80	560
	subtotal POWER SUPPLY			29,975		714	14,572	3,444	5,200		53,191
	PUMPING ASSY										
	::Polyethylene Sump 6'dx16'h w/c	1.0 ea	>	11,000 <	40.00	40	848			11848.00	11,848
	Reinforcing steel	250.0 lb		75	0.02	4	85			0.64	160
	Concrete base 6'x6'x2'	3.0 cy		180	2.52	8	100			93.33	280
	Filter Fabric (non-woven)	50.0 sf		25	0.04	2	28			1.06	53
	36" Polyethylene Suction pipe	50.0 lf		1,200	1.33	67	1,553			55.06	2,753
	36" Polyethylene couplings	4.0 ea		112	6.00	24	582			173.50	694
	24" Polyethylene Suction pipe	40.0 lf		760	1.00	40	932			42.30	1,692
	24" Polyethylene coupling	2.0 ea		38	8.00	16	373			205.50	411
	::Ssbmrsbl 40hp pmp w/slide rail	1.0 ea	>	24,341 <	64.00	64	1,491			25832.00	25,832
	::Level control system	1.0 ea	>	3,000 <	24.00	24	580			3580.00	3,580

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

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcontr \$	Unit Cost	Total Cost
	subtotal PUMPING ASSY			40,731		289	6,572	0	0		47,303
	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	3.0 lf		852	1.00	3	70			307.33	922
	1/2" plug hex head 316 ss	1.0 ea		15	1.00	1	24			39.00	39
	Threadolet 6" run x 1/2" outlet	1.0 ea		15	4.00	4	94			109.00	109
	subtotal STNLS STL PIPE			3,853		57	1,375	0	0		5,228
	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 mtd	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 ctr/disc)	1.0 ea		130	8.00	8	193			323.00	323
	3/4" GRS conduit w/ftgs & spts	30.0 lf		52	0.72	22	517		7	19.20	576
	1" GRS conduit w/ftgs & spts	80.0 lf		165	0.40	32	758		19	11.78	942
	2" GRS conduit w/ftgs & 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

94336.(file 94336A4)

TVA - FHP FHE ESTIMATING

Phase II Approval

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

06-Oct-94

10:12 AM

ATTACHMENT 1

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	lf	871	0.08	34	830			3.78	1,701
	Cable Terminations	68.0	ea	68	0.40	27	658			10.88	728
	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 mob 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		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
	Bkhol,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
	Sprinkl,6x4, 2,000 Gal	1.0	ea					900		900.00	900
	Crn,RghtTrn,21-25Tn,SwCb	1.0	ea					1,800		1800.00	1,800
	Crn,RghtTrn,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		19,195
	Z1 TAGGED EQUIP										
	Air Hoist(Tugger)1000#	1.0	ea					750		750.00	750
	AirEqp, Jkhamr, to 70# paving blk	2.0	ea					240		120.00	240

94336 (file 94336A4)

TVA - FHP FHE ESTIMATING

Phase II Approval
rept:n195

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

06-Oct-94

10:12 AM

ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$	M-H/Unit	Man-Hours	Labor \$	Eqpt/Othr \$	Subcont \$	Unit Cost	Total Cost
	Cmp/Eqp,Tamper,175lb,	2.0	ea					2,400		1200.00	2,400
	Bndr,hydr,cndt/pipe,10 2"	1.0	ea					585		585.00	585
subtotal z1 TAGGED EQUIP				0	0	0	0	3,975	0	0	3,975
Construction Facilities											
	Mobilization	1.0	WKS.		192.00	192	2,876	243		3119.00	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	str					2,087		0.68	2,087
	Portable Toilet Service	7.0	WKS						131	18.71	131
	Consumables & Expendables	3,070.0	cefr					2,515		0.82	2,515
	Demobilization	1.0	WKS.		64.00	64	927	121		1048.00	1,048
subtotal Construction Facilities				0	0	641	10,288	7,437	131	0	17,836

94336 (file 94336A4)

TVA - FHP FHE ESTIMATING

Phase II Approval
rept:n195

KINGSTON FOSSIL PLANT

COAL YARD RUNOFF POND - ALT 4

ONE SUBMERSIBLE PUMP & ONE PIPE

06-Oct-94

10:12 AM

ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Chrg \$\$	Subcont \$	Unit Cost	Total Cost
	TOTAL DIRECT COST			110,239		3,960	75,852	40,039	5,331		231,461
	Non-Manual Labor										19,800
	Total Contingency										9,579
	Partner Expenses/Charges (84E)										14,200
	TOTAL CONSTRUCTION										275,040
	LESS Engineered Materials - (Indicated by ><)										60,300 <
											>
	TOTAL CONTRACT CONSTRUCTION										214,740
	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										16,210
	Project Manager's Contingency										
	= TOTAL (PAB APPROVAL) COST =										320,000

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
SCOPE OF WORK

PROJECT DESCRIPTION

This project is for the cost to replace the existing coal yard runoff pond pumps, piping and remove the existing pumphouse and platform. Three alternate pump and pipeline configurations were estimated: Alternate 1 - One pump and one discharge pipeline to ash pond; Alternate 2 - two pumps and one discharge pipeline to ash pond; Alternate 3 - Two pumps and two discharge pipelines to ash pond. Alternate 4 - one submersible pump and one discharge pipeline to ash pond. A new power supply was estimated in Alternate 4. No phase I cost is included in estimate.

CIVIL SITE

Earthfill in low areas and place crushed stone surface on roadway where required.

Provide for grading of new areas, including area and roadway around pumphouse.

Perform a field survey in the area to obtain recent topographical data.

Remove the existing pumphouse and piping platform.

STRUCTURAL

Provide design calculations and a drawing for a concrete enclosure and base slab in the ground for the polyethylene tank support. The tank is for the coal yard drainage sump.

