

Ash Disposal

Kingston Fossil Plant Develop Fly Ash, Gypsum & Bottom Ash Disposal Capacity

Ash Disposal Project name

Sys. Eng. Estimator

KIF 04513 KIF530 S. M. Haber

Plant Estimate # PCN # Requesting Engr Option Revision

+/- 30% 08/16/2004 Conceptual Estimate Type
Estimate Accuracy
Est. Issue Date
Funding Type Phase

Capital

Sorted by 'Location/Activity'
'Detail' summary

Report format

stal Amount		8,000,000	40,000	35,000	40,000	7.085.000
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Equip Amount Other Amount		 -	•	•	•	•
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bor Amount Ma			40,000			
ceoff Quantity La		1.00 ls	1.00 ls	1.00 ls	1.00 ls	1.00 ls
Tal						
Description		Material (Blank)	Craft Labor (GUMBK)	GUMBK (Ph II)	Plant Support (Ph III)	Furnkey Installation
ivity		-	Craft Lab	GUMBK	Plant Sur	Turnkey
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hrs						
1,086.366	100.000 % (100.000) %	100.000 % (100.000) %	100.000 % (100.000) %	547.917 % @ 37.942 % @ 2.209 % @ 3.682 % @	810.917 %@ 109.496 %@ 2.209 %@ 7.364 %@ 1.473 %@	876.667 % @ 103.692 % @ 3.682 % @ 2.209 % @
15,200,000	15,200,000	15,200,000	15,200,000	15,475,000	15,925,000	16,375,006
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	Engineered Materials - Ph 2 Adjustment - Engr Materials	Environmental Costs Adjustment Environmental	Demolition Costs Adjustment Demolition	FPG Engineering - Phase 1 FPG Proj Engr - Phase 1 FPG Estimating - Phase 1 FPG Proj Contri - Phase 1 Plant Support - Phase 1	FPG Engineering - Phase 2 FPG Prof Engr - Phase 2 FPG Estimating Phase 2 FPG Prof Contrl - Phase 2 FPG Records - Phase 2 Plant Support - Phase 2	PG Engineering - Phase 3 PG Proj Engr - Phase 3 PG Proj Contrl - Phase 3 PG Records - Phase 3

Total 16,375,000

	1 KIF530: Develop Fly Ash, Gypsum, and Bottom	n Ash Storage	şe.						
_	2 Phase/Activity		FY05	FY06	FY07	FY08	Totals	Prv Yrs	
	8			-		•			
	4					nusii • an			
	5 Phase 1								•
	6 Engineering	200	195				395		
	7 PE/PC/PS		12				12		
_	8 Plant Support		5				5		
	9 PSS - Inspection						0		
~	10							•	
-	11 Total Phase 1	200	212	0	0	0	412		
	12								
_									
Ť	14								
_	15 Engineering (Systems and EDS)	0	30	70	300	0	400		
-	16								
_	17 PE/PC/PS	0	20	25	30	0	75		
<u> </u>	18					•			
~	19 GUBMK/HED (estimate)	0	15	0	0	0	15		
7	20 Plant Support	0	3	0	0	0	3		-
21	L								:
7	22 Long Lead Material (LLM)								
ď	23 blank	0	200	200		0	400		
24	i4 blank	0	0		2500	4000	9059		
Ñ	25 total LLM	0	200	200	2500	4000	0069		
Ñ	26							:	
7	27 Total Phase 2	0	268	295	2830	4000	7393		
~	28					-			

2 Planes/activity	1 KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage	Bottom Ash Stora							
Engineering 0 25 30 200 455	2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
PEPPC/PS	29 Phase 3			-					
PEPPC/PS	30								
PEPPC/PRS	31 Engineering	0	25	30	200	200	455	,	
PEPPC/PE Peach Support	32							=	
Installation (X) CUBMK O O O O O O O O O	33 PE/PC/PS	0	25	25	15	35	100		
Installation (x) GLIBMK 0 0 0 20 20 20 40 40	34								
Installation (x) GUBMK 0 0 0 20 20 40 40 40	35 Plant Support	0	20	20	20	20	80		
Installation (x) GUBMK 0 0 0 0 0 0 0 0	36								
CIPBAKE O O O O O O	37 Installation (x)								
Four Delay			0	0	20	20	40		
Total GUBMK 0 0 0 20 20 40			0	0	0	0	0		
Turnkey Installation 0 1075 1,135 1960 3725 7895			0	0	20	20	40		
Turnkey Installation 0 1075 1,135 1960 3725 7895	41								
Asbestos abatement (GUBMK)			1075	1,135	1960	3725	7895		
Total Phase 3 Total Installation Total Phase 4 Total Phase 5 Total Installation Total Phase 6 Total Phase 8 Total Phase 9			0	0	0	0	0		
Total Phase			1075	1135	1960	3725	7895		
Asbestos abatement (GUBMK) 0 0 0 0 0 0 0 0	45								
Total Phase 3 Total Installation 0 1145 1216 2215 4000 8570 Total Phase 3 200 1145 1210 2215 4000 8570 Current funding Differential			0	0	0	0	0		;
Total Phase 3 Total Installation O 1075 1135 1980 3745 7935	47								
Total Phase 3 0 1145 1210 2215 4000 8570			1075	1135	1980	3745	7935		
Total Phases 200 1145 1210 2215 4000 8570 Current funding 200 1625 1505 5045 8000 16375 Current funding 200 75 100 8000 8000 16375 Differential 0 1550 1405 -2955 0 0 Assumptions: 1. Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly ash system. 2. Design of BOP interfaces will be by FE&TS 3. FE&TS Lead will be Civil Department 4. An outage will be required for some BOP interface tic-ins 8.00 8.00 6. Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) 8.75k) 8.75k) <t< td=""><td>49</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	49								
Total: All Phases 200 1625 1505 5045 8000 16375 Current funding 200 75 100 8000 16375 16375 Differential 0 1550 1405 -2955 0 0 Assumptions: 1. Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly ash system. 2. Design of BOP interfaces will be Dy FE&TS 3. FE&TS Lead will be Civil Department 4. An outage will be required for some BOP interface tie-ins 5. Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) 6. Ph 1	50 Total Phase 3	0	1145	1210	2215	4000	8570		
200 1625 1505 5045 8000 16375 200 75 100 8000 8000 16375 1 PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly interfaces will be by FE&TS 0 0 0 interfaces will be by FE&TS interface tie-ins c c c c be required for some BOP interface tie-ins c c c c c les Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) c c c c	51							design	
fferential 0 1550 1405 -2955 0 16375 sumptions: 0 1550 1405 -2955 0 0 0 sumptions: Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly Design of BOP interfaces will be by FE&TS EE&TS E <td>52 Total: All Phases</td> <td>200</td> <td>1625</td> <td>1505</td> <td>5045</td> <td>8000</td> <td>16375</td> <td></td> <td>-</td>	52 Total: All Phases	200	1625	1505	5045	8000	16375		-
Semmptions: Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly Design of BOP interfaces will be by FE&TS Lead will be Civil Department An outage will be required for some BOP interface tie-ins Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit duestions (\$75k) Ph I eng includes Peer review (\$75k) Ph I eng includes Pe	Current funding	200	75	100	8000	8000	16375		
Sumptions: Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly Design of BOP interfaces will be by FE&TS FE&TS Lead will be Civil Department An outage will be required for some BOP interface tie-ins Ph I eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k)	Differential	0	1550	1405	-2955	0	0	-	
Original project PJ was for a DFA system; Design and installation of system was to be by turnkey contractor; scope similar to CUF dry fly Design of BOP interfaces will be by FE&TS FE&TS Lead will be Civil Department An outage will be required for some BOP interface tie-ins Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k), answering permit questions (\$75k)	Assumptions:								
Design of BOP interfaces will be by FE&TS FE&TS Lead will be Civil Department An outage will be required for some BOP interface tie-ins Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k),	1. Original project PJ was for a DFA system		llation of sys	tem was to b		contractor; scol	be similar to C	dry fly	system.
FE&TS Lead will be Civil Department An outage will be required for some BOP interface tie-ins Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k),									
An outage will be required for some BOP interface tie-ins Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k),									
Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k),									
		udy of deep french	drains (\$70k)	ات ا	permit questi	ons (\$75k)			

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Phase I. Phase II. Phase III. Phase I	2 Phase/Activity	FY	704	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
Phase 1 Phase 1 Phase 1 Phase 1 200 195 395 395 PEDPORTION PRODUCT 395 395 PEDPORTION PRODUCT 395 PEDPORTION PRODUCT 305 305 305 305 305 305 305 412 400 412 400 412 400 400 412 400	3									
Phase 1 200 195 995 Engineering Engineering Phart Support 5 12 12 PS-Inspection 5 6 70 70 70 Total Phase 1 200 212 0 0 412 70 PS- Inspection 200 212 0 0 412 412 Phase 2 2 2 30 0 412 412 Phase 2 30 70 300 0 412 412 Engineering (Systems and EDS) 0 30 70 300 0 75 PEPC/PS 0 30 70 300 0 75 75 Plant Support 0 3 0 0 75 75 75 Plant Support 0 3 0 0 0 30 0 15 Plant Support 0 0 0 0 0 0 400 6500 <	7								100	
Engineering Engineering 195 95 PEPC/PS 12 12 12 Plant Support 5 12 12 PSS - Inspection 200 212 0 0 412 PSS - Inspection 200 212 0 0 412 Pass - Inspection 200 212 0 0 412 Pass - Inspection 200 212 0 0 412 Pass - Inspection 200 212 0 0 412 Engineering (Systems and EDS) 0 30 0 75 76 PEPC/PS 0 20 20 0 75 75 Pant Support 0 15 0 0 75 76 Plant Support 0 200 200 0 0 15 76 Plant Support 0 0 0 0 0 400 70 Plant Support 0 0<	5 Phase 1									
PEPC/PS 12 <t< td=""><td>6 Engineering</td><td>30</td><td>0(</td><td>195</td><td></td><td></td><td></td><td>395</td><td></td><td></td></t<>	6 Engineering	30	0(195				395		
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PSS - Inspection	8 Plant Support			5				v		
Phase 1 200 212 0 0 0 412 Phase 2 Engineering (Systems and EDS) 0 30 70 300 0 412 Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 75. Plant Support 0 3 0 0 15 Long Lead Material (LLM) blank 0 200 0 0 3 Long Lead Material (LLM) blank 0 200 250 400 6500 Accil Bhack 0 200 250 400 6500	9 PSS - Inspection							0		
Phase 1 200 212 0 0 412 Phase 2 Phase 2 6 30 70 300 0 400 Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 75. Plant Support 0 3 0 0 0 15 Long Lead Material (LLM) blank 0 200 0 0 3 Long Lead Material (LLM) blank 0 200 200 0 400 Long Lead Material (LLM) blank 0 200 250 400 6500 Total LLM 0 200 200 250 400 6500	10									
Phase 2 Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 400 PE/PC/PS 0 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 75. Plant Support 0 15 0 0 0 15 Plant Support 0 3 0 0 0 3 Long Lead Material (LLM) blank 0 200 0 0 400 blank 0 200 200 0 0 400 blank 0 0 2500 2500 4000 6500 coll black 0 200 200 2500 4000 6900	11 Total Phase 1	20	9	212	0	0	0	412		
Phase 2 Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 75; PE/PC/PS 0 20 25 30 0 75; GUBMK/HED (estimate) 0 15 0 0 75; Plant Support 0 3 0 0 0 3 Long Lead Material (LLM) blank 0 200 0 0 400 blank 0 200 200 0 400 6500 cotal Lead Material (LLM) blank 0 200 2500 4000 6500 cotal Lead Material (LLM) 0 0 0 0 400 6500	12							_		
Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 75 GUBMK/HED (estimate) 0 15 0 0 75 Plant Support 0 3 0 0 15 Plant Support 0 3 0 0 3 Long Lead Material (LLM) blank 0 200 200 0 400 blank 0 200 200 0 400 6500 cotal LLM 0 200 2500 4000 6500	13 Phase 2							_		
Engineering (Systems and EDS) 0 30 70 300 0 400 PE/PC/PS 0 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 0 15 Plant Support 0 3 0 0 0 3 Long Lead Material (LLM) blank 0 200 0 0 400 Long Lead Material (LLM) blank 0 200 200 0 400 Long Lead Material (LLM) blank 0 200 0 400 6500 Total LLM 0 200 2500 4000 6500 6500	14									
PE/PC/PS 0 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 0 15 Plant Support 0 3 0 0 0 15 Long Lead Material (LLM) blank 0 200 200 400 400 blank 0 0 250 400 6500 6500 Total LLM 0 200 250 4000 6500 6500	15 Engineering (Systems and EDS)	0		30	70	300	0	400		
PE/PC/PS O 20 25 30 0 75. GUBMK/HED (estimate) 0 15 0 0 0 0 15 Plant Support 0 3 0 0 0 15 15 Long Lead Material (LLM) blank 0 200 200 0 400 400 blank 0 0 200 250 4000 6500 Total LLM 0 200 250 4000 6500	16									
GUBMK/HED (estimate) 0 15 0 0 0 15 Plant Support 0 3 0 0 0 15 Long Lead Material (LLM) blank 0 200 200 0 400 Long Lead Material (LLM) blank 0 0 400 6500 Lotal LLM 0 200 250 4000 6500 Total LLM 0 200 250 4000 6900	17 PE/PC/PS	0		20	25	30	0	75.		
GUBMK/HED (estimate) 0 15 0 0 15 Plant Support 0 3 0 0 0 3 Long Lead Material (LLM) blank 0 200 200 0 400 blank 0 0 0 4000 6500 cotal LLM 0 200 2500 4000 6900	18									
Plant Support	19 GUBMK/HED (estimate)	0	_	15	0	0	0	15		
Long Lead Material (LLM) blank 0 200 200 0 blank 0 0 2500 4000 cotal LLM 0 200 2500 4000	20 Plant Support	0	_	3	0	0	0	3	7.	
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0000 200 000 0				200	200	2500	4000	0069		
0007 0000	26						-			
0004 087 567 897 0	27 Total Phase 2	0		268	295	2830	4000	7393		

INIT 330. Develop Fly Asil, Gypsull, and Dolloin	Ash Blut age	5.						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	-
Engineering	0	25	30	200	200	455		
33 PE/PC/PS	0	25	25	15	35	100		
35 Plant Support	0	20	20	20	20	80		
37 Installation (x)								
GUBMK	0	0	0	20	20	40		
blank	0	0	0	0	0	0		
Total GUBMK	0	0	0	20	20	40		
Turnkey Installation	0	1075	1,135	1960	3725	7895		
blank	0	0	0	0	0	0	,	
Total	0	1075	1135	1960	3725	7895	-	A CONTRACTOR OF THE CONTRACTOR
Asbestos abatement (GUBMK)	0	0	0	0	0	0		
							The state of the s	
Total Installation	0	1075	1135	1980	3745	7935		
50 Total Phase 3	0	1145	1210	2215	4000	8570		
					_			
52 Total: All Phases	200	1625	1505	5045	8000	16375		
Current funding	200	75	100	8000	8000	16375		
Differential	0	1550	1405	-2955	0	0		
Assumptions:								
1. Original project PJ was for a DFA system; Desig	n and instal	llation of sys	tem was to b	e by turnkey	gn and installation of system was to be by turnkey contractor; scope similar to	pe similar to C	CUF dry fly ash	ash system.
3&TS								
FE&TS Lead will be Civil Department							manager, and the state of the s	
OP interf	ace tie-ins						The state of the s	
Ph 1 eng includes Peer review (\$50k), study of deep french drains (\$70k)	eep french	drains (\$70k)), answering	, answering permit questions (\$75k)	ons (\$75k)			
							•	
		N. PRODUNCING SANGERS AND SANGE AND ADDRESS OF THE PRODUCT OF THE						

FOSSIL POWER GROUP FPG CAPITAL PROJECT ACCOUNT / BUDGET INPUT FORM (Dollars in Thousands)

Fiscal Year	2006													
PCN	KIF530	Proj	ect Desc	ription	DEVELOR	FLY AS	H & BO	TTOM AS	Project Description DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY	SAL CAP	ACITY			
Responsible Unit	18953													
Location/Unit	450Y													
Functional Account	EC0681	1												
						Month	ly Bud	Monthly Budget Spread	ead					
Phase - Work Package Number - Description	Short Code	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Total
Phase A - Study														
Labor		0	0	0	0	0	0	0	0	0	0	0	0	0
Phase A Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0
Phase B - Design and I Procurement														
Labor		0	0	0	o	0	С	О	10	0	0	0	0	C
Long Lead Procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Phase B Subtotal	Ī	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase C - Implementation	·		-											
Labor	001DQYW	10	22	18	2				-	\mid	F	F	F	52
Implementation		80	15	5					!					100
Phase C Subtotal		06	37	23	2	0	0	0	0	0	0	0	0	152
						Ì								
Project Total		6	37	23	2	0	٥	0	0	0	0	0	0	152

Project

Outage Date:

Type: Capital

Start Date: 07/30/2003

In-Srvc Date: 09/16/2005

Cat: REGULATORY

Prom: FPG - Ash Handling

Estimated

<u>Actual</u>

09/30/2005

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

KIF530

Rev#

Project ID

I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A Phone: 423/751-6426

Responsible Mgr Name: BAUGH, JAMES S

Phone: 423/751-6137

Problem Description

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity.

