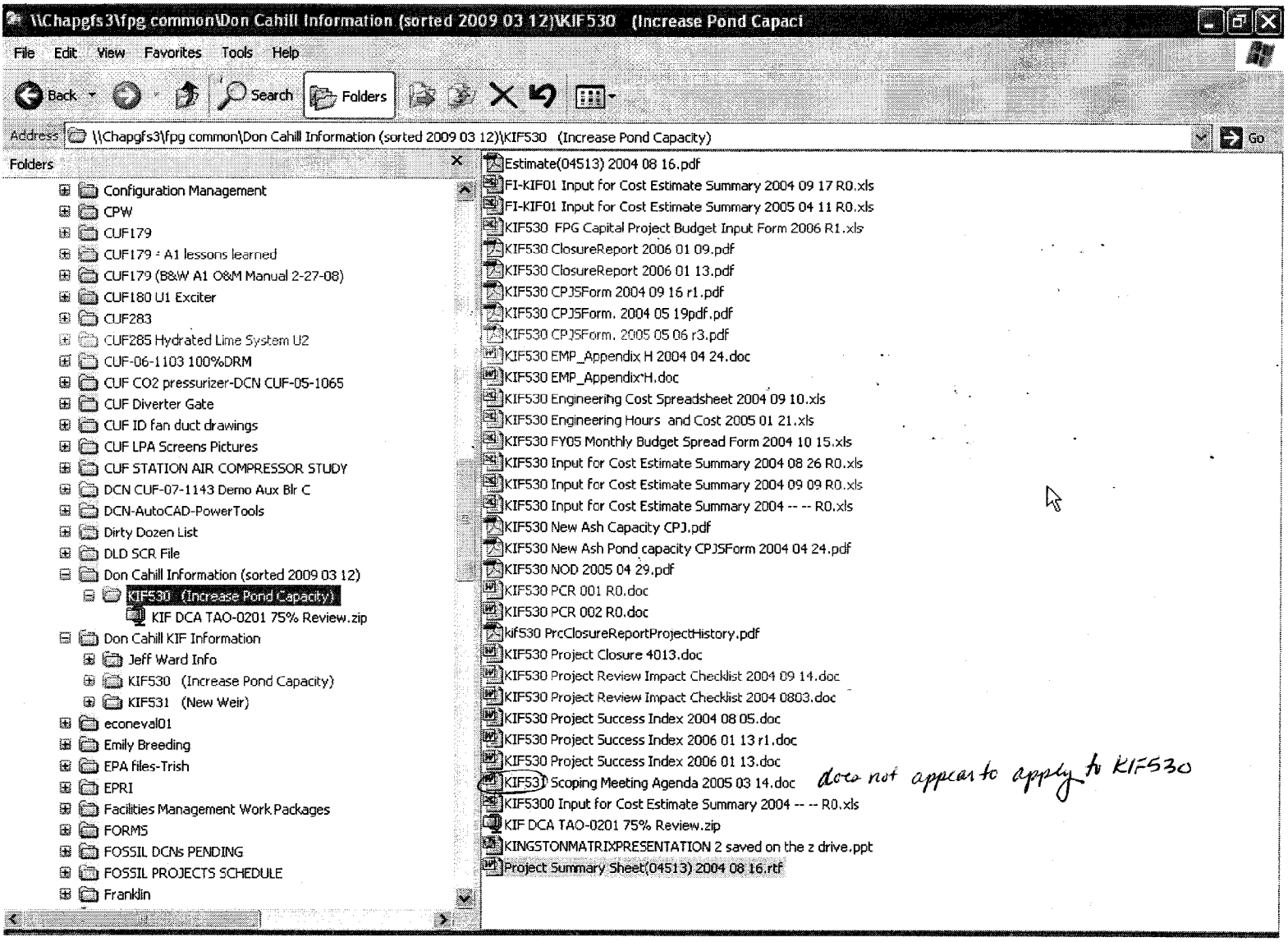


does not appear to apply to KIF530

Kingston Fossil Plant
Develop Fly Ash, Gypsum & Bottom Ash Disposal Capacity
Development of a waste stack for flyash, bottom ash & gypsum.

Project name	Ash Disposal
Estimator	Sys. Eng.
Plant	KIF
Estimate #	04513
PCN #	KIF530
Requesting Engr	S. M. Haber
Option	0
Revision	0
Phase	1
Estimate Type	Conceptual
Estimate Accuracy	+/- 30%
Est. Issue Date	08/16/2004
Funding Type	Capital
Report format	Sorted by 'Location/Activity' 'Detail' summary

Location	Activity	Description	Takeoff Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount
KIF									
	Ash System								
		Material (Blank)	1.00 ls		8,000,000	-	-	-	8,000,000
		Craft Labor (GUMBK)	1.00 ls	40,000		-	-	-	40,000
		GUMBK (Ph II)	1.00 ls			-	-	35,000	35,000
		Plant Support (Ph III)	1.00 ls			-	-	40,000	40,000
		Turnkey Installation	1.00 ls			7,085,000	-	-	7,085,000

Estimate Totals

Labor	40,000		1,086.366	hrs		
Material	8,000,000					
Subcontract	7,085,000					
Other	75,000					
	15,200,000	15,200,000				
Engineered Materials - Ph 2	8,000,000		100.000 %		C	
Adjustment - Engr Materials	(8,000,000)		(100.000) %		C	
		15,200,000				
Environmental Costs			100.000 %		C	
Adjustment Environmental			(100.000) %		C	
		15,200,000				
Demolition Costs			100.000 %		C	
Adjustment Demolition			(100.000) %		C	
		15,200,000				
FPG Engineering - Phase 1	250,000		547.917 % @	42.00	A	5,952
FPG Proj Engr - Phase 1	17,312		37.942 % @	42.00	A	412
FPG Estimating - Phase 1	1,008		2.209 % @	42.00	A	24
FPG Proj Contrl - Phase 1	1,680		3.682 % @	42.00	A	40
Plant Support - Phase 1	5,000				L	
	275,000	15,475,000				
FPG Engineering - Phase 2	370,000		810.917 % @	42.00	A	8,810
FPG Proj Engr - Phase 2	49,960		109.496 % @	42.00	A	1,190
FPG Estimating Phase 2	1,008		2.209 % @	42.00	A	24
FPG Proj Contrl - Phase 2	3,360		7.364 % @	42.00	A	80
FPG Records - Phase 2	672		1.473 % @	42.00	A	16
Plant Support - Phase 2	25,000				L	
	450,000	15,925,000				
FPG Engineering - Phase 3	400,000		876.667 % @	42.00	A	9,524
FPG Proj Engr - Phase 3	47,312		103.692 % @	42.00	A	1,126
FPG Proj Contrl - Phase 3	1,680		3.682 % @	42.00	A	40
FPG Records - Phase 3	1,008		2.209 % @	42.00	A	24
	450,000	16,375,000				
	Total	***16,375,000***				

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**								
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				5		
9	PSS - Inspection						0		
10									
11	**Total Phase 1**	**200**	**212**	**0**	**0**	**0**	**412**		
12									
13	**Phase 2**								
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	6900		
26									
27	**Total Phase 2**	**0**	**268**	**295**	**2830**	**4000**	**7393**		
28									

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**									
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)									
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		
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										
50	**Total Phase 3**	**0**	**1145**	**1210**	**2215**	**4000**		**8570**		
51										
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; 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 tie-ins									
	5. Ph 1 eng includes Peer review ($50k), study of deep french drains ($70k), answering permit questions ($75k)									