Provide design calculations and a drawing for the pump support and access platform.

MECHANICAL

Provide a new sump and pumping unit complete with control panel. The pump will be rated at 1500 gpm at 65 feet head. Pump material will be stainless steel. The sump and sump suction piping will be acid resistant polyethylene.

Provide the level control system complete with a beacon strobe light at the high level alarm. Alarm will only be local.

Provide a discharge polyethylene pipe line (see the alternates 1, 2 & 3 listed above). The discharge piping will terminate at the ash pond drainage ditch.

Provide specifications and contract administration for procurement of pumps, sump tank and sump suction piping.

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
SCOPE OF WORK

Prepare pump head calculations based on a land survey to be conducted during phase 2.

Prepare new CAD drawings.

ELECTRICAL

The pumps will be powered from the 480v Feeder Board in Hopper Building 2, as the existing sump pumps.

Provide a new underground conduit and cable from shed to new pumps.

Splice onto existing power and control cables at the shed that houses the existing coal yard runoff pond sump pump motors (Alternates 1-3). Alternate 4 will use a new power supply.

Install one disconnect switch for new pumps.

Install a new 480V to 120V mini power zone for lighting.

Install one 120v GFI receptacle with weatherproof cover at new pump area.

Alternate 4 only

Provide a new 6" submersible pump with slide rails for a quick disconnect, elbow and lift cables.

A new 300 MCM cable will be installed underground from the Hopper Building 2 to the coal yard runoff pond.

The cost for a spare pump is \$17,584.

ASSUMPTIONS

No change in horse power for the sump pumps motors (one of which will be a backup pump), currently assumed to be 40hp each.

No detail routing drawing of the 10 inch polyethylene pipe from sump to ash pond will be provided. Routing will be by field.

No detail routing drawing of the 300 MCM from sump to Hopper Building will be provided. Routing will be by field.

EXCLUSIONS AND/OR CONSTRAINTS

The disposal of the old pump, pumphouse and electrical will be in full compliance of the TVA and the state of Tennessee regulations.

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
SCOPE OF WORK

MATERIALS

Primary Price Quotes:

- 10" polyethylene piping, fittings and rental of fusion machine - Fluid Controls, Inc.
- 36" polypropylene suction pipe - Irrigation Supply Co., Inc.
- 6" Vertical cantilever sump pump - Nagle Pumps, Inc.
- 6" submersible sump pump - Nagle Pump, Inc.
- 10' dia x 16' tall; black polypropylene sump - Plastico of Memphis
- 10" stainless steel valve, telephone quote - Piping Supply of Chattanooga.
- 300 MCM direct buried cable, Diversified Supply, Inc.

SCHEDULE NOTES

Work to be performed during outage schedule: YES___ No x

Work Schedule/Overtime:

x Other work schedule: 8-hr/day, 5 days/week, with causal overtime

All costs are escalated as appropriate unless otherwise noted.

- Material - 3%
- Labor - 3.4%
- Equipment - 5%

REFERENCES

Information provided by:

- Civil Site Engineering
- Mechanical Auxiliaries Engineering
- Electrical Engineering

ESTIMATE PREPARED BY

Larry Kesterson, 2663-C

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Engineered Materials				
Instrumentation				
Level control system	1 ea	1 ea	3000.00	3,000
subtotal Instrumentation				3,000
Pipe/Tubing				
10" Polyethylene Pipe SDR 19	4,200 lf	4,200 lf	4.35	18,270
Polypropylene Sump 10'diax16'h	1 ea	1 ea	18000.00	18,000
36" Polypropylene Suction pipe	1 ls	1 ls	12109.00	12,109
subtotal Pipe/Tubing				48,379
Pipe/Tubing Fittings				
10" Polyethylene Pipe flange	1 ea	1 ea	97.00	97
10" Polyethylene Pipe ftgs 45d	5 ea	5 ea	77.00	385
10" Polyethylene Pipe ftgs 90d	2 ea	2 ea	169.47	339
10" Polyethylene Pipe ftgs WYE	1 ea	1 ea	295.41	295
subtotal Pipe/Tubing Fittings				1,116
Pumps				
6" Vert Cant 40hp pump w/mtr	1 ea	1 ea	72504.50	72,505
subtotal Pumps				72,505
Subtotal Engineered Materials				125,000
Materials				
Unassigned Class				
Backfill sand around 10" pipe	620 cy	620 tn	5.45	3,382
Cover plwthr proof nema 7-23	1 ea	1 ea	19.00	19
subtotal Unassigned Class				3,401
Cable				
#10 -3/c PXMJ 600v P & C cable	100 lf	110 lf	.72	79
#12-4/c PXMJ 600v P & C cable	40 lf	44 lf	.83	37
#2/0-s/c PXJ-600v P & C cable	120 lf	132 lf	1.73	228
Cable Terminations	62 ea	62 ea	1.00	62
subtotal Cable				406

94336.(file 94336A1)
 TVA - FHP FHE ESTIMATING
 rept:b2

Estimating Bill of Material
 KINGSTON FOSSIL PLANT
 COAL YARD RUNOFF POND
 .ALT 1-ONE PUMPS & ONE PIPELINE.