News Release

N/A

Cost

Original	Preliminary	Definitive		Original	Original	Preliminary	Preliminary	Definitive	Definitive
Estimate	Estimate	Estimate		Variance (\$)	Variance (%)	Variance (\$)	Variance (%)	Variance (\$)	Variance (%)
\$2,756	\$2,756	\$2,756	\$2,531	-\$225	-8	-\$225	-8	-\$225	-8

Cost Comments

Final costs within approved limits.

Schedule

Original In-	Preliminary	Definitive	Actual In-	Original	Preliminary	Definitive
Service	In-Service	In-Service	Service	Variance	Variance (Days)	Variance (Days)
09/16/2005	09/16/2005	09/16/2005	09/30/2005	14	14	14

Schedule Comments

Assets placed in service on 9/30/2005 (14 days negative).

Assets Planned to be placed in-service and/or Assets to be Retired

No information available

Actual Assets placed in-service and/or Assets Retired

Expansion of dredge cell adjacent to existing dredge cell by construction of a new dike. Scope also included development of a waste stack for fly ash and bottom ash within the existing perimeter dikes of the active ash disposal area.

A part II permit package was submitted to Environmental Affairs.

Scope also included the design, materials procurement (pumps & piping, french drains), and installation as necessary to support the engineering study findings.

Page 1 of 2

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Project N KIFDEV		SH & BOTTOM AS	H DISPO	OSAL CAPACIT	Y .				_	Project ID (IF530	<u>)</u>	<u>Rev#</u> 4	
CSF: Ach	ieve exceller	ice in the Asset opt	imizatior	and production	proces	ses.							
ARO Revie	w (Status)	N/A					,						_
ARO Asset No informatio	Description	/ Future Retireme	ent Actic	on / Regulation			· · · · · · · · · · · · · · · · · · ·				,	· · · · · · · · · · · · · · · · · · ·	
		I a a a u u a u a u a			**								
		leasurement y for fly ash and botto	m ash hy	FY 2007									—
	posar sapasit	y for my don and botte	iii asii by	1 1 2007.									
-						,							
Definitive P	erformance	Measurement							•			,	
Permitted dis	sposal capacity	y for fly ash and botto	m ash by	FY 2007.									
Actual Perf	ormance Me	asurement											
Permitted dis	posal capacity	for fly ash and botto	m ash by	FY 2006.									
				·									
Actual O&M Savings	\$0	Actual Increased Revenue	\$0	PM Indicator	5							· · · · · · · · · · · · · · · · · · ·	
Lessons Le	arned												

Project

Outage Date:

Type: Capital

Start Date: 07/30/2003

In-Srvc Date: 09/16/2005

Cat: REGULATORY

Prgm: FPG - Ash Handling

Estimated

<u>Actual</u>

09/30/2005

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID KIF530

Rev#

I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A

Phone: 423/751-6426 Responsible Mgr

Name: BAUGH, JAMES S

Phone: 423/751-6137 **Problem Description**

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News Release

N/A

Cost

Original Estimate	Preliminary Estimate	Definitive Estimate	Actual Cost	Original Variance (\$)		Preliminary Variance (\$)	Preliminary Variance (%)	Definitive Variance (\$)	Definitive Variance (%)
\$2,756	\$2,756	\$2,756	\$2,531	-\$225	-8	-\$225	-8	-\$225	-8

Cost Comments

Final costs within approved limits.

Schedule

Original In-	Preliminary	Definitive	Actual In-	Original	Preliminary	Definitive	
Service	In-Service	In-Service	Service	Variance	Variance (Days)	Variance (Days)	
09/16/2005	09/16/2005	09/16/2005	09/30/2005	14	14	14	

Schedule Comments

Assets placed in service on 9/30/2005 (14 days negative). Project delay was a result of market-driven factors for LLM. A portion of the LLM was petroleum based and it's production was hindered due to the disruptions of the petrochemical supply associated with the 2005 hurricane season.

Assets Planned to be placed in-service and/or Assets to be Retired

No information available

Page 1 of 2

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

Actual Asse	ts placed in	-service and/or A	ssets Retire	d					
Expansion of stack for fly as	dredge cell adj sh and bottom	acent to existing dre ash within the existir	edge cell by co	nstruction of ikes of the a	a new dike. ctive ash disp	Scope also inclu posal area.	uded developm	ent of a waste	
							. •		•. •
A part II permi	it package was	submitted to Enviro	nmental Affair	S.					
Scope also in engineering s	cluded the desi tudy findings.	ign, materials procui	rement (pumps	s & piping, fro	ench drains),	, and installation	as necessary to	o support the	
ARO Review		N/A							
ARO Asset	Description :	/ Future Retireme	ent Action / F	Regulation					
No information	n available	- ataro Italiani	MC MOCION / I	togulation					
Original Per	formance M	easurement							
Permitted dis	posal capacity	for fly ash and botto	m ash by FY 2	2007.					
<u> </u>									····
		<u>Measurement</u>	·						,
Permitted dis	posal capacity	for fly ash and botto	m ash by FY 2	2007.					
L				· · · · · · · · · · · · · · · · · · ·		**************************************	Withhir south as the state of t		
Actual Perfe	ormance Mea	asurement							
Permitted dis	posal capacity	for fly ash and botto	m ash by FY 2	2006. Benefi	t measureme	ent for this projec	t should have t	peen changed	to be
complete by F	Y2006 in R4 o	f the project approva	al.						
Project restor	ed capability to	use the original dre	dae cells with	a marnin (fre	e-water-volu	ime in the ash no	and) instead of	providina dred	ne canacity
just-in-time. F	Permenant dred	dge capacity was av	ailable prior to	the need da	te of 12/2005	5. Remaining ca	pacity is still av	ailable in the te	emporary
dredge cell.									, ,
Successful ne	rmitting of this	project has provided	i KIE a hack-u	n site for EG	D avneum di	ienoeal Thie ie tl	ne only TVA site	that has an o	vence of 30
year life for or	-site disposal.	project rias providet	THI A DACK-U	p site ioi i C	D gypsuin di	aposai. Triis is ti	ie omy i va site	s tilat lias all e	XC622 OI 30-
-									
							:		
<u> </u>									
· · · · · · · · · · · · · · · · · · ·								· · · · · · · · · · · · · · · · · · ·	
Actual O&M	T	Actual Increased	1	РМ		<u>1</u>	· · · · · · · · · · · · · · · · · · ·		
Savings	\$0	Revenue	so	Indicator	5				
	<u> </u>		<u> </u>						
Lessons Le	arned								
									· · · · · · · · · · · · · · · · · · ·

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

1

I. Project Description

Organization

Owner: FPG-

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A Phone: 423/751-6426

Responsible Mgr

Name: DAVIS,MICHAEL D Phone: 423/751-7864

Problem Description

<u>Project</u>

Type: Capital

Cat: ASSET PRESERVATION

Prgm: No Program

Estimated Actual

Start Date: 07/30/2003

In-Srvc Date: 09/30/2008 Outage Date:

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity. In addition, planned scrubbers for Kingston will produce an additional high-volume by-product which may be co-disposed with fly ash and bottom ash beginning in FY 2009.

Project Scope

Expansion of dredge cell adjacent to existing dredge cell by construction of a new dike. Scope will also include development of a waste stack for flyash, bottom ash and gypsum within the existing perimeter dikes of the active ash disposal area.

Perform detailed analysis to determine the overall structural, environmental, and operational viability of continuing to raise and dredge to the existing dredge cells, considering the recent failure along Swan Pond road and the saturation of the lower dikes along the backwaters of the Emory river.

Perform engineering analysis and collect field data as required to develop a detailed design for maximizing the disposal capacity of fly ash, bottom ash and gypsum on the existing ash pond complex at the Kingston Fossil Plant while maintaining the required Free Water Volume. The detailed design should consider economic, structural, environmental and operational issues and impacts associated with long term ash disposal. The engineering suitability of ash currently produced at Kingston for storage in an engineered stack should be verified through testing (if this has not already been satisfactorily completed). A part II permit package is to be submitted to Environmental Affairs.

Scope will also include the design, materials procurement, and installation as necessary to support the engineering study findings.

Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2007. Permitted disposal capacity for gypsum by FY 2009.

Other Options/Alternatives

Reduce or discontinue plant operations such that no ash is produced, or locate an existing off-site permitted disposal area and pay a tipping fee to haul all of Kingston's ash there.

Reason For Change

R1: Change in project cost (R0 was based on a dry fly ash system, no construction until FY07). New project cash flow represents development of ash and gypsum disposal capacities with design and construction starting in FY05.

Page 1 of 6

09/16/2004 12:45:03 PM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY **CSF**: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

1

News Release	- 1	• .		
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Page 2 of 6

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

COST

ECONOMIC INDICATORS

SUNK CAPITAL PROJECTS: \$0

NPV: \$8,579.0

SUNK O&M PROJECTS: \$0

PI: 1.825

REMAINING COST: \$15,942

IRR: 42.0

BASE YEAR: 2004

TOTAL COST: \$15,942

SIMPLE PAYBACK: 6

ESTIMATE TYPE: Conceptual

Year	Capital Cost	O&M Cost	Total Benefit	O&M Base Increase	Environmental Cost
SUNK	0	0	0	0	
OUT YEARS	0	0	0	0	
2004	200	0	0	0	0
2005	1,625	0	0	0	0
2006	1,505	0	0	0	0
2007	5,045	0	5,000	0	0
2008	7,567	0	5,000	0	0
2009	0	0	5,000	0	0
2010	0	0	5,000	0	0
2011	0	0	5,000	0	0
2012	0	0	5,000	0	0
2013	0	0	5,000	0	0
2014	0	0	5,000	0	0
2015	0	0	5,000	0	0
2016	0	0	5,000	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	0	00	0	0	0
2023	n l	n	. n l	0	Λ

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

1

II. Project Economic Evaluation

Cost Assumptions

1 \$7,805K engineering and procurement cost.

Risks

No similar projects.

2 \$8,132K Implementation cost.

Conceptual estimate (no similar projects)

3. No significant marketing or utilization of ash or gypsum will take place.

Based on historical data (ash) and similar projects (gypsum).

Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000

 The existing dredge cells and ponds shall be utilized to the extent possible to obtain an additional ten years of disposal capacity.

Support of plant business plan.

Benefit Assumptions

 Haul fly ash and bottom ash offsite to an existing permitted disposal site @ \$10/ton for 500,000 tons per year = \$5,000k per year for ten years.

Risks

Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

Project ID

Rev#

KIF530

1

CSF: Achieve excellence in the Asset optimization and production processes.

II. Project Economic Evaluation

Project EconEval

Benefit Input Section

Unit: 70

Base Calc Year: 2004

Fiscal Year	Heat Rate Imprvmn	Forced Outage Hours	Forced Derating MW	Forced Derating HRS	MWHL	O&M Base Increase (\$000's)	O&M Base Savings (\$000's)	Other Benefits Savings (\$000's)	Outage Duration Reductio n (HRS)	Project Cost (\$000's)
2004	0	0	0	0	0	0	0	0	0	20
2005	0	0	0	0	0	0	0	0	0	2,05
2006	0	0	0	0	0	0	0	0	0	1,50
2007	0	0	0	. 0	0	0	0	5,000	0	5,04
2008	0	0	0	· · O	0	0	0	5,000	0	7,56
2009	0	0	0	0	0	0	0	5,000	0	(
2010	0	. 0	0	0	0	0	0	5,000	0	. (
2011	0	0	0	0	0	0	0	5,000	0	(
2012	0	0	0	0	0	0	0	5,000	0	(
2013	0	0	0	0	0	0	0	5,000	0	. (
2014	0	0	0	0	0	0	0	5,000	0	(
2015	0	0	0	0	0	0	- 0	5,000	0	(
2016	0	0	0	0	0	0	0	5,000	0	(
2017	0	0	0	0	0	0	0	0	0	(
2018	0	0	0	0	0	0	0	0	0	(
2019	0	0	0	0	0	0	0	0	0	(
2020	0	0	0	0	0	0	0	0	0	C
2021	.0	0	0	0	0	0	0	0	0	C
2022	0	0	0	0	0	0	0	0	0	С

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation **Project EconEval(continued)**

Benefit Value Section

Unit: 70

Base Calc Year: 2004

Fiscal Year	Heat Rate Benefit	MWH Improve In (000's)	Unit EFOR Impact	System EFOR Impact	O&M Base Savings (\$000's)	Other Benefits Savings	Outage Redctns Savings In (\$000's)	Benefit Value In (\$000's)
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	5,000	0	5,000
2008	0	Ö	0	0	0	5,000	0	5,000
2009	0	0	0	0	0	5,000	0	5,000
2010	0	0	0	0	0	5,000	0	5,000
2011	0	0	0	.0	0	5,000	0	5,000
2012	0	. 0	0	0	0	5,000	0	5,000
2013	0	0	0	0	0	5,000	0	5,000
2014	0	0	0	0	0	5,000	0	5,000
2015	0	0	0	0	0	5,000	0	5,000
2016	0	0	0	0	0	5,000	0	5,000
2017	0	0	0	0	0	. 0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0

Page 6 of 6

09/16/2004 12:45:03 PM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

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I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A

Phone: 423/751-6426

Responsible Mgr

Name: DAVIS,MICHAEL D Phone: 423/751-7864

Problem Description

Project

Type: Capital

Cat: ASSET PRESERVATION

Prgm: No Program

Estimated Actual

Start Date: 07/30/2003 In-Srvc Date: 09/30/2008

Outage Date:

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity. In addition, planned scrubbers for Kingston will produce an additional high-volume by-product which may be co-disposed with fly ash and bottom ash beginning in FY 2009.