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**									
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					5		
9	PSS - Inspection							0		
10										
11	**Total Phase 1**	**200**	**212**	**0**	**0**	**0**		**412**		
12										
13	**Phase 2**									
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		6900		
26										
27	**Total Phase 2**	**0**	**268**	**295**	**2830**	**4000**		**7393**		
28										

1	KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage									
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)									
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		
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										
50	**Total Phase 3**	**0**	**1145**	**1210**	**2215**	**4000**		**8570**		
51										
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; 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 tie-ins									
	5. Ph 1 eng includes Peer review ($50k), study of deep french drains ($70k), answering permit questions ($75k)									

FOSSIL POWER GROUP

FPG CAPITAL PROJECT ACCOUNT / BUDGET INPUT FORM

(Dollars in Thousands)

Fiscal Year	2006
PCN	KIF530
Responsible Unit	18953
Location/Unit	450Y
Functional Account	EC0681

Project Description DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

		Monthly Budget Spread												
Phase - Work Package Number - Description	**Short Code**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**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 LL Procurement														
Labor		0	0	0	0	0	0	0	0	0	0	0	0	0
Long Lead Procurement		0	0	0	0	0	0	0	0	0	0	0	0	0
Phase B Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0
Phase C - Implementation														
Labor	001DQYW	10	22	18	2									52
Implementation		80	15	5										100
Phase C Subtotal		90	37	23	2	0	0	0	0	0	0	0	0	152
Project Total		**90**	**37**	**23**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**152**

Project Closure Report

Project Name | **Project ID** | **Rev#**

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY | KIF530 | 4

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

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

Project

Type: Capital
Cat: REGULATORY
Prgm: FPG - Ash Handling

	Estimated	Actual
Start Date:	07/30/2003	
In-Srvc Date:	09/16/2005	09/30/2005
Outage Date:		

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 Estimate	Preliminary Estimate	Definitive Estimate	Actual Cost	Original Variance ($)	Original Variance (%)	Preliminary Variance ($)	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-Service	Preliminary In-Service	Definitive In-Service	Actual In-Service	Original Variance	Preliminary Variance (Days)	Definitive 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.

Project Closure Report

Project Name
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Project ID KIF530 **Rev#** 4

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

ARO Review (Status) N/A

ARO Asset Description / Future Retirement Action / Regulation
No information available

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

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

Actual Performance Measurement
Permitted disposal capacity for fly ash and bottom ash by FY 2006.

Actual O&M Savings	$0	Actual Increased Revenue	$0	PM Indicator	5	

Lessons Learned

Project Closure Report

Project Name
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Project ID KIF530 **Rev#** 4

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

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

Project
Type: Capital
Cat: REGULATORY
Prgm: FPG - Ash Handling

	Estimated	Actual
Start Date:	07/30/2003	
In-Srvc Date:	09/16/2005	09/30/2005
Outage Date:		

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 Estimate	Preliminary Estimate	Definitive Estimate	Actual Cost	Original Variance ($)	Original Variance (%)	Preliminary Variance ($)	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-Service	Preliminary In-Service	Definitive In-Service	Actual In-Service	Original Variance	Preliminary Variance (Days)	Definitive 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

Project Closure Report

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY	KIF530	4

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

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.

ARO Review (Status) N/A

ARO Asset Description / Future Retirement Action / Regulation

No information available

Original Performance Measurement

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

Definitive Performance Measurement

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

Actual Performance Measurement

Permitted disposal capacity for fly ash and bottom ash by FY 2006. Benefit measurement for this project should have been changed to be complete by FY2006 in R4 of the project approval.

Project restored capability to use the original dredge cells with a margin (free-water-volume in the ash pond) instead of providing dredge capacity just-in-time. Permenant dredge capacity was available prior to the need date of 12/2005. Remaining capacity is still available in the temporary dredge cell.

Successful permitting of this project has provided KIF a back-up site for FGD gypsum disposal. This is the only TVA site that has an excess of 30-year life for on-site disposal.

Actual O&M Savings	$0	Actual Increased Revenue	$0	PM Indicator	5	

Lessons Learned

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	1

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

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

Project

Type: Capital
Cat: ASSET PRESERVATION
Prgm: No Program

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

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. 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.

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	1

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

News Release

N/A

Capital Project Justification Form

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

Project ID
KIF530

Rev#
1

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

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
TOTAL COST:	$15,942	**SIMPLE PAYBACK:**	6
ESTIMATE TYPE:	Conceptual	**BASE YEAR:**	2004

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	0	0	0	0
2023	0	0	0	0	0

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 1

II. Project Economic Evaluation

	Cost Assumptions	Risks
1.	$7,805K engineering and procurement cost.	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. Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000	Based on historical data (ash) and similar projects (gypsum).
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	Risks
1.	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.	Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Capital Project Justification Form

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

Project ID
KIF530

Rev#
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 Reduction (HRS)	Project Cost ($000's)
2004	0	0	0	0	0	0	0	0	0	200
2005	0	0	0	0	0	0	0	0	0	2,058
2006	0	0	0	0	0	0	0	0	0	1,505
2007	0	0	0	0	0	0	0	5,000	0	5,045
2008	0	0	0	0	0	0	0	5,000	0	7,567
2009	0	0	0	0	0	0	0	5,000	0	0
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	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0

Capital Project Justification Form

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

Project ID
KIF530

Rev#
1

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:** 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	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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

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

Project
Type: Capital
Cat: ASSET PRESERVATION
Prgm: No Program

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

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. 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.

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

News Release

N/A

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 0

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

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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

II. Project Economic Evaluation

	Cost Assumptions	Risks
1.	Engineering = $200k in FY 04; $100k in FY 06.	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. Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000	Based on historical data (ash) and similar projects (gypsum).
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	Risks
1.	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.	Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY	KIF530	3

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

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

Project

Type: Capital
Cat: ASSET PRESERVATION
Prgm: Ash Handling (FPG)

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

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.

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

N/A

Capital Project Justification Form

Project Name
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Project ID
KIF530

Rev#
3

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

II. Project Economic Evaluation

COST

SUNK CAPITAL: $200
SUNK O&M: $0
REMAINING COST: $1,650
TOTAL COST: $1,850
ESTIMATE TYPE: Conceptual

ECONOMIC INDICATORS

NPV: $20,190.0
PI: 13.383
IRR: 135.0
SIMPLE PAYBACK: 2
BASE YEAR: 2005

Year	Capital Cost	O&M Cost	Total Benefit	O&M Base Increase	Environmental 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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY	KIF530	3

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

II. Project Economic Evaluation

	Cost Assumptions	Risks
1.	Costs: Engineering = $150k Construction = $1,500k	Based on conceptual estimate.
2.	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.
3.	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	Risks
1.	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.	Assumes a disposal site can be found within 30 miles of the plant which could handle 500,000 tons per year.

Capital Project Justification Form

Project Name | **Project ID** | **Rev#**

KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY | KIF530 | 3

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 Reduction (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	0
2008	0	0	0	0	0	0	0	5,000	0	0
2009	0	0	0	0	0	0	0	5,000	0	0
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	0	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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY	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

Appendix A

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.)