ATTACHMENT 3
 Page 2

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Concrete				
Pour concrete in place 3000psi	60 cy	60 cy	65.00	3,900
		subtotal Concrete		3,900
Conduit				
1"GRS conduit w/ftgs & spts	80 lf	80 lf	2.06	165
1-1/2"GRSconduit w/ftgs & spts	12 lf	12 lf	2.92	35
2" GRS conduit w/ftgs & spts	30 lf	30 lf	3.86	116
3/4"GRS conduit w/ftgs & spts	30 lf	30 lf	1.73	52
1" flexible conduit, sealtite	10 lf	10 lf	4.50	45
2" flexible conduit, sealtite	5 lf	5 lf	10.50	53
3/4"flexible conduit, sealtite	5 lf	5 lf	3.50	18
		subtotal Conduit		484
Earth, Sand, Stone				
Crushed Stone Pmp House Area	230 tn	230 tn	9.00	2,070
Backfill 1" crushed stone	340 C.Y.	340 tn	10.13	3,443
		subtotal Earth, Sand, Stone		5,513
Formwork				
Formwork for slab & walls sump	1,792 sfca	1,792 sfca	2.05	3,665
		subtotal Formwork		3,665
Grounding				
Bare copper wire stranded #2	50 lf	60 lf	.65	39
Grnd,cdwl,#2 wire motr frame	4 ea	4 ea	10.00	40
		subtotal Grounding		79
Ltg Fixtures/Devices				
Light fix,100mv, stanchion mtd	1 ea	1 ea	350.00	350
		subtotal Ltg Fixtures/Devices		350
Misc Steel				
Welded shear conn 3/4"x4-3/16"	24 ea	24 ea	1.00	24
Steel Plates 3/4"x1'x1'-2"	6 ea	6 ea	25.00	150

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
=====	=====	=====	=====	=====
Materials				
Misc Steel				con
-----				con
		subtotal Misc Steel	-----	174
Pipe/Tubing				

4" PVC pipe sch 40	10 lf	10 lf	4.00	40
1" SSteel 316 pipe sch 40	10 lf	10 lf	7.00	70
1" sockolet 3000# 316ss 90deg	2 ea	2 ea	50.00	100
1/2"plug hex head 316 ss	1 ea	1 ea	15.00	15
10" SSteel 316 45deg sch 40	2 ea	2 ea	880.00	1,760
10" SSteel 316 flange,150# S0	1 ea	1 ea	700.00	700
10" SSteel 316 pipe sch 40	10 lf	10 lf	142.00	1,420
10"x1" sockolet 3000# 316 ss	1 ea	1 ea	108.00	108
10"x1" threadolet 3000# 316 ss	1 ea	1 ea	90.00	90
10x6" SS 316 reducer sch 40	1 ea	1 ea	600.00	600
6" SSteel 316 90deg sch 40	1 ea	1 ea	375.00	375
6" SSteel 316 flange,150# S0	1 ea	1 ea	235.00	235
12" pipe sleeves,A53 cs,coated	100 lf	100 lf	48.00	4,800
		subtotal Pipe/Tubing	-----	10,313
Reinforcing Steel				

Reinforcing place walls, #3 #7	4 ton	4 ton	540.10	2,160
		subtotal Reinforcing Steel	-----	2,160
Specialties				

Valve box 20"x14"x16"dp,plas	1 ea	1 ea	200.00	200
Valve box 20"x14"x6"dp,plas	1 ea	1 ea	100.00	100
		subtotal Specialties	-----	300
Structural Steel				

3"x3"x5/16 steel angle A36	10 lf	10 lf	4.00	40
Str stl,wf,10'- 45's,w 14 x 26	50 lf	50 lf	12.76	638
1-1/2"x 3/16"Galv bar grating	125 sf	125 sf	12.00	1,500
		subtotal Structural Steel	-----	2,178

94336.(file 94336A1)
 TVA - FHP FHE ESTIMATING
 rept:b2

Estimating Bill of Material
 . KINGSTON FOSSIL PLANT .
 . COAL YARD RUNOFF POND .
 .ALT 1-ONE PUMPS & ONE PIPELINE.

Description =====	Takeoff Quantity =====	Order Quantity =====	Unit Price =====	Amount =====
Materials				
con				
Switchgear & MCC's				

Safety hvy duty 600v 3p 60 a	1 ea	1 ea	700.00	700

		subtotal Switchgear & MCC's		700
Valves				

1" ss gate valve 150#, threaded	1 ea	1 ea	6300.00	6,300
10" ss check valve 150#, flngd	1 ea	1 ea	6300.00	6,300

		subtotal Valves		12,600
Wiring Devices				

1" FD outlet box	1 ea	1 ea	10.00	10
Ground fault indicating, 15 amp	1 ea	1 ea	40.00	40

		subtotal Wiring Devices		50
		Subtotal Materials		-----
				46,273
		TOTAL MATERIALS		-----
				171,273

94336.(file 94336A2)
TVA - FHP FHE ESTIMATING
rept:b2

Estimating Bill of Material
. KINGSTON FOSSIL PLANT .
. COAL YARD RUNOFF POND .
.ALT 2-TWO PUMPS & ONE PIPELINE.

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Engineered Materials				
Instrumentation				
Level control system	1 ea	1 ea	3000.00	3,000
			subtotal Instrumentation	3,000
Pipe/Tubing				
10" Polyethylene Pipe SDR 19	4,200 lf	4,200 lf	4.35	18,270
Polypropylene Sump 10'diax16'h	1 ea	1 ea	18000.00	18,000
36" Polypropylene Suction pipe	1 ls	1 ls	12109.00	12,109
			subtotal Pipe/Tubing	48,379
Pipe/Tubing Fittings				
10" Polyethylene Pipe flange	1 ea	1 ea	97.00	97
10" Polyethylene Pipe ftgs 45d	5 ea	5 ea	77.00	385
10" Polyethylene Pipe ftgs 90d	2 ea	2 ea	169.47	339
10" Polyethylene Pipe ftgs WYE	1 ea	1 ea	291.00	291
			subtotal Pipe/Tubing Fittings	1,112
Pumps				
6" Vert Cant 40hp pump w/mtr	2 ea	2 ea	72504.50	145,009
			subtotal Pumps	145,009
			Subtotal Engineered Materials	197,500
Materials				
Unassigned Class				
Backfill sand around 10" pipe	620 cy	620 tn	5.45	3,382
Cover plwthr proof nema 7-23	1 ea	1 ea	19.00	19
			subtotal Unassigned Class	3,401
Cable				
#10 -3/c PXMJ 600v P & C cable	100 lf	110 lf	.72	79
#12-4/c PXMJ 600v P & C cable	40 lf	44 lf	.83	37
#2/0-s/c PXJ-600v P & C cable	120 lf	132 lf	1.73	228
Cable Terminations	62 ea	62 ea	1.00	62
			subtotal Cable	406

94336.(file 94336A2)
TVA - FHP FHE ESTIMATING
rept:b2

Estimating Bill of Material
. KINGSTON FOSSIL PLANT .
. COAL YARD RUNOFF POND .
.ALT 2-TWO PUMPS & ONE PIPELINE.