Project Scope

Expansion of dredge cell adjacent to existing dredge cell by construction of a new dike. Scope will also include development of a waste stack for flyash, bottom ash and gypsum within the existing perimeter dikes of the active ash disposal area.

Perform detailed analysis to determine the overall structural, environmental, and operational viability of continuing to raise and dredge to the existing dredge cells, considering the recent failure along Swan Pond road and the saturation of the lower dikes along the backwaters of the Emory river.

Perform engineering analysis and collect field data as required to develop a detailed design for maximizing the disposal capacity of fly ash, bottom ash and gypsum on the existing ash pond complex at the Kingston Fossil Plant while maintaining the required Free Water Volume. The detailed design should consider economic, structural, environmental and operational issues and impacts associated with long term ash disposal. The engineering suitability of ash currently produced at Kingston for storage in an engineered stack should be verified through testing (if this has not already been satisfactorily completed). A part II permit package is to be submitted to Environmental Affairs.

Scope will also include the design, materials procurement, and installation as necessary to support the engineering study findings.

Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2007. Permitted disposal capacity for gypsum by FY 2009.

Other Options/Alternatives

Reduce or discontinue plant operations such that no ash is produced, or locate an existing off-site permitted disposal area and pay a tipping fee to haul all of Kingston's ash there.

Reason For Change

New project.

Page 1 of 4

05/19/2004 9:51:51 AM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

Project ID

Rev#

KIF530

CSF : Achieve excellence in the Asset optimization and production processes.

News Release N/A

Page 2 of 4

05/19/2004 9:51:51 AM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

COST

ECONOMIC INDICATORS

SUNK CAPITAL PROJECTS: \$0

NPV: \$8,864.0

SUNK O&M PROJECTS: \$0

PI: 1.877

REMAINING COST: \$16,300

IRR: 53.0

TOTAL COST: \$16,300

SIMPLE PAYBACK: 6

ESTIMATE TYPE: Order of Magnitude

BASE YEAR: 2004

Year	Capital Projects	O&M Projects	Benefit	O&M Base	Environ. Cost
SUNK	0	0	0	0	
OUT YEARS	0	0	0	0	
2004	200	0	0	0	0
2005	0	0	0	0	0
2006	100	0	0	0	0
2007	8,000	. 0	5,000	0	0
2008	8,000	0	5,000	0	0
2009	0	0	5,000	0	0
2010	0	0	5,000	0	0
2011	0	0	5,000	0	0
2012	0	0	5,000	0	0
2013	0	0	5,000	0	0
2014	0	0	5,000	0	0
2015	0	0	5,000	0	0
2016	0	0	5,000	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	0	0	0	0	0
2023	0	0	0	0	0

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

Cost Assumptions

1 Engineering = \$200k in FY 04; \$100k in FY 06.

Risks

Based on similar projects.

 Implementation (Develop by-product handling system.)= \$8,000k in FY 07; \$8,000k in FY 08. Conceptual estimate for turn-key system.

3. No significant marketing or utilization of ash or gypsum will take place.

Based on historical data (ash) and similar projects (gypsum).

Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000

 The existing dredge cells and ponds shall be utilized to the extent possible to obtain an additional ten years of disposal capacity.

Support of plant business plan.

Benefit Assumptions

 Haul fly ash and bottom ash offsite to an existing permitted disposal site @ \$10/ton for 500,000 tons per year = \$5,000k per year for ten years.

Risks

Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A

Phone: 423/751-6426

Responsible Mgr

Name: DAVIS.MICHAEL D Phone: 423/751-7864

Problem Description

Project

Type: Capital

Cat: ASSET PRESERVATION

Prgm: Ash Handling (FPG)

Estimated <u>Actual</u>

Start Date: 07/30/2003 In-Srvc Date: 09/30/2006

Outage Date:

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity.

Project Scope

Expansion of dredge cell adjacent to existing dredge cell by construction of a new dike. Scope will also include development of a waste stack for flyash and bottom ash within the existing perimeter dikes of the active ash disposal area.

Perform detailed analysis to determine the overall structural, environmental, and operational viability of continuing to raise and dredge to the existing dredge cells, considering the recent failure along Swan Pond road and the saturation of the lower dikes along the backwaters of the Emory river.

Perform engineering analysis and collect field data as required to develop a detailed design for maximizing the disposal capacity of fly ash and bottom ash on the existing ash pond complex at the Kingston Fossil Plant while maintaining the required Free Water Volume. The detailed design should consider economic, structural, environmental and operational issues and impacts associated with long term ash disposal. The engineering suitability of ash currently produced at Kingston for storage in an engineered stack should be verified through testing (if this has not already been satisfactorily completed). A part II permit package is to be submitted to Environmental Affairs.

Scope will also include the design, materials procurement, and installation as necessary to support the engineering study findings.

Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2007.

Other Options/Alternatives

Reduce or discontinue plant operations such that no ash is produced, or locate an existing off-site permitted disposal area and pay a tipping fee to haul all of Kingston's ash there.

Reason For Change

Cash Flow Change - The initial project was to permit and design a facility to contain fly ash, bottom ash, and gypsum inside the current ash pond. The project is now focused on the existing ash stack due to gypsum being permitted on the peninsula. Increased money in FY05 is due to a change in design recommendation and construction technique.

News Release	9
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N/A

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

COST

ECONOMIC INDICATORS

SUNK CAPITAL: \$200

NPV: \$20,190.0

SUNK O&M: \$0

PI: 13.383

REMAINING COST: \$1,650

IRR: 135.0

TOTAL COST: \$1,850

SIMPLE PAYBACK: 2

ESTIMATE TYPE: Conceptual

BASE YEAR: 2005

				O&M Base	Environmental
Year	Capital Cost	O&M Cost	Total Benefit	Increase	Cost
SUNK	200	0	0	0	
OUT YEARS	0	0	0	0	
2005	1,500	0	0	0	0
2006	150	0	0	0	0
2007	0	0	5,000	0	0
2008	0	0	5,000	0	0
2009	0	0	5,000	0	0
2010	0	0	5,000	0	0
2011	0	0	5,000	0	0
2012	0	0	5,000	0	0
2013	0	0	5,000	0	0
2014	0	0	5,000	0	0
2015	0	0	5,000	0	0
2016	0	0	5,000	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	0	0	0	0	0
2023	0	0	0	0	0
2024	0	0	0	0	0

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

3

II. Project Economic Evaluation

Cost Assumptions

Costs: Engineering = \$150k Construction = \$1,500k

Risks

Based on conceptual estimate.

No significant marketing or utilization of ash will take place.
 Waste production (cubic yards per year):
 Fly Ash = 410,000
 Bottom Ash = 90,000

Based on historical data and similar projects.

 The existing dredge cells and ponds shall be utilized to the extent possible to obtain an additional ten years of disposal capacity. Support of plant business plan.

Benefit Assumptions

 Haul fly ash and bottom ash offsite to an existing permitted disposal site @ \$10/ton for 500,000 tons per year = \$5,000k per year for ten years.

Risks

Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Project ID

Rev#

KIF530

CSF: Achieve excellence in the Asset optimization and production processes.

II. Project Economic Evaluation

Project EconEval

Benefit Input Section

Unit: 70

Base Calc Year: 2005

	* •					·*•	~ '				
Fiscal Year	Heat Rate Imprvmn	Forced Outage Hours	Forced Derating MW	Forced Derating HRS	MWHL	O&M Base Increase (\$000's)	O&M Base Savings (\$000's)	Other Benefits Savings (\$000's)	Outage Duration Reductio n (HRS)	Project Cost (\$000's)	
2005	0	0	0	0	0	0	0	0	0	2,500	
2006	0	0	0	0	. 0	0	0	5,000	0	100	
2007	0	0	0	0	0	0	0	5,000	0		
2008	0	0	0	0	0	0	. 0	5,000	0	С	
2009	0	0	0	0	0	0	0	5,000	0	C	
2010	0	0	0	0	0	0	0	5,000	0	0	
2011	0	0	0	0	0	0	0	5,000	0	0	
2012	0	0	0	0	0	0	0	5,000	0	0	
2013	0	0	0	0	0	0	0	5,000	0	0	
2014	0	0	0	0.	0	0	0	5,000	. 0	0	
2015	0	0	0	0	0	0	0	5,000	0	0	
2016	0	0	0	0	0	0	0	5,000	0	0	
2017	0	0	0	0	0	0	0	0	0	. 0	
2018	0	0	0	0	0	0	0	0	0	0	
2019	0	0	0	0	0	0	0	0	0	0	
2020	0	0	0	0	0	0	0	0	0	0	
2021	0	0	Ó	0	0	0	0	0	0	0	
2022	0	0	0	0	0	0	0	0	0	0	
2023	0	0	0	0	0	0	0	0	0	0	

Page 4 of 5

05/06/2005 10:36:44 AM

Project Name

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Project ID

Rev#

KIF530

3

CSF: Achieve excellence in the Asset optimization and production processes.

II. Project Economic Evaluation Project EconEval(continued)

Benefit Value Section

Unit: 70

Base Calc Year: 2005

Fiscal Year	Heat Rate Benefit	MWH Improve In (000's)	Unit EFOR Impact	System EFOR Impact	O&M Base Savings (\$000's)	Other Benefits Savings	Outage Redctns Savings In (\$000's)	Benefit Value In (\$000's)
2005	0	0	0	0	0	0	0	0
2006	0	. 0	0	0	0	5,000	.0	5,000
2007	0	0	0	0	0	5,000	0	5,000
2008	0	0	0	0	0	5,000	0	5,000
2009	0	0	0	0	0	5,000	0	5,000
2010	0	0	0	. 0	0	5,000	0	5,000
2011	0	0	0	0	0	5,000	0	5,000
2012	0	0	0	0	0	5,000	0	5,000
2013	0	0	0	0	0	5,000	0	5,000
2014	0	0	0	0	0	5,000	0	5,000
2015	0	0	0	0	0	5,000	0	5,000
2016	0	0	0	0	0	5,000	0	5,000
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0

Page 1 of 6

Project Environmental Management Plan Outline

Prepared by: S.M. Haber/R. D. Powell Date: 4/24/04

1. Detail Description of Project:

KIF530 - Develop Fly Ash, Gypsum, and Bottom Ash Disposal Capacity: Scope will include expansion of dredge cell adjacent to existing dredge cell by construction of a new dike (CEC #5718). Scope also includes development of a waste stack for flyash, bottom ash, and gypsum within the existing perimeter dikes of the active ash disposal area (involving a future environmental assessment.)

			Environ Conc		Control Measures to be used
			<u>YES</u>	<u>NO</u>	
2.	Potenti	al environmental issues			
	A.	Air			
	1.	Fugitive Emissions:	\boxtimes		control of dusting
	2.	Open Burning:		\boxtimes	
	3.	New Source Review:		\boxtimes	
	4.	Other:		\boxtimes	
	В.	Water			
	1.	Site / Erosion Control:			for waste stacks and dike slopes
	2.	Sewage:		\boxtimes	· ·
	3.	Contaminated Runoff:		\boxtimes	runoff will be controlled within diked area
	4.	Process Wastewater (adding pollutants or rerouting flows):		\boxtimes	
	5.	Potentially affect:			
	5a.	Surface Water:		\boxtimes	Vernise for descriptions
	5b.	Groundwater:			stack will have less impact than existing ash pond
	5c.	Drinking Water Supply or Potable Water:		\boxtimes	

Page 2 of 6

			Environmental Concern?		Control Measures to be used	
			YES	NO		
	5d.	Wild or Scenic Rivers or Their Tributaries:			· ·	
	5e.	Stream on the Nationwide Rivers Inventory:		\boxtimes		
	5f.	Wetlands, Waterflow, Stream Channels, ditches or Stream Banks:				
	5g.	100-Year Floodplain:		\boxtimes	·	
	5h.	Unique or Aquatic Habitat:		\boxtimes		
	6.	Other:		\boxtimes		
C.		Solid Waste				
	1.	Garbage:		\boxtimes		
	2.	Construction/Demolition Waste:		\boxtimes		
	3.	Clearing Waste:		\boxtimes	· 	
	4.	Sandblasting Waste:			·	
	5.	Oil Contaminated Waste:		\boxtimes		
	6.	Other (e.g., sand, glass, etc.):				
D.		Hazardous Waste				
	1.	Painting Waste (solvents, etc.):		\boxtimes	<u></u>	
	2.	Sandblasting Waste (Hazardous):		\boxtimes		
	3.	Degreasing Solvents:				
,	4.	Corrosive Wastes (acids, caustics):		\boxtimes		
	5.	Pesticides:				
(6.	Other:		\boxtimes		
E.		Asbestos			·	
	1.	Insulation Waste:		\boxtimes		

Page 3 of 6

		Concern?		be used		
		YES	<u>NO</u>			
2.	Roofing Waste:		. 🛛			
3.	Floor Tile Waste:		\boxtimes			
4.	Other:			· 		
F.	РСВ					
1.	Handling & Storage:		\boxtimes			
2.	Liquid Waste Disposal:		\boxtimes			
3.	Equipment Disposal:		\boxtimes			
4.	Contaminated Debris Disposal:		\boxtimes	· · · · · · · · · · · · · · · · · · ·		
5.	Other (capacitors, transformers, etc.):		\boxtimes			
_						
G.	SPCC/BMP					
1.	Fuel/Lube/Insulating oil Storage:		\boxtimes	-		
2.	Oil Transfer (Procedure):		\boxtimes			
3.	Other:		\boxtimes	-		
H.	Underground Storage Tanks (UST's)					
1.	Contaminated Soil:		\boxtimes			
2.	Tank Disposal:		\boxtimes			
3.	Other:		\boxtimes			
I.	Above-ground Storage Tanks (AST's)					
1.	Contaminated Soil:		\boxtimes			
2.	Tank Disposal:		\boxtimes			
3.	Other:					
J.	Plant or Animal					
1.	Potentially affect:					

Page 4 of 6

		Environmental Concern?		Control Measures to be used
	•	<u>YES</u>	<u>NO</u>	.,
	Endangered, threatened or Special Status Species:		· ⊠	<u> </u>
	Migratory bird populations:		\boxtimes	·
	Unique or important terrestrial habitat:		\boxtimes	
2.	Potentially take prime or unique farmland out of production:		\boxtimes	
3.	Contribute to the spread of exotic or invasive species:		\boxtimes	
K.	Other:			
1.	Potentially affect:			
	Ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, management wildlife areas, recreational areas, greenways, or trails:			
	Historic structures, historic sites, Native American religious or Cultural properties, or archaeological sites:			

Page 5 of 6

3.		Environmental Permits/Notifications	Permit Received? Type Y N		2	Date of Notification	
	A	Air:		\boxtimes		- .	
	B.	Water:	\boxtimes		NPDE	<u>:S</u>	Verify no impact to discharge permits
	C.	Hazardous Waste:		\boxtimes		<u>-</u>	·
	D.	Asbestos:		\boxtimes			
	E.	PCB:		\boxtimes	∨	-	****
	F.	UST's / AST's:		\boxtimes			
	G.	Solid Waste:				-	Going from wet pond to dry stack
	H.	Other (i.e., Spill Notification):				_	
4.		Employee Training			Required Y	[? N	Provided / <u>Verified</u>
	A.	Hazardous Waste				\boxtimes	
	B.	Asbestos Competent Person				\boxtimes	
	C.	Emergency Spill/ Prevention				\boxtimes	
	D.	OSHA 1910.120				\boxtimes	
	E.	Other (e.g., Ammonia Awarene	ess): _			\boxtimes	
5.		Emergency Response					
		Is the Site Emergency Respon project? If not, a copy of any re attached to this plan.				Yes [⊠ No □
		Are all environmental concer CEC (see Appendix E)? If no specific CEC.				: Yes [□ No 🖾
		Do project activities result in er	nvironm	ental co	ncerns?	Yes [No □
		Are all Appendix E?				Yes [☐ No 🏻

Page 6 of 6

Project Environmental Management Plan Outline

If not, prepare a project-specific CEC.