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
2. Potential environmental issues				
A.	**Air**			
1.	Fugitive Emissions:	☒	☐	control of dusting
2.	Open Burning:	☐	☒	_____
3.	New Source Review:	☐	☒	_____
4.	Other: _____	☐	☒	_____
B.	**Water**			
1.	Site / Erosion Control:	☒	☐	for waste stacks and dike slopes
2.	Sewage:	☐	☒	_____
3.	Contaminated Runoff:	☐	☒	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:	☐	☒	_____

Project Environmental Management Plan Outline

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

Project Environmental Management Plan Outline

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
2.	Roofing Waste:	☐	☒	_____
3.	Floor Tile Waste:	☐	☒	_____
4.	Other: _____	☐	☒	_____
F.	**PCB**			
1.	Handling & Storage:	☐	☒	_____
2.	Liquid Waste Disposal:	☐	☒	_____
3.	Equipment Disposal:	☐	☒	_____
4.	Contaminated Debris Disposal:	☐	☒	_____
5.	Other (capacitors, transformers, etc.): _____	☐	☒	_____
G.	**SPCC/BMP**			
1.	Fuel/Lube/Insulating oil Storage:	☐	☒	_____
2.	Oil Transfer (Procedure):	☐	☒	_____
3.	Other: _____	☐	☒	_____
H.	**Underground Storage Tanks (UST's)**			
1.	Contaminated Soil:	☐	☒	_____
2.	Tank Disposal:	☐	☒	_____
3.	Other: _____	☐	☒	_____
I.	**Above-ground Storage Tanks (AST's)**			
1.	Contaminated Soil:	☐	☒	_____
2.	Tank Disposal:	☐	☒	_____
3.	Other: _____	☐	☒	_____
J.	**Plant or Animal**			
1.	Potentially affect:			

Project Environmental Management Plan Outline

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
	Endangered, threatened ,or Special Status Species:	☐	☒	_____
	Migratory bird populations:	☐	☒	_____
	Unique or important terrestrial habitat:	☐	☒	_____
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:	☐		_____

Project Environmental Management Plan Outline

3.		Environmental Permits/Notifications	Permit Received? Y	Permit Received? N	Type	Date of Notification
	A.	Air:	☐	☒	____	____
	B.	Water:	☒	☐	NPDES	Verify no impact to discharge permits
	C.	Hazardous Waste:	☐	☒	____	____
	D.	Asbestos:	☐	☒	____	____
	E.	PCB:	☐	☒	____	____
	F.	UST's / AST's:	☐	☒	____	____
	G.	Solid Waste:	☒	☐	____	Going from wet pond to dry stack
	H.	Other (i.e., Spill Notification): ____	☐	☒	____	____

4.		Employee Training	Required? Y	Required? N	Provided / Verified
	A.	Hazardous Waste	☐	☒	____
	B.	Asbestos Competent Person	☐	☒	____
	C.	Emergency Spill/ Prevention	☐	☒	____
	D.	OSHA 1910.120	☐	☒	____
	E.	Other (e.g., Ammonia Awareness): ____	☐	☒	____

5. Emergency Response

Is the Site Emergency Response Plan adequate for this project? If not, a copy of any required additions must be attached to this plan.	Yes ☒	No ☐
Are all environmental concerns addressed in a generic CEC (see Appendix E)? If not, prepare a project-specific CEC.	Yes ☐	No ☒
Do project activities result in environmental concerns?	Yes ☒	No ☐
Are all Appendix E?	Yes ☐	No ☒

Project Environmental Management Plan Outline

If not, prepare a project-specific CEC.

Is a CEC required for this project? Yes ☒ No ☐

	Signatures	**Date**
Project Initiator/Manager:	_____	_____
Site PA(E):	_____	_____
Other Signatures: (as appropriate)	_____	_____
Filed in EDMS	_____	_____

Appendix A

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 develpment 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.)

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
2. Potential environmental issues				
A.	**Air**			
1.	Fugitive Emissions:	☒	☐	control of dusting
2.	Open Burning:	☐	☒	_____
3.	New Source Review:	☐	☒	_____
4.	Other: _____	☐	☒	_____
B.	**Water**			
1.	Site / Erosion Control:	☒	☐	for waste stacks and dike slopes
2.	Sewage:	☐	☒	_____
3.	Contaminated Runoff:	☐	☒	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:	☐	☒	_____
5d.	Wild or Scenic Rivers or Their Tributaries:	☐	☒	_____

Project Environmental Management Plan Outline

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

Project Environmental Management Plan Outline

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
4.	Other: _____	☐	☒	_____
F.	**PCB**			
1.	Handling & Storage:	☐	☒	_____
2.	Liquid Waste Disposal:	☐	☒	_____
3.	Equipment Disposal:	☐	☒	_____
4.	Contaminated Debris Disposal:	☐	☒	_____
5.	Other (capacitors, transformers, etc.): _____	☐	☒	_____
G.	**SPCC/BMP**			
1.	Fuel/Lube/Insulating oil Storage:	☐	☒	_____
2.	Oil Transfer (Procedure):	☐	☒	_____
3.	Other: _____	☐	☒	_____
H.	**Underground Storage Tanks (UST's)**			
1.	Contaminated Soil:	☐	☒	_____
2.	Tank Disposal:	☐	☒	_____
3.	Other: _____	☐	☒	_____
I.	**Above-ground Storage Tanks (AST's)**			
1.	Contaminated Soil:	☐	☒	_____
2.	Tank Disposal:	☐	☒	_____
3.	Other: _____	☐	☒	_____
J.	**Plant or Animal**			
1.	Potentially affect:			
	Endangered, threatened ,or Special Status Species:	☐	☒	_____
	Migratory bird populations:	☐	☒	_____

Project Environmental Management Plan Outline

		Environmental Concern? YES	Environmental Concern? NO	Control Measures to be used
	Unique or important terrestrial habitat:	☐	☒	_____
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:	☐		_____

Project Environmental Management Plan Outline

3.		Environmental Permits/Notifications	Permit Received? Y	Permit Received? N	Type	Date of Notification
	A.	Air:	☐	☒	_____	_____
	B.	Water:	☒	☐	NPDES	Verify no impact to discharge permits
	C.	Hazardous Waste:	☐	☒	_____	_____
	D.	Asbestos:	☐	☒	_____	_____
	E.	PCB:	☐	☒	_____	_____
	F.	UST's / AST's:	☐	☒	_____	_____
	G.	Solid Waste:	☒	☐	_____	Going from wet pond to dry stack
	H.	Other (i.e., Spill Notification): _____	☐	☒	_____	_____

4.		Employee Training	Required? Y	Required? N	Provided / Verified
	A.	Hazardous Waste	☐	☒	_____
	B.	Asbestos Competent Person	☐	☒	_____
	C.	Emergency Spill/ Prevention	☐	☒	_____
	D.	OSHA 1910.120	☐	☒	_____
	E.	Other (e.g., Ammonia Awareness): _____	☐	☒	_____

5. Emergency Response

Is the Site Emergency Response Plan adequate for this project? If not, a copy of any required additions must be attached to this plan.	Yes ☒	No ☐
Are all environmental concerns addressed in a generic CEC (see Appendix E)? If not, prepare a project-specific CEC.	Yes ☐	No ☒
Do project activities result in environmental concerns?	Yes ☒	No ☐
Are all Appendix E?	Yes ☐	No ☒

Project Environmental Management Plan Outline

If not, prepare a project-specific CEC.

Is a CEC required for this project? Yes ☒ No ☐

	Signatures	**Date**
Project Initiator/Manager:	_____	_____
Site PA(E):	_____	_____
Other Signatures: (as appropriate)	_____	_____
Filed in EDMS	_____	_____

Project Title: Develop Ash Storage
PCN Number: KIF530

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

Avg. TVA Engr Hourly Rate	$42
Avg. Non TVA Engr Hourly Rate	$72

Engineering Estimate Worksheet

Project Title: Develop Dry Fly Ash, Gypsum, and Bottom Ash Disposal
PCN Number: KIF531
Current Phase: 0
Phase Request: 2

		Hours	Dollars
Phase I			
	Prin Engr		
Project Engr		150	$6,300
Mech Engr		0	$0
Elec Engr I		0	$0
Elec Engr II		0	$0
Civil Engr		975	$40,950
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		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		7928	$ 497,556
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
Cost Estimating		0	$0
Engr Records		0	$0
Sub Total		0	$ -
Phase III			
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
Engr Records		0	$0
CAD Dwg Support		0	$ -
Sub Total		0	$ -
Total Project		7,928	$ 497,556

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

	Cost/Hr
Avg. TVA Engr Hourly Rate	$42
Avg. Non TVA Engr Hourly Rate	$72
CAD Dwg Support $/Dwg	$150

Management Concurrence	
Eng Spt	Peterson (Garrett)
Mech	NA
Elec 1	NA
Elec 2	NA
Civil	Purkey (Petty)
Systems	NA
Other	Waldrep (Haber/Harless)

Avg. No. Dwgs
0

<==CAD support - input the number of dwgs for DCA conversion. This number can be negotiated with support.