ATTACHMENT 3
Page 2

Description =====	Takeoff Quantity =====	Order Quantity =====	Unit Price =====	Amount =====
Materials				
Concrete				
Pour concrete in place 3000psi	60 cy	60 cy	65.00	3,900
subtotal Concrete				3,900
Conduit				
1"GRS conduit w/ftgs & spts	80 lf	80 lf	2.06	165
1-1/2"GRSconduit w/ftgs & spts	12 lf	12 lf	2.92	35
2" GRS conduit w/ftgs & spts	30 lf	30 lf	3.86	116
3/4"GRS conduit w/ftgs & spts	30 lf	30 lf	1.73	52
1" flexible conduit, sealtite	10 lf	10 lf	4.50	45
2" flexible conduit,sealtite	5 lf	5 lf	10.50	53
3/4"flexible conduit, sealtite	5 lf	5 lf	3.50	18
subtotal Conduit				484
Earth, Sand, Stone				
Crushed Stone Pmp House Area	230 tn	230 tn	9.00	2,070
Backfill 1" crushed stone	340 C.Y.	340 tn	10.13	3,443
subtotal Earth, Sand, Stone				5,513
Formwork				
Formwork for slab & walls sump	1,792 sfca	1,792 sfca	2.05	3,665
subtotal Formwork				3,665
Grounding				
Bare copper wire stranded #2	50 lf	60 lf	.65	39
Grnd,cdwl,#2 wire motr frame	4 ea	4 ea	10.00	40
subtotal Grounding				79
Ltg Fixtures/Devices				
Light fix 100mv, stanchion mtd	1 ea	1 ea	350.00	350
subtotal Ltg Fixtures/Devices				350
Misc Steel				
Welded shear conn 3/4"x4-3/16"	24 ea	24 ea	1.00	24
Steel Plates 3/4"x1'x1'-2"	6 ea	6 ea	25.00	150

94336.(file 94336A2)
TVA - FHP FHE ESTIMATING
rept:b2

Estimating Bill of Material
. KINGSTON FOSSIL PLANT .
. COAL YARD RUNOFF POND .
.ALT 2-TWO PUMPS & ONE PIPELINE.

ATTACHMENT 3
Page 3

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Misc Steel				con
-----				con
		subtotal Misc Steel	-----	174
Pipe/Tubing				

4" PVC pipe sch 40	10 lf	10 lf	4.00	40
1" SSteel 316 pipe sch 40	20 lf	20 lf	7.00	140
1" sockolet 3000# 316ss 90deg	4 ea	4 ea	50.00	200
1/2"plug hex head 316 ss	2 ea	2 ea	15.00	30
10" SSteel 316 45deg sch 40	4 ea	4 ea	880.00	3,520
10" SSteel 316 flange,150# SO	2 ea	2 ea	700.00	1,400
10" SSteel 316 pipe sch 40	20 lf	20 lf	142.00	2,840
10"x1" sockolet 3000# 316 ss	2 ea	2 ea	108.00	216
10"x1" threadolet 3000# 316 ss	2 ea	2 ea	90.00	180
10x6" SS 316 reducer sch 40	2 ea	2 ea	600.00	1,200
6" SSteel 316 90deg sch 40	2 ea	2 ea	375.00	750
6" SSteel 316 flange,150# SO	2 ea	2 ea	235.00	470
12" pipe sleeves,A53 cs,coated	100 lf	100 lf	48.00	4,800
		subtotal Pipe/Tubing	-----	15,786
Reinforcing Steel				

Reinforcing place walls, #3 #7	4 ton	4 ton	540.10	2,160
		subtotal Reinforcing Steel	-----	2,160
Specialties				

Valve box 20"x14"x16"dp,plas	2 ea	2 ea	200.00	400
Valve box 20"x14"x6"dp,plas	2 ea	2 ea	100.00	200
		subtotal Specialties	-----	600
Structural Steel				

3"x3"x5/16 steel angle A36	10 lf	10 lf	4.00	40
Str stl,wf,10'- 45's,w 14 x 26	50 lf	50 lf	12.76	638
1-1/2"x 3/16"Galv bar grating	125 sf	125 sf	12.00	1,500
		subtotal Structural Steel	-----	2,178

94336.(file 94336A2)
 TVA - FHP FHE ESTIMATING
 rept:b2

Estimating Bill of Material
 . KINGSTON FOSSIL PLANT .
 . COAL YARD RUNOFF POND .
 .ALT 2-TWO PUMPS & ONE PIPELINE.