Is a CE	Is a CEC required for this project?			es 🛚	No 🔲
	<u>Signatures</u>		<u>Date</u>		
Project Initiator/Manager:					
Site PA(E):					
Other Signatures: (as appropriate)					
Filed in EDMS					

Page 1 of 6

Project Environmental Management Plan Outline

Prepared by: S.M. Haber/R. D. Powell Date: 4/15/04

1. Detail Description of Project:

KIF530: Scope will include expansion of dredge cell adjacent to existing dredge cell by construction of a new dike (CEC #5718). Scope also includes development of a waste stack for flyash, bottom ash, and gypsum within the existing perimeter dikes of the active ash disposal area (involving a future environmental assessment.)

		Enviror Cond		Control Measures to be used
		<u>YES</u>	<u>NO</u>	
2. Poten	tial environmental issues			
A.	Air			
1.	Fugitive Emissions:	\boxtimes		control of dusting
2.	Open Burning:		\boxtimes	
3.	New Source Review:		\boxtimes	· · · · · · · · · · · · · · · · · · ·
4.	Other:		\boxtimes	· · · · · · · · · · · · · · · · · · ·
B.	Water			
1.	Site / Erosion Control:	\boxtimes		for waste stacks and dike slopes
2.	Sewage:		\boxtimes	
3.	Contaminated Runoff:		\boxtimes	runoff will be controlled within diked area
4.	Process Wastewater (adding pollutants or rerouting flows):			
5.	Potentially affect:			
5a	. Surface Water:			
5b	. Groundwater:			stack will have less impact than existing ash pond
5c	. Drinking Water Supply or Potable Water:		\boxtimes	<u> </u>
5d	. Wild or Scenic Rivers or Their Tributaries:		\boxtimes	

Page 2 of 6

			Conc		be used
			<u>YES</u>	<u>NO</u>	
	5e.	Stream on the Nationwide Rivers Inventory:		\boxtimes	
	5f.	Wetlands, Waterflow, Stream Channels, ditches or Stream Banks:		\boxtimes	
	5g.	100-Year Floodplain:		\boxtimes	 .
	5h.	Unique or Aquatic Habitat:		\boxtimes	
	6.	Other:		\boxtimes	_ ·
C,		Solid Waste			
	1.	Garbage:		\boxtimes	
	2.	Construction/Demolition Waste:		\boxtimes	
	3.	Clearing Waste:		\boxtimes	
	4.	Sandblasting Waste:		\boxtimes	*************************************
	5.	Oil Contaminated Waste:		\boxtimes	· .
	6.	Other (e.g., sand, glass, etc.):		\boxtimes	
D.		Hazardous Waste			
	1.	Painting Waste (solvents, etc.):		\boxtimes	· · · · · · · · · · · · · · · · · · ·
	2.	Sandblasting Waste (Hazardous):		\boxtimes	
	3.	Degreasing Solvents:		\boxtimes	
	4.	Corrosive Wastes (acids, caustics):		\boxtimes	<i></i>
	5.	Pesticides:			
	6.	Other:		\boxtimes	*.
E.		Asbestos			
	1.	Insulation Waste:		\boxtimes	
	2.	Roofing Waste:		\boxtimes	
	3.	Floor Tile Waste:		\boxtimes	

Page 3 of 6

Project Environmental Management Plan Outline

		Environ Conc		Control Measures to be used
		YES	<u>NO</u>	
4.	Other:		\boxtimes	
F.	РСВ			
1.	Handling & Storage:		\boxtimes	
2.	Liquid Waste Disposal:		\boxtimes	
3.	Equipment Disposal:		\boxtimes	
4.	Contaminated Debris Disposal:		\boxtimes	·
5.	Other (capacitors, transformers, etc.):		\boxtimes	
G.	SPCC/BMP			
1,	Fuel/Lube/Insulating oil Storage:		\boxtimes	
2.	Oil Transfer (Procedure):		\boxtimes	· · · · · · · · · · · · · · · · · · ·
3.	Other:		\boxtimes	· · · · · · · · · · · · · · · · · · ·
H.	Underground Storage Tanks (UST's)			
1.	Contaminated Soil:		\boxtimes	
2.	Tank Disposal:			
3.	Other:		\boxtimes	
l.	Above-ground Storage Tanks (AST's)			
1.	Contaminated Soil:		\boxtimes	
2.	Tank Disposal:		\boxtimes	
3.	Other:		\boxtimes	·
J.	Plant or Animal			
1.	Potentially affect:			
	Endangered, threatened ,or Special Status Species:		\boxtimes	
	Migratory bird populations:		\boxtimes	

Page 4 of 6

Project Environmental Management Plan Outline

		Environ Conc	mental <u>ern</u> ?	Control Measures to be used
		YES	NO	
ī.	Unique or important terrestrial habitat:		\boxtimes	<u> </u>
2.	Potentially take prime or unique farmland out of production:			
3.	Contribute to the spread of exotic or invasive species:			
K.	Other:			
1.	Potentially affect:			
	Ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, management wildlife areas, recreational areas, greenways, or trails:			
	Historic structures, historic sites, Native American religious or Cultural properties, or archaeological sites:			

Page 5 of 6

Project Environmental Management Plan Outline

3.		Environmental Permits/Notifications	Rece		<u>Type</u>	ļ	Date of Notification
	•	A:	Y	N N			
	Α.	Air:		\boxtimes			
a'	В.	Water:			<u>NPDES</u>	<u>S</u>	Verify no impact to discharge permits
	C.	Hazardous Waste:		\boxtimes			
	D.	Asbestos:		\boxtimes			
	E	PCB:		\boxtimes			
	F.	UST's / AST's:		\boxtimes			
	G.	Solid Waste:	\boxtimes				Going from wet pond to dry stack
	H.	Other (i.e., Spill Notification):			<u></u>		
4.		Employee Training			Required?		Provided / Verified
	Α.	Hazardous Waste]	
	B.	Asbestos Competent Person]	·
	C.	Emergency Spill/ Prevention]	
	D.	OSHA 1910.120					
	E.	Other (e.g., Ammonia Awarene	ess):]	<u> </u>
5.		Emergency Response					
		Is the Site Emergency Responsible project? If not, a copy of any reattached to this plan.				Yes 🛚	No 🗌
		Are all environmental concer CEC (see Appendix E)? If no specific CEC.				Yes 🗌	No 🖾
		Do project activities result in er	nvironm	ental co	ncerns?	Yes 🛚	No 🗌
		Are all Appendix E?				Yes 🗌	No 🖂

Page 6 of 6

Project Environmental Management Plan Outline

If not, prepare a project-specific CEC.

Is a Cl	EC required for this proje	ct?	Yes		No 🗌
	<u>Signatures</u>		<u>Date</u>		
Project Initiator/Manager:		in the second se	t ,	<u>.</u> <u>.</u> "	
Site PA(E):					
Other Signatures: (as appropriate)					•
Filed in FDMS				*	

Project Title: Develop Ash Storage PCN Number: KIF530

Phase I	Hours	Dollars	Avg. TVA Engr Hourly Rate Avg. Non TVA Engr Hourly Rate
Project Engr Mech Engr Elec Engr Civil Engr Systems Engr	220 100 100 240 0	\$9,240 \$4,200 \$4,200 \$10,080 \$0	
Non-TVA Engr Project Controls Cost Estimating	2570 40 24	\$185,040 \$1,680 \$1,008	
Sub Total	3294	\$ 215,448	
Phase II			
Project Engr Mech Engr Elec Engr Civil Engr	200 200 200 300	\$8,400 \$8,400 \$8,400 \$12,600	
Systems Engr Non-TVA Engr Project Controls Cost Estimating Engr Records	0 6000 80 24 16	\$0 \$432,000 \$3,360 \$1,008 \$672	
Sub Total	7,020	\$ 474,840	
Phase III			
Project Engr Mech Engr Elec Engr Civil Engr	220 200 200 300	\$9,240 \$8,400 \$8,400 \$12,600	
Systems Engr Non-TVA Engr Project Controls Engr Records	0 5750 40 24	\$0 \$414,000 \$1,680 \$1,008	
Sub Total	6,734	\$ 455,328	
Total	17,048	\$ 1,145,616	

\$42 \$72

Engineering Estimate Worksheet

Project Title: Develop Dry Fly Ash, Gypsum, and Bottom Ash Disposal PCN Number: KIF531

0

Current Phase: Phase Request: 2

i nase Nequest.	_			Cost/Hr
	w.	Hours	· Dollars	Avg. TVA Engr Hourly Rate \$42
Phase I				Avg. Non TVA Engr Hourly Rate \$72
Project Engr	Prin Engr	450	#C 200	CAD Dwg Support \$/Dwg \$150
Project Engr		150	\$6,300	
Mech Engr	·	ò	\$0 \$0	
Elec Engr I		0	\$0 \$0	
Civil Engr		975	پەر \$40,950	
Air, Gas Wtr & Yard Systems		0	\$40,930 \$0	
Comb Proc & Wtr Treatment		0	\$0 \$0	
Steam Cycle Systems		0	\$0 \$0	
Other Systems Engr (specify)	*** *** ***	ő	\$0	
Non-TVA Engr		5486	\$394,992	•
Other (Project Discovery)		952	\$39,984	
Project Controls Scheduling		120	\$5,040	
Project Controls Cost		120	\$5,040	
Cost Estimating		125	\$5,250	
Sub Total	İ	7928	\$ 497,556	
Odb Fotol		7020	Ψ 401,000	
Phase II				
Project Engr		0	\$0	
Mech Engr		0	\$0	
Elec Engr I		0	\$0	
Elec Engr II		0	\$0	
Civil Engr		0	\$0	
Air, Gas Wtr & Yard Systems		0	\$0	
Comb Proc & Wtr Treatment	· · · · · · · · · · · · · · · · · · ·	0	\$0	
Steam Cycle Systems		0	\$0	
Other Systems Engr (specify)		0	\$0	
Non-TVA Engr		0	\$0	
Other Orgs (specify)		0	\$0	
Project Controls Scheduling		0	\$0	
Project Controls Cost		0	\$0 2 0	
Cost Estimating Engr Records		0	\$0 \$0	Manage of the second of the se
-		0	. \$0	Management Concurrence
Sub Total	ı	0	\$ -	Eng Spt Peterson (Garrett)
Phase III				Mech NA
Project Engr		0	\$0	Elec 1 NA
Mech Engr		0	\$0	
Elec Engr I		0	\$0	Elec 2 NA
Elec Engr II		0	\$0	
Civil Engr		0	\$0	Civil Purkey (Petty)
Air, Gas Wtr & Yard Systems		0	\$0	
Comb Proc & Wtr Treatment		0	\$0	Systems NA
Steam Cycle Systems		0	\$0	
Other Systems Engr (specify)		0	\$0	Other Waldrep (Haber/Harless)
Non-TVA Engr		0	\$0	
Other Orgs (specify)		0	\$0	
Project Controls Scheduling		0	\$0	
Project Controls Cost		0	\$0 \$0	A . N. B
Engr Records	_	0	\$0	Avg. No. Dwgs
				<==CAD support - input the
	I			number of dwgs for DCA
CAD Dwg Support		0	œ.	conversion. This number can
CAD Dwg Support	<u> </u>		\$ -	be negotiated with support.
Sub Total		0	\$ -	
Total Project		7,928	\$ 497,556	

Note: Insert additional rows if needed for other organizations cost.

03/12/2009

FOSSIL AND HYDRO POWER FISCAL YEAR 2005 BUDGET ENTRY FORM (Dollars in Thousands)

PCN - Project Name	KIF530-KIF Develop Fly Ash, Gypsum & Bottom Ash Disposa	olop Fly A	sh, Gyps	um & Bott	om Ash D	isposal				Ē	Functional Account	Account		
Responsible Unit	18758										Locatio	Location/Unit	45/5	/5
Work Package / Descrip S	Short Code	oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
KIF530A-01 00	001D9VR	1	98	108										207
FE & Project Control														
			2	3										5
Plant Support Ph1		-								Α,				
				10	10	10	10	10		,				50
Engineering Ph2		-												
								15					-	15
GUBMK/HED Estimate														: :
					3									3
Plant Support Ph2														
										20			150	200
LL Material														
									10	10	10	10	10	20
Engineering Ph3												-		
									4	4	4	4	4	50
Plant Support Ph3														
									55	250	250	250	270	1,075
Installation														
														0
					_									0
		-	ŀ		ŀ	ŀ					-		- auconia	ć
		_												0
														0
											-	•		
	-													0
	Project Total	F	100	121	13	9	10	25	69	314	264	264	434	1,625
	-	-												

Page1 of 1

1 KIF530: Develop Fly Ash, Gypsum, and Botton	Bottom Ash Storage	ge						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	· -
က								
4								
5 Phase 1								
6 Engineering	200	50				250		
7 PE/PC/PS		20				20	•	
8 Plant Support		5		opinione de la participa de la constanta de la		S		
9 PSS - Inspection						0		
10								
11 Total Phase 1	200	75	0	0	0	275		
12								
13 Phase 2								
14								
15 Engineering (Systems and EDS)	0	0	70	300	0	370		
16								-
17 PE/PC/PS	0	0	25	30	0	55	•	
18								
19 GUBMK/HED (estimate)	0	0		35	0	35		
20 Plant Support	0	0	5	20	0	25		
21								
22 Long Lead Material (LLM)								
23 blank	0	0			0	0		
24 blank	0	0		4000	4000	8000		
25 total LLM	0	0	0	4000	4000	8000	•	
26								
27 Total Phase 2	0	0	100	4385	4000	8485	-	
28								

1 KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage	1 Ash Storag	as e						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
29 Phase 3								
30								,
31 Engineering	0	0	0	200	200	400		
32								
33 PE/PC/PS	0	0	0	15	35	50		
34							<u>.</u>	
35 Plant Support	0	0	0	20	20	40		
36								
37 Installation (x)								
38 GUBMK	0	0	0	20	20	40		
39 blank	0	0	0	0	0	0		
40 Total GUBMK	0	0	0	20	20	40		
41								
42 Turnkey Installation	0	0	0	3360	0	3360		
43 blank	0	0	0	0	0	0		
44 Total	0	0	0	3360	3725	7085		
45					The second secon			
46 Asbestos abatement (GUBMK)	0	0	0	0	0	0		
47								
48 Total Installation	0	0	0	3380	3745	7125		
49								
Total Phase 3	0	0	0	3615	4000	7615		
51								ese c
š.	200	75	100	8000	8000	16375		
Assumptions:								
1. Design and installation of system will be by turnkey contractor; scope similar to CUF	akey contract	or; scope sir	nilar to CUF	dry fly ash system.	ystem.			
2. Design of BOP interfaces will be by FE&TS		-						
3. FE&TS Lead will be Civil Department								
유	interface tie-ins							
						and the second s		

	woman (word for the day of the control with the control w	4	- 1					7	
2 Phase/Activity		FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
3				-				-	
4									
5 Phase 1									
6 Engineering		200	195				395		•
7 PE/PC/PS			12				12		
8 Plant Support			5				S		
9 PSS - Inspection							0		
10									
11 Total Phase 1		200	212	0	0	0	412		
12					-	_			
13 <u>Phase 2</u>									
14									
15 Engineering (Systems and EDS)		0	30	70	300	0	400		
16									
17 PE/PC/PS	-	0	20	25	30	0	75		
18									
19 GUBMK/HED (estimate)		0	15	0	0	0	15		
20 Plant Support		0	3	0	0	0	3		
21									
22 Long Lead Material (LLM)									
23	blank	0	200	200		0	400		
24	blank	0	0		2500	4000	6500		
25	total LLM	0	200	200	2500	4000	0069		
26									
27 Total Phase 2		•	0,0	-04	3000	000,	0001		