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

PCN - Project Name KIF530-KIF Develop Fly Ash, Gypsum & Bottom Ash Disposal

Functional Account

Responsible Unit 18758

Location/Unit 45/5

Work Package / Descrip	Short Code	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
KIF530A-01 FE & Project Control	001D9VR	1	98	108										207
Plant Support Ph1			2	3										5
Engineering Ph2				10	10	10	10	10						50
GUBMK/HED Estimate								15						15
Plant Support Ph2					3									3
LL Material										50			150	200
Engineering Ph3									10	10	10	10	10	50
Plant Support Ph3									4	4	4	4	4	20
Installation									55	250	250	250	270	1,075
														0
														0
														0
														0
														0
Project Total		**1**	**100**	**121**	**13**	**10**	**10**	**25**	**69**	**314**	**264**	**264**	**434**	**1,625**

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**									
2	**Phase/Activity**	**FY04**	**FY05**	**FY06**	**FY07**	**FY08**		**Totals**	**Prv Yrs**	
3										
4										
5	**Phase 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										
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									
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										
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										
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: All Phases**	200	75	100	8000	8000		16375		
	Assumptions:									
	1. Design and installation of system will 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 tie-ins									

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**								
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				5		
9	PSS - Inspection						0		
10									
11	**Total Phase 1**	**200**	**212**	**0**	**0**	**0**	**412**		
12									
13	**Phase 2**								
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	6900		
26									
27	**Total Phase 2**	**0**	**268**	**295**	**2830**	**4000**	**7393**		
28									

1	KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage								
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)								
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	
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									
50	**Total Phase 3**	**0**	**1145**	**1210**	**2215**	**4000**		**8570**	
51									
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; 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 tie-ins								
	5. Ph 1 eng includes Peer review ($50k), study of deep french drains ($70k), answering permit questions ($75k)								

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**								
2	**Phase/Activity**	**FY04**	**FY05**	**FY06**	**FY07**	**FY08**	**Totals**	**Prv Yrs**	
3									
4									
5	**Phase 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									
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*	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**								
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									
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									
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: All Phases**	200	75	100	8000	8000	16375		
	Assumptions:								
	1. Design and installation of system will 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 tie-ins								

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 0

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

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

Project
Type: Capital
Cat: ASSET PRESERVATION
Prgm: No Program

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

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. 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

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 0

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

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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

II. Project Economic Evaluation

	Cost Assumptions	Risks
1.	Engineering = $200k in FY 04; $100k in FY 06.	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.

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

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 0

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

Project
Type: Capital
Cat: ASSET PRESERVATION
Prgm: No Program

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

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. 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.

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

News Release

No Information Available

Capital Project Justification Form

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

Project ID KIF530 **Rev#** 0

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

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

Capital Project Justification Form

Project Name	Project ID	Rev#
KIF--DEVELOP FLY ASH, GYPSUM & BOTTOM ASH DISPOSAL CAPACITY	KIF530	0

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

II. Project Economic Evaluation

	Cost Assumptions	Risks
1.	Engineering = $200k in FY 04; $100k in FY 06.	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. Waste production (cubic yards per year): Fly Ash = 410,000 Bottom Ash = 90,000 Gypsum = 750,000	Based on historical data (ash) and similar projects (gypsum).
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	Risks
1.	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.	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

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

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. We 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.

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
Division of Solid Waste Management

Larry F. Cook
Knoxville Field Office Manager

cc: DSWM, Nashville Central Office

RSB /tvaknglcsmda.doc minrmod

CHANGE REQUEST

CR # **KIF530 001 R0**

PART 1: General Information

PART 1A: PROJECT & INITIATOR INFORMATION

Project Title: KIF530: Develop Dry Fly Ash/Bottom Ash Capacity Location /Units: Yard
DCN # NA PA # PCN # KIF530 WO # Other Ref

Check One: ☒ Capital ☐ Job Order ☐ O&M ☐ Other:

Comments:

Initiator Name: Stan Haber Position: PROJECT ENG Date: 01/26/05

PART 1B: REQUESTED CHANGE

Move the target date associated with the activity "Preliminary Engineering Complete (French Drain)" as indicated below.

PART 1C: CAUSE FOR CHANGE

☐ Constructability Issue (Interference) ☐ Insufficient Craft Labor ☐ Inadequate Resource Planning/Dedication
☐ Design Deficiency or Error ☐ Improve Operability / Maintainability ☒ Other
☐ Rework ☐ Inadequate Scope Definition

Other Cause or Explanation : French drain study requires data collection that will not be collected or analyzed in a manner that supports the present target date.

PART 1D: JUSTIFICATION

Preliminary engineering requires analysis of dike borings prior to finishing study of French drains. Additional time is required to allow for data collection and analysis.

PART 1E: CLASSIFICATION

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:
Comment / Explanation: Project is in the study phase.

PART 2: Initiating Organization Approval

Line Manager: Roger Waldrep Date:	Department Manager : Dennis Lundy Date:

PART 3: Impacts

PART 3A: SCHEDULE IMPACT

Targeted Milestones Affected By This Change:	Current Date	Requested Date
Activity LDKAK530PC (Preliminary Engineering Complete)	04 Feb 05	31 Mar 05

PART 3 B: COST IMPACT

Change In Manhours: 0 Change In $: $0 ☐ Detail Est and/or Org Breakdown Info Attached
Comments:

PART 3C: OTHER IMPACTS

☐ Claimed Benefit ☐ EDR, EA, or EIS ☐ Field Support ☐ O&M Manpower ☐ Permits ☐ Subcontractor
☐ Constructability ☐ Engineering ☐ Material Contract ☐ ORI Milestone ☐ Project Churn ☐ Other
☐ Craft Labor ☐ Equipment Life ☐ O&M Cost ☐ Performance ☐ Safety

Comments / Explanation:

PART 4: Final Approval

FPEP Approval Required : ☒ No Yes ☐ Date Obtained
☐ Approve ☐ Approved (No Additional Funding) ☐ Limited Approval (See Comments) ☐ Reject

Authorizing Signature: Title: Date:
Comments:

CHANGE REQUEST

CR # **KIF530 001 R0**

PART 5: Review (Optional)

PART 5A: RECOMMENDED ACTION

Name	Job Title	Approve	Reject[1]	Limited Approval[1]	Date
1- Stan Haber	Project Engineer	☒	☐	☐	
2-	Principal Engineer	☐	☐	☐	
3- Roger Waldrop	Manager, Project Engineering	☐	☐	☐	
4- Dennis Lundy	Manager, FE&TS EDS	☐	☐	☐	
5-		☐	☐	☐	
6-		☐	☐	☐	
7-		☐	☐	☐	
8-		☐	☐	☐	