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Switchgear & MCC's				
Safety hvy duty 600v 3p 60 a	1 ea	1 ea	700.00	700
		subtotal Switchgear & MCC's		700
Valves				
1" ss gate valve 150#, threaded	2 ea	2 ea	6300.00	12,600
10" ss check valve 150#, flngd	2 ea	2 ea	6300.00	12,600
		subtotal Valves		25,200
Wiring Devices				
1" FD outlet box	1 ea	1 ea	10.00	10
Ground fault indicating, 15 amp	1 ea	1 ea	40.00	40
		subtotal Wiring Devices		50
		Subtotal Materials		64,646
		TOTAL MATERIALS		262,146

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Engineered Materials				
Instrumentation				
Level control system	1 ea	1 ea	3000.00	3,000
			subtotal Instrumentation	3,000
Pipe/Tubing				
10" Polyethylene Pipe SDR 19	8,400 lf	8,400 lf	4.35	36,540
Polypropylene Sump 10'diax16'h	1 ea	1 ea	18000.00	18,000
36" Polypropylene Suction pipe	1 ls	1 ls	12109.00	12,109
			subtotal Pipe/Tubing	66,649
Pipe/Tubing Fittings				
10" Polyethylene Pipe flange	2 ea	2 ea	97.00	194
10" Polyethylene Pipe ftgs 45d	10 ea	10 ea	77.00	770
10" Polyethylene Pipe ftgs 90d	4 ea	4 ea	169.47	678
			subtotal Pipe/Tubing Fittings	1,642
Pumps				
6" Vert Cant 40hp pump w/mtr	2 ea	2 ea	72504.50	145,009
			subtotal Pumps	145,009
			Subtotal Engineered Materials	216,300
Materials				
Unassigned Class				
Backfill sand around 10" pipe	620 cy	620 tn	5.45	3,382
Cover plwthr proof nema 7-23	1 ea	1 ea	19.00	19
			subtotal Unassigned Class	3,401
Cable				
#10 -3/c PXMJ 600v P & C cable	100 lf	110 lf	.72	79
#12-4/c PXMJ 600v P & C cable	40 lf	44 lf	.83	37
#2/0-s/c PXJ-600v P & C cable	120 lf	132 lf	1.73	228
Cable Terminations	62 ea	62 ea	1.00	62
			subtotal Cable	406

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Concrete				
Pour concrete in place 3000psi	60 cy	60 cy	65.00	3,900
		subtotal Concrete		3,900
Conduit				
1"GRS conduit w/ftgs & spts	80 lf	80 lf	2.06	165
1-1/2"GRSconduit w/ftgs & spts	12 lf	12 lf	2.92	35
2" GRS conduit w/ftgs & spts	30 lf	30 lf	3.86	116
3/4"GRS conduit w/ftgs & spts	30 lf	30 lf	1.73	52
1" flexible conduit, sealtite	10 lf	10 lf	4.50	45
2" flexible conduit,sealtite	5 lf	5 lf	10.50	53
3/4"flexible conduit, sealtite	5 lf	5 lf	3.50	18
		subtotal Conduit		484
Earth, Sand, Stone				
Crushed Stone Pmp House Area	230 tn	230 tn	9.00	2,070
Backfill 1" crushed stone	340 C.Y.	340 tn	10.13	3,443
		subtotal Earth, Sand, Stone		5,513
Formwork				
Formwork for slab & walls sump	1,792 sfca	1,792 sfca	2.05	3,665
		subtotal Formwork		3,665
Grounding				
Bare copper wire stranded #2	50 lf	60 lf	.65	39
Grnd,cdwl,#2 wire motr frame	4 ea	4 ea	10.00	40
		subtotal Grounding		79
Ltg Fixtures/Devices				
Light fix 100mv, stanchion mtd	1 ea	1 ea	350.00	350
		subtotal Ltg Fixtures/Devices		350
Misc Steel				
Welded shear conn 3/4"x4-3/16"	24 ea	24 ea	1.00	24
Steel Plates 3/4"x1'x1'-2"	6 ea	6 ea	25.00	150

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
=====	=====	=====	=====	=====
Materials				
Misc Steel				con
-----				con
		subtotal Misc Steel	-----	174
Pipe/Tubing				

4" PVC pipe sch 40	10 lf	10 lf	4.00	40
1" SSteel 316 pipe sch 40	20 lf	20 lf	7.00	140
1" sockolet 3000# 316ss 90deg	4 ea	4 ea	50.00	200
1/2"plug hex head 316 ss	2 ea	2 ea	15.00	30
10" SSteel 316 45deg sch 40	4 ea	4 ea	880.00	3,520
10" SSteel 316 flange,150# S0	2 ea	2 ea	700.00	1,400
10" SSteel 316 pipe sch 40	20 lf	20 lf	142.00	2,840
10"x1" sockolet 3000# 316 ss	2 ea	2 ea	108.00	216
10"x1" threadolet 3000# 316 ss	2 ea	2 ea	90.00	180
10x6" SS 316 reducer sch 40	2 ea	2 ea	600.00	1,200
6" SSteel 316 90deg sch 40	2 ea	2 ea	375.00	750
6" SSteel 316 flange,150# S0	2 ea	2 ea	235.00	470
12" pipe sleeves,A53 cs,coated	200 lf	200 lf	48.00	9,600
		subtotal Pipe/Tubing	-----	20,586
Reinforcing Steel				

Reinforcing place walls, #3 #7	4 ton	4 ton	540.10	2,160
		subtotal Reinforcing Steel	-----	2,160
Specialties				

Valve box 20"x14"x16"dp,plas	2 ea	2 ea	200.00	400
Valve box 20"x14"x6"dp,plas	2 ea	2 ea	100.00	200
		subtotal Specialties	-----	600
Structural Steel				

3"x3"x5/16 steel angle A36	10 lf	10 lf	4.00	40
Str stl,wf,10'- 45's,w 14 x 26	50 lf	50 lf	12.76	638
1-1/2"x 3/16"Galv bar grating	125 sf	125 sf	12.00	1,500
		subtotal Structural Steel	-----	2,178

94336.(file 94336A3)
TVA - FHP FHE ESTIMATING
rept:b2

Estimating Bill of Material
. KINGSTON FOSSIL PLANT .
. COAL YARD RUNOFF POND .
.ALT 3-TWO PUMPS & TWO PIPELINE.