1 KIF530: Develop Fly Ash, Gypsum, and Bottom	n Ash Storage	a s						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
29 Phase 3							•	
30								
31 Engineering	0	25	30	200	200	455		
32								
33 PE/PC/PS	0	25	25	15	35	100		
34					-			-
35 Plant Support	0	20	20	20	20	80		
36								
37 Installation (x)							A	
38 GUBMK	0	0	0	20	20	40		
39 blank	0	0	0	0	0	0		
40 Total GUBMK	0	0	0	20	20	40	•	
41								
42 Turnkey Installation	0	1075	1,135	1960	3725	7895	5	
43 blank	0	0	0	0	0	0		
44 Total	0	1075	1135	1960	3725	7895		
45								
46 Asbestos abatement (GUBMK)	0	0	0	0	0	0		
47								
48 Total Installation	0	1075	1135	1980	3745	7935		
49								
Total Phase 3	0	1145	1210	2215	4000	8570		
	100000						grand Applications	
	200	1625	1505	5045	8000	16375		
Current funding	200	75	100	8000	8000	16375		
Differential	0	1550	1405	-2955	0	0		
Assumptions:		-						
1. Original project PJ was for a DFA system; Desi	gn and insta	lation of syst	em was to be	by turnkey	gn and installation of system was to be by turnkey contractor; scope similar to	pe similar to C	CUF dry fly ash system.	stem.
2. Design of BOP interfaces will be by FE&TS					¢			:
3. FE&TS Lead will be Civil Department					~			
An outage will be required for some BOP inter	face tie-ins							
5. Ph 1 eng includes Peer review (\$50k), study of	deep french	deep french drains (\$70k), answering permit questions (\$75k)	, answering	oermit questi	ons (\$75k)			
						•	-	-

1 KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage	m Ash Stora	ge						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
E	3000	200						
4 A STATE OF THE PROPERTY OF T		1000						
5 Phase 1						And the second s	-	
6 Engineering	200	20				250		
7 PE/PC/PS		20				20		
8 Plant Support		5				5		
9 PSS - Inspection						0		-
10								
11 Total Phase 1	200	75	0	0	0	275		
12								
13 Phase 2							4	
14								
15 Engineering	0	0	70	300	0	370		
16								
17 PE/PC/PS	0	0	25	30	0	55		
18								,
19 GUBMK (estimate)	0	0		35	0	35		
20 Plant Support	0	0	5	20	0	25		
21								
22 Long Lead Material (LLM)								
23 Turbine Materials and PSS Rehab	0	0			0	0		
24 blank	0	0		4000	4000	8000		
25 total LLM	0	0	0	4000	4000	8000		
26							``	
27 Total Phase 2	0	0	100	4385	4000	8485		
28								

1 KIF53	1 KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage	n Ash Stora	ge						
2 Phase/Activity	Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
29 Phase	3								
30							The same special parameters are as a second		
31 Engineering	ering	0	0	0	200	200	400		
32						And the state of t			
33 PE/PC/PS	/PS	0	0	0	15	35	50		
34									
35 Plant Support	Support	0	0	0	20	20	40		
36						TO THE REAL PROPERTY AND ADDRESS OF THE PARTY		,	
	Installation (x)								
38	GUBMK	0	0	0	20	20	40	•	
39	blank	0	0	0	0	0	0		
40	Total GUBMK	0	0	0	20	20	40		
41							Maria - 1,000		
42	Turnkey Installation	0	0	0	3360	0	3360		Alle de Alle de La Carte de La
43	blank	0	0	0	0	0	0		
44	Total	0	0	0	3360	3725	7085		
45								100000000000000000000000000000000000000	,
46	Asbestos abatement (GUBMK)	0	0	0	0	0	0		
47									
48	Total Installation	0	0	0	3380	3745	7125		
49									
50 Total Phase	3	0	0	0	3615	4000	7615		
51									
52 Total:	52 Total: All Phases	200	75	100	8000	8000	16375 ·		
Assum	A commutions.								
1			1						
1. Des	1. Design and installation of system will be by tur	nkey contrac	by turnkey contractor; scope similar to	milar to CUF	dry fly ash system	ystem.		4	,
3. FF&	3 FF&TS I ead will be Civil Denartment								
/ V / V	18								
		menace ne-ms							
-								•	
						annual transfer of the second			

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

n-

I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A

Phone: 423/751-6426

Responsible Mgr

Name: DAVIS,MICHAEL D Phone: 423/751-7864

Problem Description

Project

Type: Capital

Cat: ASSET PRESERVATION

Prgm: No Program

Estimated Actual

Start Date: 10/01/2003 In-Srvc Date: 09/30/2008

Outage Date:

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity. In addition, planned scrubbers for Kingston will produce an additional high-volume by-product which may be co-disposed with fly ash and bottom ash beginning in FY 2009.

Project Scope

Perform detailed analysis to determine the overall structural, environmental, and operational viability of continuing to raise and dredge to the existing dredge cells, considering the recent failure along Swan Pond road and the saturation of the lower dikes along the backwaters of the Emory river.

Perform engineering analysis and collect field data as required to develop a detailed design for maximizing the disposal capacity of fly ash, bottom ash, and gypsum on the existing ash pond complex at the Kingston Fossil Plant while maintaining the required Free Water Volume. The detailed design should consider economic, structural, environmental, and operational issues and impacts associated with long term ash disposal. The study should focus on the maximization of ash and gypsum storage on the existing dredge cells and ponds, as needed to provide 10 years or more of ash disposal capacity. Ash production is assumed to be 410,000 cubic yards per year of fly ash and 90,000 cubic yards per year of ponded bottom ash. Gypsum production is assumed to be 750,000 cubic yards per year. It should be assumed that no significant marketing or utilization of ash or gypsum will take place. The engineering suitability of ash currently produced at Kingston for storage in an engineered stack should be verified through testing (if this has not already been satisfactorily completed). A part II permit package is to be submitted to Environmental Affairs by June 1. Fossil Engineering is to work with Environmental Affairs to complete a CEC (Categorical Exclusion Checklist) for with input from RSO&E (if needed). If the CEC leads to a requirement that an Environmental Assessment (EA) or Environmental Impact Statement (EIS) must be prepared, FE will consult with Environmental Affairs for direction on how to proceed.

Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2007. Permitted disposal capacity for gypsum by FY 2009.

Other Options/Alternatives

Reduce or discontinue plant operations such that no ash is produced, or locate an existing off-site permitted disposal area and pay a tipping fee to haul all of Kingston's ash there.

Reason For Change

No Information Available

News Release

No Information Available

Page 1 of 3

04/14/2004 10:32:10 AM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

COST

ECONOMIC INDICATORS

SUNK CAPITAL PROJECTS: \$0

NPV: \$8,864.0

SUNK O&M PROJECTS: \$0

PI: 1.877

REMAINING COST: \$16,300

IRR: 53.0

TOTAL COST: \$16,300

SIMPLE PAYBACK: 6

ESTIMATE TYPE: Order of Magnitude

BASE YEAR: 2004

Year	Capital Projects	O&M Projects	Benefit	O&M Base	Environ. Cost
SUNK	0	0	0	0	
OUT YEARS	0	0	0	0	
2004	200	0	0	0	0
2005	0	0	0	0	0
2006	100	0	0	0	0
2007	8,000	0	5,000	0	0
2008	8,000	0	5,000	0	0
2009	0	0	5,000	0	0
2010	0	. 0	5,000	0	0
2011	0	0	5,000	0	0
2012	0	0	5,000	0	0
2013	0	0	5,000	0	0
2014	0	0	5,000	0	0
2015	0	0	5,000	0	0
2016	0	0	5,000	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	0	0	0	0	0
2023	0	0	0	0	0

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

Project ID

KIF530

CSF: Achieve excellence in the Asset optimization and production processes.

II. Project Economic Evaluation

Cost Assumptions

- Engineering = \$200k in FY 04; \$100k in FY 06.
- 2. Implementation (Develop by-product handling system.)= \$8,000k in FY 07; \$8,000k in FY 08.

Risks

Based on similar projects.

Conceptual estimate for turn-key system.

Benefit Assumptions

Haul fly ash and bottom ash offsite to an existing permitted disposal site @ \$10/ton for 500,000 tons per year = \$5,000k per year for ten

Risks

Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

n

I. Project Description

Organization

Owner: FPG

Lead: Yard Operations

Location

Loc: KIF

Technical Contact

Name: HEDGECOTH, MELISSA A

Phone: 423/751-6426

Responsible Mgr

Name: DAVIS,MICHAEL D Phone: 423/751-7864

Problem Description

Project

Type: Capital

Cat: ASSET PRESERVATION

Prgm: No Program

Estimated Actual

Start Date: 07/30/2003 In-Srvc Date: 09/30/2008

Outage Date:

Analysis of recent dike failure in the existing dredge cells has raised uncertainties regarding the current long-term disposal plans for fly ash and bottom ash. An emergency cell was developed (O&M) which will provide a maximum of three years of fly ash and bottom ash capacity. In addition, planned scrubbers for Kingston will produce an additional high-volume by-product which may be co-disposed with fly ash and bottom ash beginning in FY 2009.

Project Scope

Expansion of dredge cell adjacent to existing dredge cell by construction of a new dike. Scope will also include development of a waste stack for flyash bottom ash, and gypsum within the existing perimeter dikes of the active ash disposal area.

Perform detailed analysis to determine the overall structural, environmental, and operational viability of continuing to raise and dredge to the existing dredge cells, considering the recent failure along Swan Pond road and the saturation of the lower dikes along the backwaters of the Emory river.

Perform engineering analysis and collect field data as required to develop a detailed design for maximizing the disposal capacity of fly ash, bottom ash, and gypsum on the existing ash pond complex at the Kingston Fossil Plant while maintaining the required Free Water Volume. The detailed design should consider economic, structural, environmental, and operational issues and impacts associated with long term ash disposal. The engineering suitability of ash currently produced at Kingston for storage in an engineered stack should be verified through testing (if this has not already been satisfactorily completed). A part II permit package is to be submitted to Environmental Affairs.

Scope will also include the design, materials procurement, and installation as necessary to support the engineering study findings.

Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2007. Permitted disposal capacity for gypsum by FY 2009.

Other Options/Alternatives

Reduce or discontinue plant operations such that no ash is produced, or locate an existing off-site permitted disposal area and pay a tipping fee to haul all of Kingston's ash there.

Reason For Change

New project.

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

Project ID

Rev#

KIF530

0

CSF: Achieve excellence in the Asset optimization and production processes.

News Release

No Information Available

Page 2 of 4

04/28/2004 10:10:48 AM

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY

CSF: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

II. Project Economic Evaluation

COST

ECONOMIC INDICATORS

SUNK CAPITAL PROJECTS: \$0

NPV: \$8,864.0

SUNK O&M PROJECTS: \$0

PI: 1.877

REMAINING COST: \$16,300

IRR: 53.0

TOTAL COST: \$16,300

SIMPLE PAYBACK: 6

ESTIMATE TYPE: Order of Magnitude

BASE YEAR: 2004

Year	Capital Projects	O&M Projects	Benefit	O&M Base	Environ. Cost
SUNK	0	0	0	0	
OUT YEARS	0	0	0	0	
2004	200	0	0	0	0
2005	0	0	0	0	0
2006	100	0	0	0	0
2007	8,000	0	5,000	0	0
* 2008	8,000	0	5,000	0	0
2009	0	0	5,000	0	0
2010	0	0	5,000	0	. 0
2011	0	0	5,000	0	0
2012	0	0	5,000	0	0
2013	0	0	5,000	0	0
2014	0	0	5,000	0	0
2015	0	0	5,000	0	0
2016	0	0	5,000	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	0	0	0	0	0
2023	0	0	0	0	0

Project Name

KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY **CSF**: Achieve excellence in the Asset optimization and production processes.

Project ID

Rev#

KIF530

1

II. Project Economic Evaluation

Cost Assumptions

Engineering = \$200k in FY 04; \$100k in FY 06.

Risks

Based on similar projects.

2. Implementation (Develop by-product handling system.)= \$8,000k in FY 07; \$8,000k in FY 08.

Conceptual estimate for turn-key system.

3. No significant marketing or utilization of ash or gypsum will take place.

Based on historical data (ash) and similar projects (gypsum).

Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000

4. The existing dredge cells and ponds shall be utilized to the extent possible to obtain an additional ten years of disposal capacity.

Support of plant business plan.

Benefit Assumptions

 Haul fly ash and bottom ash offsite to an existing permitted disposal site @ \$10/ton for 500,000 tons per year = \$5,000k per year for ten years.

Risks

Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.



STATE OF TENNESSEE

DEPARTMENT OF ENVIRONMENT AND CONSERVATION KNOXVILLE ENVIRONMENTAL FIELD OFFICE

2700 MIDDLEBROOK PIKE, SUITE 220 KNOXVILLE, TENNESSEE 37921-5602

PHONE (865) 594-6035 STATEWIDE 1-888-891-8332

FAX (865) 594-6105

April 29, 2005

RECEIVED

MAY 1 3 2005

Mr. Gordon Park
Manager of Permitted Programs
Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402-2801

ENVIRUNT
FOSSIL POWEA GROUP

RE: Proposed modification to approved construction and operation plans - New leachate breakout remediation, collection, and transfer system for the lower west and south slopes of the Kingston Power Plant Coal Ash Fill, IDL 73-0094

Dear Mr. Park:

The revised plan for TVA Kingston Power Plant Coal Ash Fill, submitted to our office by TVA Fossil Engineering Services on April 27, 2005, has been reviewed in accordance with Rule Chapter 1200-1-7, Solid Waste Processing and Disposal. This modification consists of leachate collection trench drains at the 775, 781, and 595 elevation bench levels around the west and south sides; a toe drain and improved drainage ditch around the toe of the fill on the west side; and a new collection/retention pond with force main to a channel leading to the ash pond. The plan also calls for geonet to be installed at the toe in the vicinity of the original breakout. We find that the revised plan meets the regulatory requirements, and this design is an improvement over the temporary collection/transfer system that was installed to correct the existing problem. agree that this revision should be considered a minor modification, and we are therefore approving the plan as submitted. In all aspects of construction and operation affected by the modification, this plan will replace and supercede the original plan.

Mr. Gordon Park April 29, 2005 Page 2

Work may begin to install the features included with this modification at any time when the weather is suitable and the necessary equipment and materials can be mobilized to the site, but work must begin no later than June 1; 2005, in accordance with your suggested schedule. Installation of the system shall be completed not later than August 31, 2005.

An approved copy of the modified plan is enclosed for your use. If you have any questions concerning this matter, do not hesitate to contact me.