☐ Information Attached

1 – Provide Comments If Rejected or Limited Approval

PART 5B: COMMENTS

Reviewer 1
Reviewer 2
Reviewer 3
Reviewer 4
Reviewer 5
Reviewer 6
Reviewer 7
Reviewer 8

PART 6: Cost Breakdown (Optional)

PART 6A: CONSTRUCTION PARTNER

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		
Partner Subcontracts			Materials			OCIP		
Fee			Other-See Estimate					

PART 6B: ENGINEERING

TVA Engineering	MHs	Dollars	Engineering Partner	MHs	Dollars	Other	Dollars
Mechanical			Mechanical			Long Lead Material	
Electrical			Electrical			Other:	
Civil			Civil			Other:	
Other:			Other:			Other:	
Other:			Other:			Other:	

CHANGE REQUEST

CR # **KIF530 002 R0**

PART 1: General Information

PART 1A: PROJECT & INITIATOR INFORMATION

Project Title: KIF530: Develop Dry Fly Ash/Bottom Ash Capacity Location /Units: Yard
DCN # NA PA # PCN # KIF530 WO # Other Ref

Check One: ☒ Capital ☐ Job Order ☐ O&M ☐ Other:

Comments:

Initiator Name: Stan Haber Position: PROJECT ENG Date: 03/12/05

PART 1B: REQUESTED CHANGE

Move the target date associated with the activity "Preliminary Engineering Complete (French Drain)" as indicated below.

PART 1C: CAUSE FOR CHANGE

☐ Constructability Issue (Interference) ☐ Insufficient Craft Labor ☐ Inadequate Resource Planning/Dedication
☐ Design Deficiency or Error ☐ Improve Operability / Maintainability ☒ Other
☐ Rework ☐ Inadequate Scope Definition

Other Cause or Explanation : French drain study requires data collection that will not be collected or analyzed in a manner that supports the present target date.

PART 1D: JUSTIFICATION

Engineering of French Drains will not be complete until April 29, 2005.

PART 1E: CLASSIFICATION

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:
Comment / Explanation: Project is in the study phase.

PART 2: Initiating Organization Approval

Line Manager: Roger Waldrep Date:	Department Manager : Dennis Lundy Date:

PART 3: Impacts

PART 3A: SCHEDULE IMPACT

Targeted Milestones Affected By This Change:	Current Date	Requested Date
Activity LDKAK530PC (Preliminary Engineering Complete)	31 MAR 05	29 APR 05

PART 3 B: COST IMPACT

Change In Manhours: 0 Change In $: $0 ☐ Detail Est and/or Org Breakdown Info Attached
Comments:

PART 3C: OTHER IMPACTS

☐ Claimed Benefit ☐ EDR, EA, or EIS ☐ Field Support ☐ O&M Manpower ☐ Permits ☐ Subcontractor
☐ Constructability ☐ Engineering ☐ Material Contract ☐ ORI Milestone ☐ Project Churn ☐ Other
☐ Craft Labor ☐ Equipment Life ☐ O&M Cost ☐ Performance ☐ Safety

Comments / Explanation:

PART 4: Final Approval

FPEP Approval Required : ☒ No Yes ☐ Date Obtained
☐ Approve ☐ Approved (No Additional Funding) ☐ Limited Approval (See Comments) ☐ Reject

Authorizing Signature: Title: Date:
Comments:

CHANGE REQUEST

CR # **KIF530 002 R0**

PART 5: Review (Optional)

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 – Provide Comments If Rejected or Limited Approval

PART 5B: COMMENTS

Reviewer 1
Reviewer 2
Reviewer 3
Reviewer 4
Reviewer 5
Reviewer 6
Reviewer 7
Reviewer 8

PART 6: Cost Breakdown (Optional)

PART 6A: CONSTRUCTION PARTNER

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		
Partner Subcontracts			Materials			OCIP		
Fee			Other-See Estimate					

PART 6B: ENGINEERING

TVA Engineering	MHs	Dollars	Engineering Partner	MHs	Dollars	Other	Dollars
Mechanical			Mechanical			Long Lead Material	
Electrical			Electrical			Other:	
Civil			Civil			Other:	
Other:			Other:			Other:	
Other:			Other:			Other:	

Tennessee Valley Authority
Project Justification System

Owner Org FPG
Lead Org Yard Operations
Proj. Id: KIF530
Proj. Desc: KIF--DEVELOP FLY ASH & BOTTOM ASH DISPOSAL CAPACITY

Rev	PRC Status	PRC Approval	<250k Status	<250k Approval	Est. Type	Total Cost	In-Service Date	Base Year	Reason for Change
4	Approved	10/28/2005			Budget	2,511	9/16/2005	2005	Spendplan change to carryforward $48K from FY05 to FY06 to complete project closure.
3	Approved	7/18/2005			Definitive	2,756	9/16/2005	2005	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.
2	Not Reviewed	1/21/2005			Conceptual	200	9/30/2008	2005	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.
1	Under Review	10/1/2004			Conceptual	16,375	9/30/2008	2004	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.
0	Under Review	6/30/2004			Conceptual	16,375	9/30/2008	2004	New project.

☒ **Project Completion Notice**
☐ **Project Cancellation Notice**

Title of Project Work Document	Develop Fly Ash & Bottom Ash Disposal Capacity	**Project Work Document No.**	KIF530
Organization	FPG - Yard Operations	**Location (County/State)**	Roane/TN

Give details of changes in the completed work form that's authorized by the capital project. List all capital assets added (or retired) as a result of completing the authorized capital project. Assets should be listed at the retirement unit level. If the capital project is cancelled, prepare a write-off project journal voucher and attach a copy of this form as supporting documentation.

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 fly ash and bottom ash within the existing perimeter dikes of the active ash disposal area.

A part II permit package is to be submitted to Environmental Affairs.
Scope will also include the design, materials procurement (pumps and piping, french drains), and installation as necessary to support the engineering study findings.

Completion Analysis - Capital Assets Added (or Retired) - Retirement Unit Level:
Completed as approved.

Show below dates pertaining to the work order as a whole. If major phases of the work or major items of equipment were placed in service prior to work order completion, such dates should be listed in the space above.

Date		Approved By:	Date Approved:
Construction Work Started on	01Jun05	Stan Haber	01Jun05
Project Completed on	14Nov05	Stan Haber	14Nov05
Assets Placed In or Removed From Service on	30Sep05	Harold Catlett	30Sep05
Accepted by Operating Organization on	30Sep05	Harold Catlett	30Sep05

To be used by Fixed Assets Accounting

Project Closed to Completed Plant by _____ **Date** _____

Project Closing Reviewed by _____ **Date** _____

TVA 4013 [11-2005]

Project Review - Performance Impact Checklist

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)	☐	☒	☐	
Frequency of deratings	☐	☒	☐	
Availability				
Planned outage durations	☐	☒	☐	
Forced outage durations	☐	☒	☐	
Unit deratings (MW and duration)	☐	☒	☐	
Repair/replacement time (MTTR)	☐	☒	☐	
Frequency of corrective/preventive maintenance	☐	☒	☐	
MW output (unit capability)	☐	☒	☐	
Thermal				
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	☐	☒	☐	
Customer Requirements				
On-line time (+/- 30 minutes)	☐	☒	☐	
AGC availability	☐	☒	☐	
Net dependable capacity	☐	☒	☐	
Voltage control	☐	☒	☐	
Minimum load	☐	☒	☐	
Unit ramp time	☐	☒	☐	
Cost				
Fuel costs (coal, limestone, chemicals)	☐	☒	☐	
Fuel handling costs	☐	☒	☐	
Operations labor costs	☐	☒	☐	
Maintenance labor costs	☐	☐	☒	
Waste disposal costs (solid or hazardous)	☐	☒	☐	
Inventory costs	☐	☒	☐	
Other costs (identify in Comments)	☐	☐	☒	Electrical power required
Safety				
Public safety	☒	☐	☐	
Employee Safety	☒	☐	☐	
Equipment Safety	☐	☒	☐	
Other Performance Impacts				
Water chemistry specifications	☐	☒	☐	
LIST OTHER IMPACTS BELOW				
)	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	