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Switchgear & MCC's				
Safety hvy duty 600v 3p 60 a	1 ea	1 ea	700.00	700
		subtotal Switchgear & MCC's		700
Valves				
1" ss gate valve 150#, threaded	2 ea	2 ea	6300.00	12,600
10" ss check valve 150#, flngd	2 ea	2 ea	6300.00	12,600
		subtotal Valves		25,200
Wiring Devices				
1" FD outlet box	1 ea	1 ea	10.00	10
Ground fault indicating, 15 amp	1 ea	1 ea	40.00	40
		subtotal Wiring Devices		50
		Subtotal Materials		69,446
		TOTAL MATERIALS		285,746

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Engineered Materials				
Instrumentation				
Level control system	1 ea	1 ea	3000.00	3,000
subtotal Instrumentation				3,000
Pipe/Tubing				
10" Polyethylene Pipe SDR 19	4,200 lf	4,200 lf	4.35	18,270
Polyethylene Sump 6'dx16'h w/c	1 ea	1 ea	11000.00	11,000
subtotal Pipe/Tubing				29,270
Pipe/Tubing Fittings				
10" Polyethylene Pipe flange	1 ea	1 ea	97.00	97
10" Polyethylene Pipe ftgs 45d	5 ea	5 ea	77.00	385
10" Polyethylene Pipe ftgs 90d	2 ea	2 ea	163.97	328
subtotal Pipe/Tubing Fittings				810
Pumps				
6sbmrsbl 40hp pmp w/slide rail	1 ea	1 ea	24341.00	24,341
subtotal Pumps				24,341
Subtotal Engineered Materials				57,421
Materials				
Unassigned Class				
Backfill sand around 10" pipe	620 cy	620 tn	5.45	3,382
Cover plwthr proof nema 7-23	1 ea	1 ea	19.00	19
subtotal Unassigned Class				3,401
Cable				
#10 -3/c PXMJ 600v P & C cable	100 lf	110 lf	.72	79
#12-4/c PXMJ 600v P & C cable	40 lf	44 lf	.83	37
#12-s/cTHHN/THWN lighting wire	100 lf	110 lf	.10	11
#2/0-s/c PXJ-600v P & C cable	450 lf	504 lf	1.73	871
#300 mcm s/c underground cable	9,900 lf	10,989 lf	2.40	26,374
Cable Terminations	68 ea	68 ea	1.00	68
#300 mcm splices underground	9 ea	9 ea	100.00	900
subtotal Cable				28,340

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Concrete				
Concrete base 6'x6'x2'	3 cy	3 cy	60.00	180
subtotal Concrete				180
Conduit				
1"GRS conduit w/ftgs & spts	80 lf	80 lf	2.06	165
1-1/2"GRSconduit for stanchion	12 lf	12 lf	2.92	35
2" GRS conduit w/ftgs & spts	30 lf	30 lf	3.86	116
3" GRS conduit w/ftgs & spts	200 lf	200 lf	8.22	1,643
3/4"GRS conduit w/ftgs & spts	30 lf	30 lf	1.73	52
Conduit trench,galv steel,3/4	20 lf	20 lf	3.55	71
1" flexible conduit, sealtite	10 lf	10 lf	4.50	45
2" flexible conduit,sealtite	5 lf	5 lf	10.50	53
3/4"flexible conduit, sealtite	5 lf	5 lf	3.50	18
Junction Box NEMA4,30"-30"- 8"	1 ea	1 ea	500.00	500
subtotal Conduit				2,698
Earth, Sand, Stone				
Backfill sand over cable	194 cy	194 tn	5.45	1,058
Crushed Stone Pmp House Area	230 tn	230 tn	9.00	2,070
Backfill 1" crushed stone	29 C.Y.	29 tn	10.13	294
Rip-rap at 36" pipe inlet	50 cy	50 tn	12.78	639
Filter Fabric (non-woven)	50 sf	50 sf	.50	25
subtotal Earth, Sand, Stone				4,086
Fencing				
8' long galv metal fence post	2 ea	2 ea	10.00	20
Wood Guard Post	4 ea	4 ea	65.00	260
subtotal Fencing				280
Grounding				
3/4" ground rod at sump	2 ea	2 ea	25.07	50
Bare copper wire stranded #2	100 lf	120 lf	.65	78
Grnd,cdwl,#2 wire motr frame	4 ea	4 ea	10.00	40
subtotal Grounding				168

Description	Takeoff Quantity	Order Quantity	Unit Price	Amount
Materials				
Ltg Fixtures/Devices				
Light fix 100mv, stanchion mtd	1 ea	1 ea	350.00	350
			subtotal Ltg Fixtures/Devices	350
Lumber				
Trtd Wood pole 6"x16lf, marker	2 ea	2 ea	150.00	300
			subtotal Lumber	300
Misc Steel				
Elec Equip Rack(Pmp ctrl, disc)	1 ea	1 ea	130.00	130
			subtotal Misc Steel	130
Pipe/Tubing				
24" Polyethylene Suction pipe	40 lf	40 lf	19.00	760
24" Polyethylene coupling	2 ea	2 ea	19.00	38
36" Polyethylene Suction pipe	50 lf	60 lf	20.00	1,200
6" dia SSteel, 316 pipe sch 40	14 lf	20 lf	53.05	1,061
1/2" plug hex head 316 ss	1 ea	1 ea	15.00	15
10" SSteel 316 flange, 150# S0	1 ea	1 ea	700.00	700
10" SSteel 316 pipe sch 40	3 lf	3 lf	284.00	852
10x6" SS 316 reducer sch 40	1 ea	1 ea	600.00	600
6" SSteel 316 90deg sch 40	1 ea	1 ea	375.00	375
6" SSteel 316 flange, 150# S0	1 ea	1 ea	235.00	235
Threadolet 6" run x 1/2" outlet	1 ea	1 ea	15.00	15
12" pipe sleeves, A53 cs, coated	100 lf	100 lf	48.00	4,800
			subtotal Pipe/Tubing	10,651
Pipe/Tubing Fittings				
36" Polyethylene couplings	4 ea	4 ea	28.00	112
			subtotal Pipe/Tubing Fittings	112
Reinforcing Steel				
Reinforcing steel	250 lb	250 lb	.30	75
			subtotal Reinforcing Steel	75