Yours truly,

Rick Brown

Environmental Engineer

k (how

Knoxville Field Office Manager

my 2 look

Division of Solid Waste Management

cc: DSWM, Nashville Central Office

RSB /tvaknglcsmda.doc

minrmod

CR # KIF530 001 R0

PART 1: Genera	al Information						
PART 1A: PROJECT & INITIATOR INFORMATION							
Project Title: KIF530: Develop Dry Fly Ash/Bottom Ash Capacity DCN # NA PA # PCN # KIF530 WO #	Location /Units: Yard Other Ref	_					
Check One: ☐ Capital ☐ Job Order ☐ O&M ☐ Other:	,						
Comments:							
Initiator Name: Stan Haber Position: P	ROJECT ENG	Date: 01/26/05					
PART 1B: REQUESTED CHANGE							
Move the target date associated with the activity "Preliminary Engineering Comple	ete (French Drain)" as indicated below.						
PART 1C: CAUSE FOR CHANGE							
☐ Constructability Issue (Interference) ☐ Insufficient Craft Labor ☐ Design Deficiency or Error ☐ Improve Operability / Ma ☐ Rework ☐ Inadequate Scope Definition Other Cause or Explanation : French drain study requires data collection that will approximate the collection of the coll	intainability 🔯 Oth						
PART 1D: JUSTIFICATION							
Preliminary engineering requires analysis of dike borings prior to finishing study of analysis.	f French drains. Additional time is requir	ed to allow for data collection and					
PART 1E: CLASSIFICATION							
Change Is: Belective Required Has Work Associated With This Change Begun? No Yes (Explain Below) Is Limited Approval Needed Prior To Full Approval: No Yes -Amount Needed: Date Needed: Comment / Explanation: Project is in the study phase.							
PART 2: Initiating Or	ganization Approval						
zzata zi matardag ozi							
Line Manager: Roger Waldrep Date:	Department Manager : Dennis Lundy	Date:					
PART 3:	Impacts						
PART 3A: SCHEDULE IMPACT							
Targeted Milestones Affected By This Change: Activity LDKAK530PC (Preliminary Engineering Complete)	Current Date 04 Feb 05	Requested Date 31 Mar 05					
Total July 2014 4:0501 C (110/minuty Engineering Complete)	0410003	31 Mai 03					
PARMA D. COCKETAGO COM							
Comments:	or Org Breakdown Info Attached						
PART 3C: OTHER IMPACTS Claimed Benefit	□ O&M Manpower □ Permit □ ORI Milestone □ Project □ Performance □ Safety	t Churn Other					
PART 4: Fina	d Approval	part from aparts of the appearance of the strength					
FPEP Approval Required : No Yes Date Obtained							
Approve Approved (No Additional Funding) Limited Approva	l (See Comments) Reject						
Authorizing Signature: Tit	le:	Date:					
Comments:							

CR # KIF530 001 R0

	PART 5: Review (Or	ptional)	and the second	and the second	
PART 5A: RECOMMENDED ACTION					
Name	Job Title	Approve	Reject ¹	Limited Approval ¹	Date
1- Stan Haber	Project Engineer				
2-	Principal Engineer .				***************************************
3- Roger Waldrep	Manager, Project Engineering			. 🗖 :	•
4- Dennis Lundy	Manager, FE&TS EDS				
5-					
6- :					
7-					A*************************************
8-					
☐ Information Attached		1 – Provid	e Comments	s If Rejected or Limited	Approval
PART 5B: COMMENTS					
Reviewer 1		***************************************	V/24///	######################################	***************************************
Reviewer 2			AND THE PROPERTY OF THE PROPER	.55.0000000000000000000000000000000000	***************************************
Reviewer 3		***************************************			
Reviewer 4					
Reviewer 5					
Reviewer 6					
Reviewer 7					
Reviewer 8					***************************************

			PART 6: Cost B	reakdov	wn (Optiona	l)		
PART 6A: CONSTRUCTIO	N PARTI	NER						PRODUCE LEGIS
PA#		Work Order #	PCS:			PM/PE:		
Cost Type	MHs	Dollars	Cost Type	MHs	Dollars	Cost Type	MHs	Dollars
Craft Labor			Heavy Equipment			Consumables		
Staff			Tagged Tools	The second secon	And the state of t	Office Supplies	***************************************	
Travel/Living Expenses			Small Tools	Concorner metalence on concentration		TVA Subs	***************************************	
Partner Subcontracts		***************************************	Materials	\$		OCIP		en e
Fee			Other-See Estimate	<u> </u>				***************************************
PART 6B: ENGINEERING	}							· · · · · · · · · · · · · · · · · · ·
TVA Engineering	MHs	Dollars	Engineering Partner	MHs	Dollars	Other		Dollars
Mechanical			Mechanical	<u> </u>		Long Lead Material		
Electrical			Electrical	***************************************	***************************************	Other:	TO THE PERSON NAMED OF THE	
Civil			Civil	-		Other:		***************************************
Other:		***************************************	Other:	·		Other:	er conservation on the section of th	
Other:			Other:	***************************************		Other:	allies dels a des dispersions en propriet es en en espera	

CR # KIF530 002 R0

the state of the s	PART 1: Gener	al Informatio	on					
PART 1A: PROJECT & INITIATOR INFORMA								
Project Title: KIF530: Develop Dry Fly Ash/Bottom DCN # NA PA # PCN # KI		Location /Units: Y Other Ref	(ard	:				
Check One: ☐ Capital ☐ Job Order ☐ O&M ☐ O	ther:							
Comments:			econoccio coccion					
Initiator Name: Stan Haber	Position: I	PROJECT ENG		Date: 03/12/05				
PART 1B: REQUESTED CHANGE			i er					
Move the target date associated with the activity "Prel	liminary Engineering Compl	ete (French Drain)	" as indicated below.					
PART 1C: CAUSE FOR CHANGE								
Design Deficiency or Error	☐ Insufficient Craft Labor ☐ Improve Operability / Mail Inadequate Scope Definitives data collection that will	tion	Other					
Engineering of French Drains will not be complete until April 29, 2005.								
PART 1E: CLASSIFICATION								
Change Is: Elective Required Has Work A Is Limited Approval Needed Prior To Full Approval: Comment / Explanation: Project is in the study phase.	Change Is: ☐ Elective ☒ Required Has Work Associated With This Change Begun? ☐ No ☒ Yes (Explain Below) Is Limited Approval Needed Prior To Full Approval: No ☒ Yes -Amount Needed: Date Needed:							
PA	RT 2: Initiating Or	ganization A	pproval					
Line Manager: Roger Waldrep	Date:	Department Ma	anager: Dennis Lundy	Date:				
are all the second of the	PART 3:	Impacts		110				
PART 3A: SCHEDULE IMPACT		•		STATE OF THE STATE				
Targeted Milestones Affecte			Current Date	Requested Date				
Activity LDKAK530PC (Preliminary Engineering Co	mplete)		31 MAR 05	29 APR 05				
PART 3 B: COST IMPACT Change In Manhours: 0 Change In \$: \$0 Comments:	☐ Detail Est and	or Org Breakdow	n Info Attached					
PART 3C: OTHER IMPACTS Claimed Benefit	☐ Field Support ☐ Material Contract ☐ O&M Cost	O&M Man ORI Milest Performance	one 🔲 Project (☐ Subcontractor Churn ☐ Other				
	PART 4: Fin	al Approval						
FPEP Approval Required: ☐ No Yes ☐ Date (Obtained							
☐ Approve ☐ Approved (No Additional Fundi	ing)	al (See Comments)	Reject					
Authorizing Signature:	Tr:	itle:		Date:				

	PART 5: Review (O	otional)		and the second	500
PART 5A: RECOMMENDED ACTION	·				
Name	Job Title	Approve	Reject ¹	Limited Approval ¹	Date
1- Stan Haber	Project Engineer				
2-	Principal Engineer				
3- Roger Waldrep	- Manager, Project Engineering				
4- Dennis Lundy	Manager, FE&TS EDS				-
5-					
6-					
7-		· 🗆 📗			**************************************
8-					
☐ Information Attached		1 – Provid	e Comments	If Rejected or Limited	Approval
PART 5B: COMMENTS					
Reviewer 1		***************************************	***************************************		
Reviewer 2			***************************************		***************************************
Reviewer 3			***************************************		***************************************
Reviewer 4		***************************************			
Reviewer 5			Managerhaussing von Länz Chradel formungsgegegegeg		
Reviewer 6			***************************************		
Reviewer 7					
Reviewer 8		***************************************	######################################	Million and a finite and a communication and a second and apply and appropriate any appropriate and a second	

			PART 6: Cost B	reakdov	vn (Optiona)		
PART 6A: CONSTRUCTIO	N PART	NER				,		
PA #		Work Order#	PCS:			PM/PE:		
Cost Type	MHs	Dollars	Cost Type	MHs	Dollars	Cost Type	MHs	Dollars
Craft Labor			Heavy Equipment			Consumables		
Staff			Tagged Tools			Office Supplies	***************************************	
Travel/Living Expenses			Small Tools			TVA Subs	***************************************	1
Partner Subcontracts			Materials			OCIP		
Fee			Other-See Estimate					
PART 6B: ENGINEERING	ř							
TVA Engineering	MH	s Dollars	Engineering Partner	MHs	Dollars	Other		Dollars
Mechanical			Mechanical			Long Lead Material		
Electrical			Electrical			Other:		
Civil			Civil			Other:	***************************************	
Other:			Other:			Other:	***************************************	
Other:			Other:			Other:	***************************************	

Date: 01/09/2006 01:05:13 PM Owner Org FPG

Lead Org Yard Operations
Prol. Id: KIF530

Proj. Desc. KIF.-DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Tennessee Valley Authority Project Justification System

	06 to		itain I. The um 5 is 1	r later.			118118 118118	ngn	
	from FY05 to FY	13,619K	in a facility to con e current ash pone stack due to gyps ed budget in FYO n and construction he new gypsum he scope of the K	(1) as there are no vision for FY07 o	ipport of Phase 3	oudget i system with no in flow represents	capacities willi ue	system with no h flow represents capacities with de	
1 1	rryforward \$48K	get Decrease of \$	o permit and design gypsum inside the gypsum inside the minsula. Increase a recommendation and permitting of the didressed under the gypsum of the grant transfer and the second of the gypsum of the	action item (see F entified by this re-	to Definitive in su	o overall project l d on a dry fly ash New project cas	in FY'05.	d on a dry fly ash New project cas gypsum disposal in FY'05.	
In-Service Date Base Year Reason for Change	Spendplan change to carryforward \$48K from FY05 to FY06 to complete project closure.	Scope Reduction + Budget Decrease of \$13,619K	The initial project was to permit and design a facility to contain fly ash, bottom ash, and gypsum inside the current ash pond. The project is now focused on the existing ash stack due to gypsum being permitted on the peninsula. Increased budget in FY05 is due to a change in design recommendation and construction technique. The design and permitting of the new gypsum disposal facility will be addressed under the scope of the KIF FGD addition project.	This clears the previous action item (see R1) as there are no funding requirements identified by this revision for FY07 or later.	Upgraded estimate type to Definitive in support of Phase 3 authorization.	Cash Flow, No Change to overall project budget Initial approval was based on a dry fly ash system with no construction until FYOr. New project cash flow represents	neverophient of asti and gypoint disposal capacities with design and construction starting in FY'05. Cash Flow, No Change to overall project budget	Initial approval was based on a dry fly ash system with no construction until FY'07. New project cash flow represents development of ash and gypsum disposal capacities with design and construction starting in FY'05.	New project.
r Rea	Sper	Scop	The i fly as proje being due to techn dispo FGD	This	Upgrautho	Cash Initia const	and c	Initia const devel and o	New
Base Yea	2005	2005		-		2005	2004		2004
In-Service Date	9/16/2005	9/16/2005				9/30/2008	9/30/2008		9/30/2008
Total Cost	2,511	2,756				500	16,375		16,375
Est. Type	1	Definitive				Conceptual	Conceptual		Conceptual
<250k Approval		-							
<250k Status									
PRC Approval	10/28/2005	7/18/2005		 		1/21/2005	10/1/2004		6/30/2004
PRC Status	Approved	Approved				Not Reviewed	Under Review		Under Review
Rev	4	£				2	-		0

	-	etion Notice llation Notice	> :			
Title of Project Work Document	Develop F	ly Ash & Bottom Ash [· · · · · · · · · · · · · · · · · · ·		Project Work Document No.	KIF530
Organization	FPG - Yar	d Operations	Location (County/State)	Roane/TN	•	
(or retired) as a resu the capital project is documentation.	ult of comp cancelled	completed work form pleting the authorized of pleting the authorized of pleting dredge cent to existing dredge	capital project. Asse roject journal vouche	ts should be lister or and attach a c	ed at the retirem opy of this form	ent unit level. If as supporting
development of a waarea.	aste stack	for fly ash and bottom	ash within the exist	ing perimeter dik	ces of the active	ash disposal
Scope will also inclu	ide the de	pe submitted to Enviro sign, materials procure neering study findings	ement (pumps and p	iping, french dra	ins), and installa	ition as
Completion Analys		al Assets Added (or	Retired) - Retireme	nt Unit Level:		
			*			*
		to the work order as a order completion, suc				equipment were
	Date		Approved By:	· · · · · · · · · · · · · · · · · · ·		Date Approved:
Construction Work S	Started on	01Jun05	Stan Haber			01Jun05
Project Com	pleted on	14Nov05	Stan Haber	·		14Nov05
Assets Pla Removed From S	aced In or Service on	30Sep05	Harold Catlett			30Sep05
Accepted by Organ	Operating ization on	30Sep05	Harold Catlett			30Sep05
To be used by Fixe	d Assets	Accounting				
Proje to Completed	ect Closed d Plant by			Date _		-
Project Closing Rev	viewed by		11/2/2011	Date _		

TVA 4013 [11-2005]

Project Review - Performance Impact Checklist

Page 1 of 2

Project Name:

Develop Dry Fly ash, Gypsum, and Bottom Ash Disposal Capacity

Location:

Kingston

PCN

KIF530

PERFORMANCE PARAMETERS	Improve	No Impact	Degrade	COMMENTS
Reliability				
Frequency of failure (MTBF)	<u> </u>	XX		
Frequency of deratings				
Availability				
Planned outage durations				
Forced outage durations				
Unit deratings (MW and duration)				
Repair/replacement time (MTTR)				
Frequency of corrective/preventive		\boxtimes	П	
maintenance				
MW output (unit capability)				
Thermal				
Net heat rate (Btu/kWh) – Identify in] 1	·	
the Comments the specific Heat Rate				
Parameter(s) or process indicator(s) that is(are) affected				
Station service usage				
Customer Requirements	<u> </u>			· · · · · · · · · · · · · · · · · · ·
On-line time (+/- 30 minutes)		<u> </u>		
AGC availability	 		<u> </u>	
	<u> </u>		<u> </u>	
Net dependable capacity	<u> </u>		Щ	
Voltage control	<u> </u>			
Minimum load	-	\boxtimes		
Unit ramp time				
Cost				
Fuel costs (coal, limestone, chemicals)	<u> </u>	\boxtimes		
Fuel handling costs				
Operations labor costs		\boxtimes		
Maintenance labor costs			\boxtimes	
Waste disposal costs (solid or hazardous)		\boxtimes		
Inventory costs	 			
Other costs (identify in Comments)	 			Electrical power required
Safety		<u> </u>		Liectrical power required
Public safety			[7]	
Employee Safety		H	<u> </u>	
Equipment Safety	 	$\vdash d$	ㅡ뭐	
Other Performance Impacts			<u> </u>	
Water chemistry specifications		K21		
LIST OTHER IMPACTS BELOW	<u> </u>			
LIST OTHER IMPACTS BELOW				
)	 		Ц	
	<u> </u>		Щ	
			Ц	
			<u> </u>	