Project Review - Performance Impact Checklist

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

Location: Kingston PCN KIF530

PERFORMANCE PARAMETERS	Improve	No Impact	Degrade	COMMENTS
Environmental				
NOTE: Initiate the project EMP and evaluate the following environmental impacts 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	☐	☒	☐	
CEMS /COMS availability	☐	☒	☐	
NPDES (Water) discharges	☐	☒	☐	
Shoreline/river impacts	☐	☒	☐	
SPCC/IPP impacts (Fuel, oil, chemical storage)	☐	☒	☐	
EMP Initiated	----------	----------	----------	YES ☒ NO ☐
Permitting/Notifications Identified	----------	----------	----------	YES ☐ NO ☒

PROCEDURE CHANGES	Revisions	No Change	IDENTIFY PROCEDURES
Operations	☒	☐	
Maintenance	☒	☐	
Environmental	☒	☐	
Safety	☐	☒	

PEOPLE PARAMETERS	Needed	No Impact	COMMENTS
People			
Operations Training	☐	☒	
Maintenance Training	☐	☒	
Environmental Training	☐	☒	
Manpower availability	☐	☒	

Project Engineer: Stanley M. Haber Date:

Project Review - Performance Impact Checklist

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)	☐	☒	☐	
Frequency of deratings	☐	☒	☐	
Availability				
Planned outage durations	☐	☒	☐	
Forced outage durations	☐	☒	☐	
Unit deratings (MW and duration)	☐	☒	☐	
Repair/replacement time (MTTR)	☐	☒	☐	
Frequency of corrective/preventive maintenance	☐	☒	☐	
MW output (unit capability)	☐	☒	☐	
Thermal				
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	☐	☒	☐	
Customer Requirements				
On-line time (+/- 30 minutes)	☐	☒	☐	
AGC availability	☐	☒	☐	
Net dependable capacity	☐	☒	☐	
Voltage control	☐	☒	☐	
Minimum load	☐	☒	☐	
Unit ramp time	☐	☒	☐	
Cost				
Fuel costs (coal, limestone, chemicals)	☐	☒	☐	
Fuel handling costs	☐	☒	☐	
Operations labor costs	☐	☒	☐	
Maintenance labor costs	☐	☒	☐	
Waste disposal costs (solid or hazardous)	☐	☒	☐	
Inventory costs	☐	☒	☐	
Other costs (identify in Comments)	☐	☒	☐	
Safety				
Public safety	☐	☒	☐	
Employee Safety	☐	☒	☐	
Equipment Safety	☐	☒	☐	
Other Performance Impacts				
Water chemistry specifications	☐	☒	☐	
LIST OTHER IMPACTS BELOW				
)	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	
	☐	☒	☐	

Project Review - Performance Impact Checklist

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

Location: Kingston PCN KIF530

PERFORMANCE PARAMETERS	Improve	No Impact	Degrade	COMMENTS
Environmental				
NOTE: Initiate the project EMP and evaluate the following environmental impacts 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	☐	☒	☐	
CEMS /COMS availability	☐	☒	☐	
NPDES (Water) discharges	☐	☒	☐	
Shoreline/river impacts	☐	☒	☐	
SPCC/IPP impacts (Fuel, oil, chemical storage)	☐	☒	☐	
EMP Initiated	----------	----------	----------	**YES** ☒ **NO** ☐
Permitting/Notifications Identified	----------	----------	----------	**YES** ☐ **NO** ☒

PROCEDURE CHANGES	Revisions	No Change	IDENTIFY PROCEDURES
Operations	☒	☐	
Maintenance	☒	☐	
Environmental	☐	☒	
Safety	☐	☒	

PEOPLE PARAMETERS	Needed	No Impact	COMMENTS
People			
Operations Training	☐	☒	
Maintenance Training	☐	☒	
Environmental Training	☐	☒	
Manpower availability	☐	☒	

Project Engineer: Stanley M. Haber Date:

Project Success Index

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

Location: Kingston **PCN** KIF530

COST PERFORMANCE

Original Approved Project Cost (cost after project development, i.e., at initial FPEP approval): _____
Final Approved Project Cost (cost estimate at the end of preliminary engineering): _____
Actual Project Cost: _____

Cost Performance Evaluation: Compare the actual costs to both the Original and the Final Approved Budgets

Under Original by 10% or less	5 pts	Under Final by 5% or less	5 pts
Under Original between 10% and 30%	4 pts	Under Final between 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	Over Final between 5% and 20%	1 pt
Over or under Original more than 30%	0 pts	Over or under Final more than 20%	0 pts

Rating for Original Budget (OR) performance: _____ Rating for Final Budget (FR) performance: _____

Rating for Cost Performance (average of ratings for Original and Final costs) **CP = [(OR + FR) / 2] =** _____

SCHEDULE PERFORMANCE

Original Return to Operation Date (date identified at initial FPEP approval): _____
Final Approved Return to Operation Date (date at last FPEP approval of the project): _____
Actual Return to Operation Date: _____

Schedule Performance Evaluation: Compare the Actual Date to the Final Approved Date

Earlier than Approved Schedule by more than 1 week	5 pts
Earlier than Approved Schedule by less than 1 week but more than 1 day	4 pts
On approved Schedule (± 24 hours)	3 pts
Later than Approved Schedule by less than 1 week but more than 1 day	1 pt
Later than Approved Schedule by more than 1 week	0 pts

Rating for Schedule Performance **SP =** _____

BENEFIT PERFORMANCE

Identify each of the benefits claimed for the project in the initial (first FPEP) approved package. For each of those claimed, identify under the "Measure" whether the actual achieved benefit "Exceeded", "Met", or "Failed" to meet the claimed benefit.

Benefit Claim	Measure

Exceeded all performance measures (benefits)	5 pts
Met all performance measures (benefits) and exceeded some	4 pts
Met all performance measures (benefits) or none required for this project	3 pts
Met most of performance measures (benefits) and results satisfactory	2 pts
Met some performance measures (benefits) but results unsatisfactory	1 pt
Met none of the performance measures (benefits)	0 pts

Rating for Benefit Performance **BP =** _____

PROJECT SUCCESS INDEX (PSI)

PSI = [(CP + SP + BP) / 3] = _____ Project Engineer: Stanley M. Haber Date: _____

Project Success Index

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

Location: Kingston **PCN** KIF530

COST PERFORMANCE

Original Approved Project Cost (cost after project development, i.e., at initial FPEP approval):	2756
Final Approved Project Cost (cost estimate at the end of preliminary engineering):	2756
Actual Project Cost:	2531

Cost Performance Evaluation: Compare the actual costs to both the Original and the Final Approved Budgets

Under Original by 10% or less	5 pts	Under Final by 5% or less	5 pts
Under Original between 10% and 30%	4 pts	Under Final between 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	Over Final between 5% and 20%	1 pt
Over or under Original more than 30%	0 pts	Over or under Final more than 20%	0 pts

Rating for Original Budget (OR) performance: 5 Rating for Final Budget (FR) performance: 4

Rating for Cost Performance (average of ratings for Original and Final costs) **CP = [(OR + FR) / 2] =** 4.5

SCHEDULE PERFORMANCE

Original Return to Operation Date (date identified at initial FPEP approval):	09/16/05
Final Approved Return to Operation Date (date at last FPEP approval of the project):	09/16/05
Actual Return to Operation Date:	09/30/05

Schedule Performance Evaluation: Compare the Actual Date to the Final Approved Date

Earlier than Approved Schedule by more than 1 week	5 pts
Earlier than Approved Schedule by less than 1 week but more than 1 day	4 pts
On approved Schedule (± 24 hours)	3 pts
Later than Approved Schedule by less than 1 week but more than 1 day	1 pt
Later than Approved Schedule by more than 1 week	0 pts

Rating for Schedule Performance **SP =** 0

BENEFIT PERFORMANCE

Identify each of the benefits claimed for the project in the initial (first FPEP) approved package. For each of those claimed, identify under the "Measure" whether the actual achieved benefit "Exceeded", "Met", or "Failed" to meet the claimed benefit.