Estimating Bill of Material
KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND - ALT 4
ONE SUBMERSIBLE PUMP & ONE PIPE

Description =====	Takeoff Quantity =====	Order Quantity =====	Unit Price =====	Amount =====
Materials				
con				
Switchgear & MCC's				

Safety hvy duty 600v 3p 60 a	1 ea	1 ea	700.00	700

		subtotal Switchgear & MCC's		700
Transformers				

Mini Pwr-zone pwr fed120v,5kva	1 ea	1 ea	1300.00	1,300

		subtotal Transformers		1,300
Wiring Devices				

1" FD outlet box	1 ea	1 ea	10.00	10
Ground fault indicating,15 amp	1 ea	1 ea	40.00	40

		subtotal Wiring Devices		50
		Subtotal Materials		-----
				52,821
		TOTAL MATERIALS		-----
				110,242

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
ALT 1 - ONE PUMP & ONE PIPELINE
Cash Flow**

	<u>Prior Years</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Ensuing Years</u>	<u>Total</u>
PHASE I						
Engineering	\$0	\$0	\$0	\$0	\$0	\$0
TVA - Other Costs	0	0	0	0	0	0
Total Phase I	\$0	\$0	\$0	\$0	\$0	\$0

PHASE II						
Engineering	\$0	\$0	\$21,580	\$0	\$0	\$21,580
Long Lead Procurements(Incl. Cntgcy)	0	0	131,000	0	0	131,000
Partner (Non-Manual)	0	0	6,000	0	0	6,000
TVA - Other Costs	0	0	12,000	0	0	12,000
Total Phase II	\$0	\$0	\$170,580	\$0	\$0	\$170,580

PHASE III						
Construction (Partner)						
Material	\$0	\$0	\$45,921	\$0	\$0	\$45,921
Labor	0	0	81,398	0	0	81,398
Equipment Usage	0	0	43,937	0	0	43,937
Subcontracts	0	0	244	0	0	244
Non-Manual	0	0	19,900	0	0	19,900
Other Costs	0	0	0	0	0	0
Partner Expenses/Charges	0	0	15,580	0	0	15,580
Contingency	0	0	17,400	0	0	17,400
Total Construction Cost	\$0	\$0	\$224,380	\$0	\$0	\$224,380
Engineering	0	0	1,670	0	0	1,670
TVA - Other Costs:						
Plant O/H-Material Handling	0	0	0	0	0	0
Plant O/H-Support	0	0	0	0	0	0
Other Organizations	0	0	0	0	0	0
Project Contingency	0	0	19,870	0	0	19,870
Total Phase III	\$0	\$0	\$245,920	\$0	\$0	\$245,920

TOTAL ALL PHASES

Construction (Partner)	\$0	\$0	\$230,380	\$0	\$0	\$230,380
Long Lead Procurements(Incl. Cntgcy)	0	0	131,000	0	0	131,000
Engineering	0	0	23,250	0	0	23,250
TVA - Other Costs	0	0	12,000	0	0	12,000
Project Contingency	0	0	19,870	0	0	19,870
TOTAL ALL PHASES	\$0	\$0	\$416,500	\$0	\$0	\$416,500

SCHEDULE:	Engineering		Construction	
	- Start -	- Complete -	- Start -	- Complete -
Phase I	04/04/94	08/26/94		
Phase II	10/03/94	12/30/94		
Phase III	FY 95	FY 95	FY 95	FY 95

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
ALT 2 - TWO PUMPS & ONE PIPELINE
Cash Flow**

	<u>Prior Years</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Ensuing Years</u>	<u>Total</u>
PHASE I						
Engineering	\$0	\$0	\$0	\$0	\$0	\$0
TVA - Other Costs	0	0	0	0	0	0
Total Phase I	\$0	\$0	\$0	\$0	\$0	\$0

PHASE II						
Engineering	\$0	\$0	\$21,580	\$0	\$0	\$21,580
Long Lead Procurements(Incl. Cntgcy)	0	0	208,000	0	0	208,000
Partner (Non-Manual)	0	0	6,000	0	0	6,000
TVA - Other Costs	0	0	12,000	0	0	12,000
Total Phase II	\$0	\$0	\$247,580	\$0	\$0	\$247,580

PHASE III						
Construction (Partner)						
Material	\$0	\$0	\$64,294	\$0	\$0	\$64,294
Labor	0	0	87,151	0	0	87,151
Equipment Usage	0	0	43,611	0	0	43,611
Subcontracts	0	0	244	0	0	244
Non-Manual	0	0	21,100	0	0	21,100
Other Costs	0	0	0	0	0	0
Partner Expenses/Charges	0	0	16,600	0	0	16,600
Contingency	0	0	19,800	0	0	19,800
Total Construction Cost	\$0	\$0	\$252,800	\$0	\$0	\$252,800
Engineering	0	0	1,670	0	0	1,670
TVA - Other Costs:						
Plant O/H-Material Handling	0	0	0	0	0	0
Plant O/H-Support	0	0	0	0	0	0
Other Organizations	0	0	0	0	0	0
Project Contingency	0	0	24,950	0	0	24,950
Total Phase III	\$0	\$0	\$279,420	\$0	\$0	\$279,420