Project Review - Performance Impact Checklist Page 2 of 2

Project Name:

Project Engineer:

Stanley M. Haber

Develop Dry Fly ash, Gypsum, and Bottom Ash Disposal Capacity

Location:

Kingston

PCN

KIF530

Date:

PERFORMANCE PARAMETERS	Improve	No Impact	Degrade	COMMENTS
Environmental				
NOTE: Initiate the project EMP and evalu	ate the follo	wing envir	nmental impac	ts in conjunction with completing th
first column of the EMP.	ate the folio	wing cirvin	mineritai impac	a in conjunction with completing the
Air emissions			П	
SO ₂	1 6		H	
NO _X	 			
Particulate			T T	· · · · · · · · · · · · · · · · · · ·
Hg	 		Ħ	
Quantity of fuel burned				The second secon
Ash pond toxicity	 			
CEMS /COMS availability	十		H	
NPDES (Water) discharges	T		- Fi	
Shoreline/river impacts	 			
SPCC/IPP impacts (Fuel, oil, chemical storage)				ternation de la circum en communicate de de debit in april producte de la communicación de describación de la c
3.7				· · · · · · · · · · · · · · · · · · ·
EMP Initiated				YES NO
Permitting/Notifications Identified		I		YES NO
PROCEDURE CHANGES	Revisions	No Changes	IDE	ENTIFY PROCEDURES
Operations			 	
Maintenance	N	H	· · · · · · · · · · · · · · · · · · ·	the state of the s
Environmental	X	H	, , , , , , , , , , , , , , , , , , , 	· · · · · · · · · · · · · · · · · · ·
Safety				
PEOPLE PARAMETERS	Needed	No Impact		COMMENTS
People				
Operations Training				
Maintenance Training			· · · · · · · · · · · · · · · · · · ·	
Environmental Training				
Manpower availability		\overline{a}		

Project Review - Performance Impact Checklist Page 1 of 2

Project Name: Develop Dry Fly ash, Gypsum, and Bottom Ash Disposal Capacity

Location: Kingston PCN KIF530

PERFORMANCE PARAMETERS	Improve	No Impact	Degråde	COMMENTS
Reliability				
Frequency of failure (MTBF)		<u> </u>		
Frequency of deratings			H	
Availability				
Planned outage durations				
	 		<u> </u>	
Forced outage durations	<u> </u>	X		
Unit deratings (MW and duration)				
Repair/replacement time (MTTR)			<u> </u>	
Frequency of corrective/preventive				
maintenance MW output (unit capability)	<u> </u>	<u> </u>		
Thermal		\boxtimes		
Net heat rate (Btu/kWh) – Identify in				
the Comments the specific Heat Rate			_	
Parameter(s) or process indicator(s)				
that is(are) affected	*		'	
Station service usage	П		П	
Customer Requirements				
On-line time (+/- 30 minutes)	П		П	The state of the s
AGC availability	r A		n	
Net dependable capacity	T		H	
Voltage control			H	
Minimum load	H		H	
Unit ramp time				
Cost			<u> </u>	
Fuel costs (coal, limestone, chemicals)	П		П	
Fuel handling costs	H-H-		- H	
Operations labor costs	 			
Maintenance labor costs	 			
Waste disposal costs (solid or		1	<u> </u>	,
hazardous)				
Inventory costs			П	
Other costs (identify in Comments)			H	
Safety	<u> </u>			
Public safety	П			
Employee Safety	<u> </u>			
Equipment Safety				
Other Performance Impacts				
Water chemistry specifications	 п			
LIST OTHER IMPACTS BELOW	<u> </u>			
)				
	 		౼旹	
	 			
			H	
	 		⊢⊢	
The state of the s				

Project Review - Performance Impact Checklist Page 2 of 2

Project Name:

Project Engineer:

Stanley M. Haber

Develop Dry Fly ash, Gypsum, and Bottom Ash Disposal Capacity

Location:

Kingston

PCN

KIF530

Date:

PERFORMANCE PARAMETERS	Improve	No Impact	Degrade	COMMENTS
Environmental				
NOTE: Initiate the project EMP and evalu	ate the follo	owing enviro	nmental impa	acts in conjunction with completing the
first column of the EMP.				
Air emissions				
SO ₂				
NO _X				
Particulate				
Hg				
Quantity of fuel burned				
Ash pond toxicity				port the state of
CEMS /COMS availability				
NPDES (Water) discharges			T I	· · · · · · · · · · · · · · · · · · ·
Shoreline/river impacts	TA		The last	
SPCC/IPP impacts (Fuel, oil, chemical				
storage)				
EMP Initiated				YES ⊠ NO □
Permitting/Notifications Identified				YES □ NO ⊠
PROCEDURE CHANGES	Revisions	No Change	i i	DENTIFY PROCEDURES
Operations				
Maintenance	X		·	the state of the s
Environmental	THE STATE OF THE S			·
Safety				
PEOPLE PARAMETERS	Needed	No Impact		COMMENTS
People				COMMENTO
Operations Training				
Maintenance Training				
Environmental Training	П			
Manpower availability		Image: square of the square of		

Project Success Index

Develop Fly Ash, Gypsum, and Bottom Ash Disposal Capacity

Project Name:

Location	on: Kingston				PC	ı k	(IF530
		CC	OST PERF	ORMANCE			
	Original Approved Project Cost (cos	t after project	developme	ent, i.e., at initial FPI	EP approval):		
	Final Approved Project Cost (cost e	stimate at the	end of pre	iminary engineering	j):		
	Actual Project Cost:				_		
Coot D	orformana Evaluation. Compare t	ha aakal aaa		a Ostataal and tha F			
Cost P	erformance Evaluation: Compare to	ne actual cos	is to both th	e Original and the F	Inal Approved Bud	gets	
	Under Original by 10% or less		5 pts	Under Final by 5	% or less		5 pts.
	Under Original between 10% and 3	0%	4 pts		ween 5% and 20%		4 pts
	Over Original by 10% or less		2 pts	Over Final by 5%	% or less		2 pts
	Over Original between 10% and 30		1 pt		een 5% and 20%		1 pt
	Over or under Original more than 30	0%	0 pts	Over or under Fi	inal more than 20%		0 pts
	Rating for Original Budget (OR) per	formance:		Rating for Final	Budget (FR) perforr	nance:	, till and till alle mill dig sider i for a lang i lang i lang ang an
Rating	for Cost Performance (average of ra	atings for Orig	inal and Fir	nal costs) CP = [(O	R + FR) / 2] =		· · · · · · · · · · · · · · · · · · ·
		ec.	IEDIII E DE	RFORMANCE			
	Original Return to Operation Date (
	Final Approved Return to Operation				iert)·		 .
	Actual Return to Operation Date:	Date (date a	t last i i Li	approvar or the proj			
Schedu	ule Performance Evaluation: Comp	are the Actua	Date to the	e Final Approved Da	ate		
	Earlier than Approved Schedule by	more than 1 v	wook		5 nto		
	Earlier than Approved Schedule by			re than 1 day	5 pts 4 pts		
	On approved Schedule (+ 24 hours		CCK DUL IIIO	c triair i day	3 pts		
	Later than Approved Schedule by le		ek but more	than 1 day	1 pt		
	Later than Approved Schedule by m			,	0 pts		
Rating	for Schedule Performance SP =						
		BE	NEFIT PER	RFORMANCE			
	Identify each of the benefits claimed identify under the "Measure" whether	for the proje	ct in the init	ial (first FPEP) appr			
				· · · · · · · · · · · · · · · · · · ·	,		
	E	Benefit Claim				Meas	sure
-							
							
-							
_							
	Exceeded all performance measure	e (hanafite)			E nto		
	Met all performance measures (ben		mos hahaa	۵	5 pts 4 pts		
	Met all performance measures (ben				3 pts		
	Met most of performance measures				2 pts		
	Met some performance measures (I				1 pt		
	Met none of the performance measing	ures (benefits)	•	0 pts		
Rating	for Benefit Performance BP =						
						_,	···
		PROJE	ECT SUCCI	ESS INDEX (PSI)			
PSI = [(C	CP + SP + BP) / 3] =	Projec	ct Engineer:	Stanle	ey M. Haber	Date	э :
		•					

Project Success Index

Develop Fly Ash, Gypsum, and Bottom Ash Disposal Capacity

Project Name:

Locati	on:	Kingston		•"		PCN	KIF530	
			COST PERF	OPMAN(?E			
	Original Appro	ved Project Cost (cost af					2756	
		d Project Cost (cost estim					2756	1. The state of th
	Actual Project	Cost:					2531	
Cost F	Performance Eva	aluation: Compare the a	ctual costs to both the	: Original :	and the Final Approve	d Budgets		
	Under Original	by 10% or less	5 pts	Under F	Final by 5% or less		5 pts	
	Under Original	between 10% and 30%	4 pts		Final between 5% and	20%	4 pts	
	Over Original b		2 pts	Over Fi	nal by 5% or less		2 pts	
		between 10% and 30%	1 pt		nal between 5% and 2		1 pt	
	Over or under	Original more than 30%	0 pts	Over or	under Final more than	ո 20%	0 pts	
	Rating for Orig	ginal Budget (OR) perform	nance: 5	Rating	for Final Budget (FR) p	oerformanc	e: <u>4</u>	
Rating	for Cost Perfor	mance (average of rating	s for Original and Fina	al costs)	CP = [(OR + FR) / 2] =	=4.	5	
	, ,	· · · · · · · · · · · · · · · · · · ·	SCHEDULE PER	REORMA	NCF			
	Original Return	n to Operation Date (date				09	0/16/05	
		d Return to Operation Da					9/16/05	
		to Operation Date:	•			- 09	9/30/05	
Sched	lule Performanc	e Evaluation: Compare	the Actual Date to the	Final App	roved Date			
	Faultur Hann Au							
		oproved Schedule by mor		a than 1 d	5 pts			
	On approved	oproved Schedule by less Schedule (<u>+</u> 24 hours)	than I week but more	e man i o	ay 4 pts 3 pts			
		proved Schedule by less t	han 1 week hut more	than 1 day				
		proved Schedule by more		andri i da	0 pts			
Rating	for Schedule P	Performance SP =	0		·			
		escape of the second	BENEFIT PER	CODMAN			<u></u>	
		of the benefits claimed for	the project in the initia	al (first FP	EP) approved package			
	identity under	the "Measure" whether th		efit "Exce	eded", "Met", or "Failed	d" to meet t	ne claimed be	enefit.
		Bene	efit Claim			V	/leasure	
_		osal capacity for flyash a				E	xceeded	
	Successful per gypsum dispos	mitting of this project has	provided KIF a back-	up site for	FGD			
-		y TVA site that has an ex	cess of 30-year life for	on-site di	snosal			
-		,	occordi de year me ioi	OH OILO GI	<u></u>	· · · · · · · · · · · · · · · · · · ·		
_								
_								
	Evended all n	performance measures (b	anofite)		5 pts			
	•	nance measures (benefits	,	1	4 pts			
		nance measures (benefits						
		erformance measures (be			2 pts			4
	Met some perf	ormance measures (bene	efits) but results unsati	isfactory	1 pt			
	Met none of th	e performance measures	(benefits)		0 pts			:
Rating	for Benefit Per	formance BP =	5					
			PROJECT SUCCE	SS INDE	((PSI)	,		
PSI = [(6	CP + SP + BP)	/3] = 3.1	Project Engineer:		Stanley M. Haber		Date: 0	1/13/06
1/			. roject Engineer.	-	Starting IVI. Habel			, 10/00

Project Success Index

Develop Fly Ash, Gypsum, and Bottom Ash Disposal Capacity

Project Name:

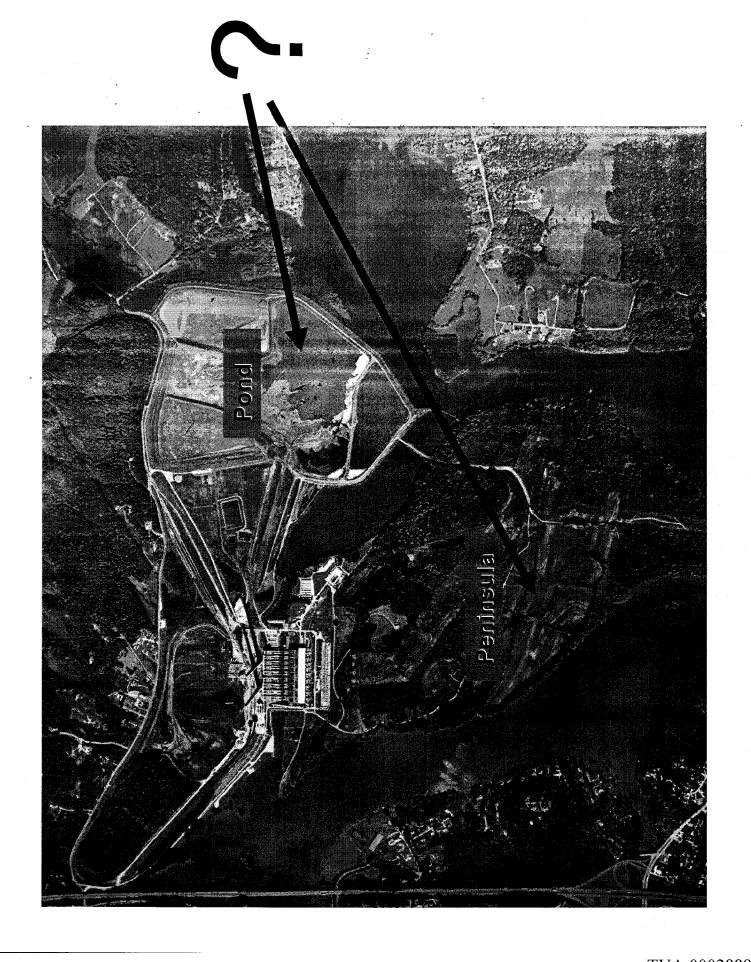
Locati	on: King	ston				* P(CN KIF5	30
		1.1						
			COST PERF	ORMANC	E			
	Original Approved Proje	ect Cost (cost after pr	oject developme	nt, i.e., at ir	nitial FPEP ap	oproval):	2756	·
	Final Approved Project	Cost (cost estimate a	at the end of prei	iminary eng	ineering):		2756	
	Actual Project Cost:						2531	_
Cost P	erformance Evaluation:	Compare the actual	costs to both the	e Original a	nd the Final A	Approved Bi	udgets	
	Under Original by 10%	or less	5 pts	Under F	inal by 5% or	less	ï	5 pts
	Under Original between		4 pts		inal between			1 pts
	Over Original by 10% or		2 pts		al by 5% or l			2 pts
	Over Original between 1		1 pt		al between 5			pt
	Over or under Original r		0 pts	Over or	under Final m	nore than 20) pts
	Rating for Original Budg	get (OR) performance	e: <u>5</u>	Rating fo	or Final Budg	et (FR) perfe	ormance: _	5
Rating	for Cost Performance (a	average of ratings for	Original and Fin	al costs) (CP = [(OR + }	FR) / 2] =	5	
н, ч.				· · · · · · · · · · · · · · · · · · ·			*	
			SCHEDULE PE	RFORMAN	CE			
	Original Return to Opera	ation Date (date iden	tified at initial FP	PEP approva	al):		09/16/05	
	Final Approved Return t		ate at last FPEP	approval of	the project):		09/16/05	
	Actual Return to Operat	tion Date:					09/30/05	<u> </u>
Sched	ule Performance Evaluat	tion: Compare the A	Actual Date to the	Final Appr	oved Date			
	F	Nata and the feet and are all the			_			
	Earlier than Approved S					pts		
	Earlier than Approved S		1 1 week but mor	e than 1 da	-	pts		
	On approved Schedule		4	45		pts		
	Later than Approved So Later than Approved So			than Toay		pt		
	Later than Approved Sc	nedule by more triair	I WEEK		U	pts		
Rating	for Schedule Performan	nce SP = 0						
								and the second second
			BENEFIT PER	FORMANO	Έ			
	Identify each of the ben-	efits claimed for the				package. F	or each of thos	e claimed.
	identify under the "Meas	sure" whether the act	tual achieved ber	nefit "Excee	ded", "Met", o	or "Failed" to	meet the claim	ed benefit.
	•	Benefit Cl			, , ,			
		Delleilt Ci	aiiii				Measure	
_	Permitted disposal capa	acity for flyash and bo	ottom ash by FY0	07			Exceeded	
								