Benefit Claim	Measure
Permitted disposal capacity for flyash and bottom ash by FY07	Exceeded
Successful permitting of this project has provided KIF a back-up site for FGD gypsum disposal.	
This is the only TVA site that has an excess of 30-year life for on-site disposal.	

Exceeded all performance measures (benefits)	5 pts
Met all performance measures (benefits) and exceeded some	4 pts
Met all performance measures (benefits) or none required for this project	3 pts
Met most of performance measures (benefits) and results satisfactory	2 pts
Met some performance measures (benefits) but results unsatisfactory	1 pt
Met none of the performance measures (benefits)	0 pts

Rating for Benefit Performance **BP =** 5

PROJECT SUCCESS INDEX (PSI)

PSI = [(CP + SP + BP) / 3] = 3.1 Project Engineer: Stanley M. Haber Date: 01/13/06

Project Success Index

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

Location: Kingston **PCN** KIF530

COST PERFORMANCE

Original Approved Project Cost (cost after project development, i.e., at initial FPEP approval):	2756
Final Approved Project Cost (cost estimate at the end of preliminary engineering):	2756
Actual Project Cost:	2531

Cost Performance Evaluation: Compare the actual costs to both the Original and the Final Approved Budgets

Under Original by 10% or less	5 pts	Under Final by 5% or less	5 pts
Under Original between 10% and 30%	4 pts	Under Final between 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	Over Final between 5% and 20%	1 pt
Over or under Original more than 30%	0 pts	Over or under Final more than 20%	0 pts

Rating for Original Budget (OR) performance: 5 Rating for Final Budget (FR) performance: 5

Rating for Cost Performance (average of ratings for Original and Final costs) **CP = [(OR + FR) / 2] =** 5

SCHEDULE PERFORMANCE

Original Return to Operation Date (date identified at initial FPEP approval):	09/16/05
Final Approved Return to Operation Date (date at last FPEP approval of the project):	09/16/05
Actual Return to Operation Date:	09/30/05

Schedule Performance Evaluation: Compare the Actual Date to the Final Approved Date

Earlier than Approved Schedule by more than 1 week	5 pts
Earlier than Approved Schedule by less than 1 week but more than 1 day	4 pts
On approved Schedule (± 24 hours)	3 pts
Later than Approved Schedule by less than 1 week but more than 1 day	1 pt
Later than Approved Schedule by more than 1 week	0 pts

Rating for Schedule Performance **SP =** 0

BENEFIT PERFORMANCE

Identify each of the benefits claimed for the project in the initial (first FPEP) approved package. For each of those claimed, identify under the "Measure" whether the actual achieved benefit "Exceeded", "Met", or "Failed" to meet the claimed benefit.

Benefit Claim	Measure
Permitted disposal capacity for flyash and bottom ash by FY07	Exceeded

Exceeded all performance measures (benefits)	5 pts
Met all performance measures (benefits) and exceeded some	4 pts
Met all performance measures (benefits) or none required for this project	3 pts
Met most of performance measures (benefits) and results satisfactory	2 pts
Met some performance measures (benefits) but results unsatisfactory	1 pt
Met none of the performance measures (benefits)	0 pts

Rating for Benefit Performance **BP =** 5

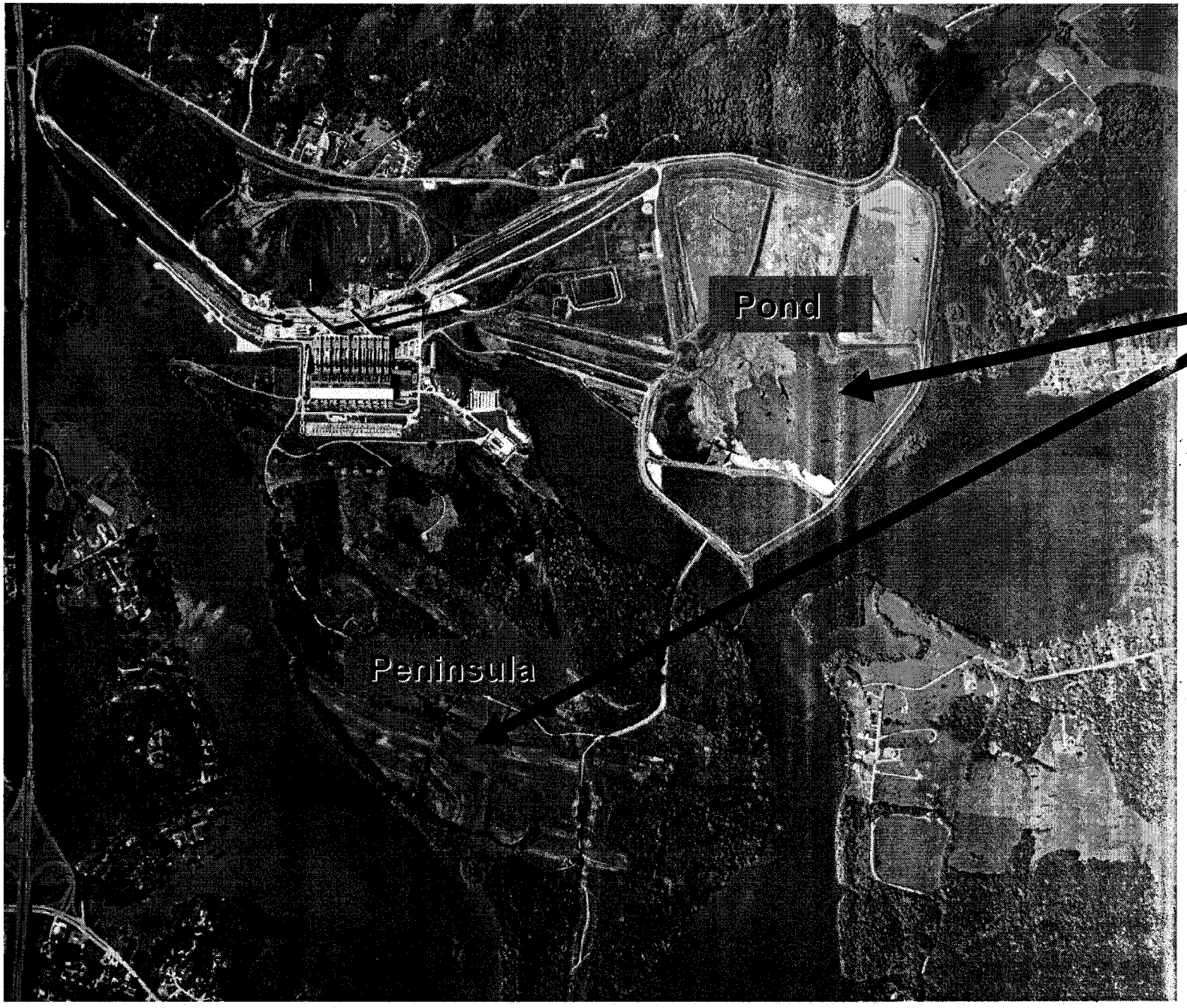
PROJECT SUCCESS INDEX (PSI)