TOTAL ALL PHASES						
Construction (Partner)	\$0	\$0	\$258,800	\$0	\$0	\$258,800
Long Lead Procurements(Incl. Cntgcy)	0	0	208,000	0	0	208,000
Engineering	0	0	23,250	0	0	23,250
TVA - Other Costs	0	0	12,000	0	0	12,000
Project Contingency	0	0	24,950	0	0	24,950
TOTAL ALL PHASES	\$0	\$0	\$527,000	\$0	\$0	\$527,000

SCHEDULE:	Engineering		Construction	
	- Start -	- Complete -	- Start -	- Complete -
Phase I	04/04/94	08/26/94		
Phase II	10/03/94	12/30/94		
Phase III	FY 95	FY 95	FY 95	FY 95

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
ALT 3 - TWO PUMPS & TWO PIPELINE
Cash Flow**

	<u>Prior Years</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Ensuing Years</u>	<u>Total</u>
PHASE I						
Engineering	\$0	\$0	\$0	\$0	\$0	\$0
TVA - Other Costs	0	0	0	0	0	0
Total Phase I	\$0	\$0	\$0	\$0	\$0	\$0

PHASE II						
Engineering	\$0	\$0	\$21,580	\$0	\$0	\$21,580
Long Lead Procurements(Incl. Cntgcy)	0	0	227,000	0	0	227,000
Partner (Non-Manual)	0	0	6,000	0	0	6,000
TVA - Other Costs	0	0	12,000	0	0	12,000
Total Phase II	\$0	\$0	\$266,580	\$0	\$0	\$266,580

PHASE III						
Construction (Partner)						
Material	\$0	\$0	\$69,094	\$0	\$0	\$69,094
Labor	0	0	100,451	0	0	100,451
Equipment Usage	0	0	47,411	0	0	47,411
Subcontracts	0	0	244	0	0	244
Non-Manual	0	0	24,600	0	0	24,600
Other Costs	0	0	0	0	0	0
Partner Expenses/Charges	0	0	19,200	0	0	19,200
Contingency	0	0	22,100	0	0	22,100
Total Construction Cost	\$0	\$0	\$283,100	\$0	\$0	\$283,100
Engineering	0	0	1,670	0	0	1,670
TVA - Other Costs:						
Plant O/H-Material Handling	0	0	0	0	0	0
Plant O/H-Support	0	0	0	0	0	0
Other Organizations	0	0	0	0	0	0
Project Contingency	0	0	27,650	0	0	27,650
Total Phase III	\$0	\$0	\$312,420	\$0	\$0	\$312,420

TOTAL ALL PHASES						
Construction (Partner)	\$0	\$0	\$289,100	\$0	\$0	\$289,100
Long Lead Procurements(Incl. Cntgcy)	0	0	227,000	0	0	227,000
Engineering	0	0	23,250	0	0	23,250
TVA - Other Costs	0	0	12,000	0	0	12,000
Project Contingency	0	0	27,650	0	0	27,650
TOTAL ALL PHASES	\$0	\$0	\$579,000	\$0	\$0	\$579,000

SCHEDULE:	Engineering		Construction	
	- Start -	- Complete -	- Start -	- Complete -
Phase I	04/04/94	08/26/94		
Phase II	10/03/94	12/30/94		
Phase III	FY 95	FY 95	FY 95	FY 95

**KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
ALT 4 - ONE SUBMERSIBLE PUMP & ONE PIPELINE
Cash Flow**

	<u>Prior Years</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>Ensuing Years</u>	<u>Total</u>
PHASE I						
Engineering	\$0	\$0	\$0	\$0	\$0	\$0
TVA - Other Costs	0	0	0	0	0	0
Total Phase I	\$0	\$0	\$0	\$0	\$0	\$0

PHASE II						
Engineering	\$0	\$0	\$21,580	\$0	\$0	\$21,580
Long Lead Procurements(Incl. Cntgcy)	0	0	60,300	0	0	60,300
Partner (Non-Manual)	0	0	3,600	0	0	3,600
TVA - Other Costs	0	0	5,500	0	0	5,500
Total Phase II	\$0	\$0	\$90,980	\$0	\$0	\$90,980

PHASE III						
Construction (Partner)						
Material	\$0	\$0	\$52,818	\$0	\$0	\$52,818
Labor	0	0	75,852	0	0	75,852
Equipment Usage	0	0	40,039	0	0	40,039
Subcontracts	0	0	5,331	0	0	5,331
Non-Manual	0	0	16,200	0	0	16,200
Other Costs	0	0	0	0	0	0
Partner Expenses/Charges	0	0	14,200	0	0	14,200
Contingency	0	0	6,700	0	0	6,700
Total Construction Cost	\$0	\$0	\$211,140	\$0	\$0	\$211,140
Engineering	0	0	1,670	0	0	1,670
TVA - Other Costs:						
Plant O/H-Material Handling	0	0	0	0	0	0
Plant O/H-Support	0	0	0	0	0	0
Other Organizations	0	0	0	0	0	0
Project Contingency	0	0	16,210	0	0	16,210
Total Phase III	\$0	\$0	\$229,020	\$0	\$0	\$229,020

TOTAL ALL PHASES

Construction (Partner)	\$0	\$0	\$214,740	\$0	\$0	\$214,740
Long Lead Procurements(Incl. Cntgcy)	0	0	60,300	0	0	60,300
Engineering	0	0	23,250	0	0	23,250
TVA - Other Costs	0	0	5,500	0	0	5,500
Project Contingency	0	0	16,210	0	0	16,210
TOTAL ALL PHASES	\$0	\$0	\$320,000	\$0	\$0	\$320,000

SCHEDULE:

	Engineering		Construction	
	- Start -	- Complete -	- Start -	- Complete -
Phase I	04/04/94	08/26/94		
Phase II	10/03/94	12/30/94		
Phase III	FY 95	FY 95	FY 95	FY 95