•••	um municipal de la companya de la co		17-112-11	<u> </u>				
								· · · · · · · · · · · · · · · · · · ·
-								
-			······································					
	Exceeded all performan	ice measures (benefi	its)			5 pts		
	Met all performance me	•	•	е		4 pts		
	Met all performance me	, ,			t	3 pts		
	Met most of performance	e measures (benefits	s) and results sat	tisfactory		2 pts		
	Met some performance	measures (benefits)	but results unsat	tisfactory		1 pt		
	Met none of the perform	nance measures (ber	nefits)			0 pts		
Rating	for Benefit Performance	BP = 5						
		Pf	ROJECT SUCCE	SS INDEX	(PSI)		· · · · · · · · · · · · · · · · · · ·	
DO:					• ,		_	
PSI = [(C	CP + SP + BP) / 3] =	3.3 P	Project Engineer:		Stanley M.	Haber	Date:	01/13/06

1 KIF530: Develop Fly Ash, Gypsum, and B	Sottom Ash Storage	age						
2 Phase/Activity	FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
E	000000000000000000000000000000000000000			- 20				
98					Page 1	Marine Marine		
5 Phase 1							•1	
6 Engineering	200	50				250		
7 PE/PC/PS		20				20		
8 Plant Support		5				5		
9 PSS - Inspection						0		
10							•	
11 Total Phase 1	200	75	0	0	0	275		
12					The second secon			
13 Phase 2								-
14								
15 Engineering	0	0	70	300	0	370		
16								
17 PE/PC/PS	0	0	25	30	0	55		•
18								
19 GUBMK (estimate)	0	0		35	0	35	-	
20 Plant Support	0	0	5	20	0	25		
21								
22 Long Lead Material (LLM)								
23 Turbine Materials and PSS Rehab	ehab 0	0			0	0		
24	blank 0	0		4000	4000	8000		
25 total	CDM = 0	0	0	4000	4000	8000	•	
26								
27 Total Phase 2	0	0	100	4385	4000	8485		

1 KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage	um, and Bottom	Ash Storag	- 1						
2 Phase/Activity		FY04	FY05	FY06	FY07	FY08	Totals	Prv Yrs	
29 Phase 3									
30									
31 Engineering		0	0	0	200	200	400		
2									
33 PE/PC/PS		0	0	0	15	35	20		
4									
35 Plant Support		0	0	0	20	20	40		
36									
37 Installation (x)									
38	GUBMK	0	0	0	20	20	40		
39	blank	0	0	0	0	0	0		
40	Total GUBMK	0	0	0	20	20	40		
41					The state of the s				
42 Turnk	Turnkey Installation	0	0	0	3360	0	3360		
43	blank	0	0	0	0	. 0	0		
44	Total	0	0	0	3360	3725	7085		
45									
46 Asbestos abatement (GUB	tent (GUBMK)	0	0	0	0	0	0		
	Total Installation	0	0	0	3380	3745	7125	,	
49									
Total Phase 3		0	0	0	3615	4000	7615		
51									
52 Total: All Phases		200	75	100	8000	8000	16375		
Assumptions:									
1. Design and installation of system will be	m will be by turn	by turnkey contractor; scope	or; scope sir	similar to CUF	dry fly ash	system.			
2. Design of BOP interfaces will be by FE&TS	e by FE&TS								
3. FE&TS Lead will be Civil Department	artment								
							,		
						:			

03/12/2009 10:47 AM Page 1 apgfs3\fpg common\Don Cahill Information (sorted 2009 03 12)\KIF530 (Increase Pond Capacity)\KIF DCA TAO-0201 75% Review

Name	Modified	Size	Ratio	Packed	Path
10W425-84.pdf	05/13/2005 10:43 AM	353,500	0%	352,877	
10W425-85.pdf	05/13/2005 10:43 AM	327,904	0%	327,295	•
10W425-86.pdf	05/13/2005 10:44 AM	287,291	0%	286,668	
10W425-87.pdf	05/13/2005 10:44 AM	201,799	0%	201,115	
10W425-88.pdf	05/13/2005 10:44 AM	200,765	2%	197,392	•
10W425-89.pdf	05/13/2005 10:45 AM	131,974	1%	130,253	
10W425-90.pdf	05/13/2005 10:45 AM	210,701	1%	208,239	
10W425-91.pdf	05/13/2005 10:46 AM	389,533	0%~	388,664	
10W425-92.pdf	05/13/2005 10:46 AM	38,768	2%	38,094	
10W425-93.pdf	05/13/2005 10:47 AM	711,896	0%	711,074	
10W425-94.pdf	05/13/2005 10:47 AM	306,955	8%	281,597	
10W425-81.pdf	05/13/2005 10:41 AM	1,059,955	0%	1,056,730	
10W425-82.pdf	05/13/2005 11:01 AM	237,554	0%	236,925	
10W425-83.pdf	05/13/2005 10:42 AM	362,150	0%	361,417	
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Kingston Fossil Plant Decision Matrix

Pond or Peninsula?

January 27th, 2005
Plant Managers Conference
Room
10 AM – 11:30 AM

Presentation of Decision Matrix Agenda

➤ How We Got Here & Where We Are

▶ Basis for Matrix

➤ Presentation of Options

➤ Presentation of Option Costs

➤ Summary of Present Worth by Option

➤ Engineering Recommendation

▶ Path Forward

How We Got Here & Where We Are

Initial Look at Peninsula for Gypsum Only

Plant Manager's Concerns for this Area

and Request to Revisit a Pond Only Option (JPT)

Blowout – November 2003

Interim Cell Decision

Permit Package Required by DSWM

permitting required for a Lateral Expansion utilizing the remaining capacity in the pond complex. This TVA took this opportunity to do the engineering and expansion included all wastes in all forms.

Part II Permit Package Submitted in June 2004

How We Got Here & Where We Are

Peer Review

Questions Raised by Yard Regarding Complexity of Operation

Results of Peer review

Continue Permit Application As Is

Gypsum & Ash Separately in Pond Option Even More Flexibility Added to Maintain

Strengthened our Argument for Not Having a

Liner

Where We Are

IT'S DECISION TIME

Decision Needed for Gypsum Disposa

✓ Gypsum Production Begins in 2009

✓ Permit Process for Peninsula Option must begin now to have a facility in-place when Gypsum is produced

This is the "Given and Assumed" Portion of the Problem

Ash Production Per Year (2003 numbers):

398,000 CY Fly Ash

77,600 CY Bottom Ash

Provided by Missy Hedgecoth:

Gypsum Production Per Year:

327,360 CY

Provided by FGD Team – Based on Calculation using a 2.8# Coal (Average) Burn – Assumes No Marketing Success

Gypsum Production Begins in 2009

Twenty-Five Year Window – 2005 Present Worth Value (PWV)

Closure Cost are NOT included for any option since all options provide in excess of 25 years capacity Dry Fly Ash Conversion Cost – Includes a \$2,000,00 deduction that assumes the electrical power cost would be absorbed by the scrubber project.

contingencies has been added to the peninsula option to "level the playing field" between the pond and peninsula options. Since the in pond option is at the 50% design stage and the peninsula option is at the Phase 1 stage, a 5% delta in

Operations Assumptions:

Gypsum Delivery Costs are assumed as equal between the Pond Option and the Peninsula Option – Evidenced by the similar distance and height pumped. O&M cost for Gypsum in Pond Options are higher to account for more complex operation Greater effort in maintaining rim ditches, additional engineering support and surveying costs, etc.

O&M Costs have been reviewed and confirmed by HED (Larry **Radford)**

Peninsula Options Include:

Assumed cost of \$ 500,000 (2005 dollars) for Karst Mitigation Must be an Assumption – Exact Cost will not be known until construction is completed

Based on 1300 linear feet of impact and a "in lieu of" fee of \$200/ft Assumed cost of \$250,000 (2005 dollars) for Stream Mitigation of impact per TDEC guidance

Presentation of Options

- of options the cost for a liner in the pond (if be required for the lateral expansion of the control. Gypsum disposal on the peninsula this Matrix. For the purpose of comparison required by TDEC) is omitted since it may There are Four Major Options included in dredge cell even if no gypsum is placed there. This decision is outside TVA's assumes a clay liner.
- excess of the required 25 years capacity. As stated earlier, all options provide in

- Wet Ash in Pond - Gypsum on Peninsula
- Includes Fix for Swan Pond Road
- Dredge Cells are Operational for the Next 25 Years
- Dry Fly Ash
 Conversion is Not
 Required During the
 25 year Evaluation
 Period (Beyond
 2029)

Dry Ash in Pond - Gypsum on Peninsula

For Study Purposes

- No Fix for Dredge Cells on Swan Pond Required
- Gypsum Rim Ditching on Peninsula
- Dry Fly Ash Conversion Assumed to Occur in 2005

- Wet Ash in Pond
 Gypsum in
 Pond
- Includes Fix for Swan Pond Road
- Assumes Combined
 Dredge Cell/Gypsum
 Rim Ditch Operation
 in Pond
- Dry Fly Ash
 Conversion is
 Required in 2016

Dry Ash in Pond - Gypsum in Pond

For Study Purposes

- No Fix for Dredge Cells on Swan Pond Required Dry Fly Ash Conversion
 - Assumed to occur in 2005

Presentation of Option 1 Costs

Wet Ash in Pond	- Gypsum on	Peninsula

al \$ 13,121,862 (PWV)	Cost \$ 10,629,977	\$ 23,751,838 nt
Capital Costs (PWV)	O&M Cost (PWV)	Total Present Worth

Presentation of Option 2 Costs

Sost	Capital Costs (Pwv)	\$ 38,447,448
ent	O&M Cost (PWV)	\$ 17,512,694
	Total Present Worth	\$ 55,960,142

Presentation of Option 3 Costs

Capital Costs (PWV)	\$ 16,896,059
O&M Cost (PWV)	\$ 13,270,679
Total Present Worth	\$ 30,166,737

Details are in the

Appendixes

Presentation of Option 4 Costs

Pond	m in	
Ash in	Gypsur	pu
) Z	ı	Po

Capital Costs (PWV)	\$ 33,952,770
O&M Cost (PWV)	\$ 19,096,939
Total Present Worth	\$ 53,049,709

Summary of Present Worth by Option

Present Worth \$53,049,709	Present Worth \$30,166,737	Present Worth \$55,960,142	Present Worth \$23,751,838
Gypsum in Pond	Gypsum in Pond	Gypsum on	Gypsum on
Pond –	in Pond –	in Pond –	in Pond –
Dry Ash in	Wet Ash	Dry Ash	Wet Ash
Option 4	Option 3	Option 2	Option 1

Summary of Non-Economic Factors by Option

Option 1 Wet Ash in Pond – Gypsum on Peninsula Straight forward design and operation

 Potential opposition of neighbors across the lake

Involves ARAP & 404 Permitting

Takes a State Wildlife
 Management Area

Involves karst mitigation

Adds a New NPDES Outfall

Option 3 Wet Ash in Pond – Gypsum in Pond

Permit is already in process

Less potential for public opposition

 Does not involve any greenfield impacts More operationally complex

 Utilizes potential ash disposal capacity for gypsum





Operational complexity of in-pond option Proximity of neighbors across the lake

Engineering Recommendation

Recommended Option Wet Ash in Pond – Gypsum on Peninsula (Option 1)

PERMITTING FOR OPTION 3 CONTINUE TO HOWEVER, WE ALSO RECOMMEND THAT BE PURSUED.

Already in Permit Process

No Additional Expense

Lateral Expansion Permit Required for Ash

Regardless of Gypsum Decision

 This Option Can Be a Fall Back Position If Public **Opposition Delays Permitting Peninsula**

Path Forward

Begin Development of Permit Package for Peninsula Collection of groundwater information has been ongoing

ARAP & 404 permits will be required

Milestone Dates are included in Appendix A

NPDES Outfall permitting will be pursued

Appendix A – Permitting Milestones

Appendix B – Cost Spreadsheets

Appendix C – Detailed Cost Sheets

Kingston Fossil Plant Develop Fly Ash, Gypsum & Bottom Ash Disposal Capacity <u>Development of a waste stack for fly ash, bottom ash</u>

Estimate Number:	04513	Option: 0	PCN Number:	KIF530
Plant:	KIF	Revision: 0	Estimate Type:	Conceptual '
Cost Engineer:	Sys. Eng.	Unit #:	Estimate Accuracy:	+/- 30%
Requesting Engr:	S. M. Haber	Phase: 1	Estimate Issue Date:	08/16/2004

Phase I	Hours	Dollars
Engineering		\$270,000
Partner (Non-Manual)		* ****,****
Other / Other Organizations		\$5,000
Total Phase I	1	\$275,000
Phase II	*	A
Engineering		\$425,000
Long Lead Procurement		\$8,000,000
Partner (Non-Manual)		\$35,000
Other / Other Organizations		\$25,000
Total Phase II	7	\$8,485,000
Phase III	•	<u> </u>
Construction (Partner)		
Permanent Material		\$0
Labor (T&L)		\$40,000
Labor (Non-Manual)		Ψ.0,000
Equipment		\$0
Subcontracts		\$7,085,000
Partner Fee		\$0
Partner Insurance		\$0
Escalation		\$0
Construction Risk Dollars		\$0
Other		\$0
Total Construction Cost		\$7,125,000
Total College de la College de		Ψ7,123,000
Engineering		\$450,000
Direct plant support + TVA Other Costs		\$40,000
Project Risk Dollars		\$0
Other / Other Organizations		\$0
Total Phase III	7	\$7,615,000
All Phases		<u>Ψ7,013,000</u>
Construction Partner		\$7,160,000
Long Lead Procurement		\$8,000,000
Engineering		\$1,145,000
Other / Other Organizations		\$70,000
Total Risk Dollars		\$0
Total Project Costs		\$16,375,000
For Information only Total Environmental		\$0 \$0
For Information only Total Demolition Costs		φυ

Page 1 of 1

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- > Introductions
- > Review the project basis
 - o Systems Background
 - o CPJ
 - Problem Description
 - Project Scope
 - Performance Measurement
 - Other Options/Alternatives
- > Review of notes from 12/10/04 meeting
 - o Darlene Keller email
 - o Project Impact Checklist
 - o EMP
- > Project Scope and Schedule
 - o Scope definition
 - o Implementation schedule
- > Action Items
- > Next Meeting