PSI = [(CP + SP + BP) / 3] = 3.3 Project Engineer: Stanley M. Haber Date: 01/13/06

1	**KIF530: Develop Fly Ash, Gypsum, and Bottom Ash Storage**									
2	**Phase/Activity**	**FY04**	**FY05**	**FY06**	**FY07**	**FY08**		**Totals**	**Prv Yrs**	
3										
4										
5	**Phase 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										
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*	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									
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										
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										
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: All Phases**	200	75	100	8000	8000		16375		
	Assumptions:									
	1. Design and installation of system will 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									

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	
14 file(s)		**4,820,745**	**1%**	**4,778,340**	



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
  - TVA took this opportunity to do the engineering and permitting required for a Lateral Expansion utilizing the remaining capacity in the pond complex. This 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
- Even More Flexibility Added to Maintain Gypsum & Ash Separately in Pond Option
- Strengthened our Argument for Not Having a Liner

Where We Are

IT'S DECISION TIME……

Decision Needed for Gypsum Disposal

- ✓Gypsum Production Begins in 2009
- ✓Permit Process for Peninsula Option must begin now to have a facility in-place when Gypsum is produced

Basis for Matrix

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

Basis for Matrix

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.

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 contingencies has been added to the peninsula option to "level the playing field" between the pond and peninsula options.

Basis for Matrix

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)**

Basis for Matrix

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

Assumed cost of $250,000 (2005 dollars) for Stream Mitigation

Based on 1300 linear feet of impact and a "in lieu of" fee of $200/ft of impact per TDEC guidance

Presentation of Options

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

Option 1

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)**

Option 2

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**

Option 3

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**

Option 4

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

Details are in the Appendixes

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

Presentation of Option 2 Costs

Dry Ash in Pond – Gypsum on Peninsula

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

Details are in the Appendixes

Presentation of Option 3 Costs

Wet Ash in Pond – Gypsum in Pond

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

Dry Ash in Pond – Gypsum in Pond

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

Details are in the Appendixes

Summary of Present Worth by Option

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

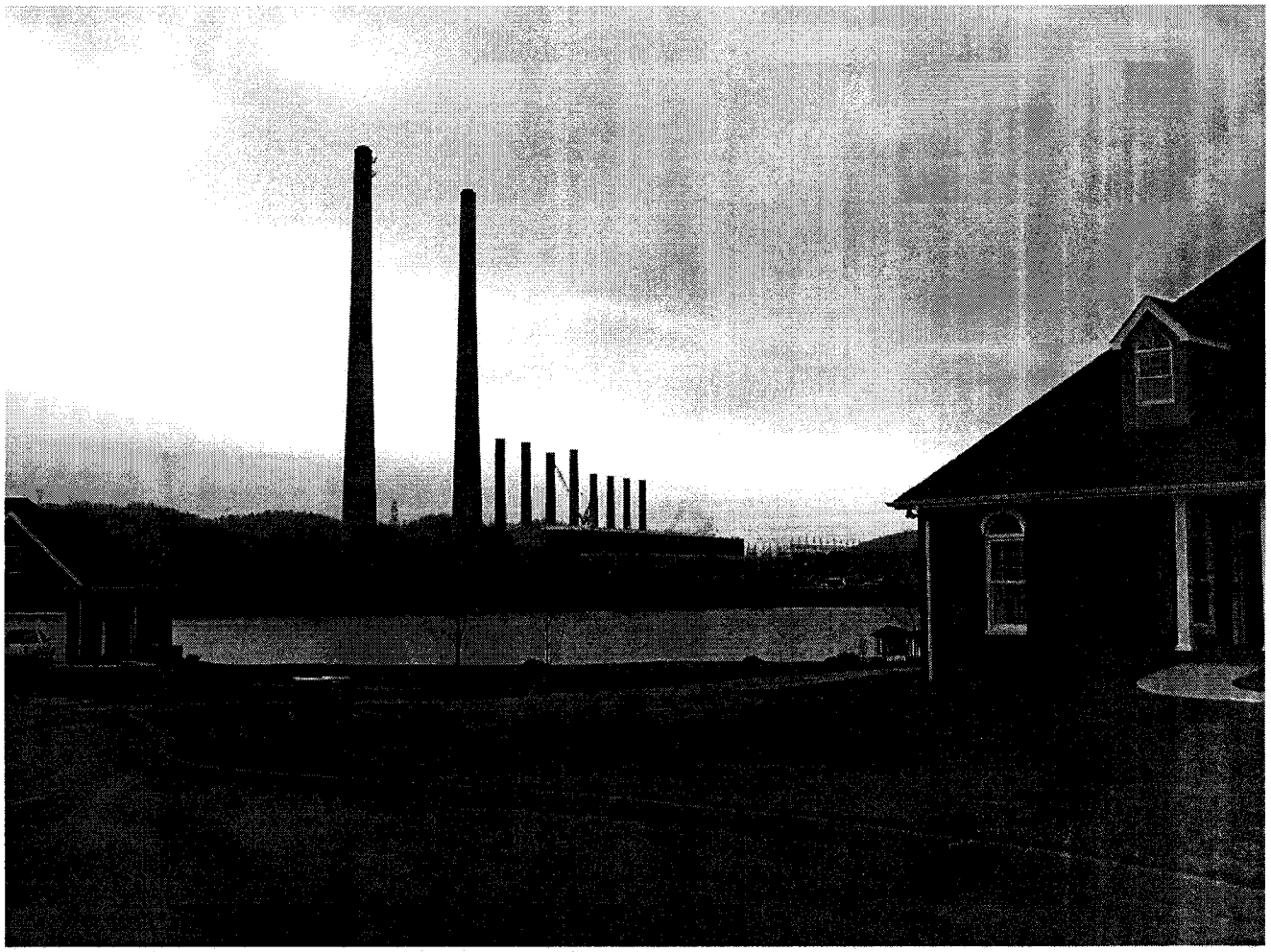
Summary of Non-Economic Factors by Option

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**



There are two significant non-economic issues

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

Engineering Recommendation

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

HOWEVER, WE ALSO RECOMMEND THAT PERMITTING FOR OPTION 3 CONTINUE TO 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
Development of a waste stack for fly ash, bottom ash

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

	Hours	Dollars
Phase I		
Engineering		$270,000
Partner (Non-Manual)		
Other / Other Organizations		$5,000
Total Phase I		***$275,000***
Phase II		
Engineering		$425,000
Long Lead Procurement		$8,000,000
Partner (Non-Manual)		$35,000
Other / Other Organizations		$25,000
Total Phase II		***$8,485,000***
Phase III		
Construction (Partner)		
Permanent Material		$0
Labor (T&L)		$40,000
Labor (Non-Manual)		
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
Engineering		$450,000
Direct plant support + TVA Other Costs		$40,000
Project Risk Dollars		$0
Other / Other Organizations		$0
Total Phase III		***$7,615,000***
All Phases		
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**
For Information only Total Demolition Costs		**$0**

KIF531 (Kennedy Weir)
Meeting Agenda (1/19/05)

- Introductions

- Review the project basis
  - Systems Background
  - CPJ
    - Problem Description
    - Project Scope
    - Performance Measurement
    - Other Options/Alternatives

- Review of notes from 12/10/04 meeting
  - Darlene Keller email
  - Project Impact Checklist
  - EMP

- Project Scope and Schedule
  - Scope definition
  - Implementation schedule

- Action Items

- Next Meeting