Kingston Fossil Plant
Coal Yard Runoff Pond Piping Upgrade
PCN KIF353

June 1, 2000

Team Members:

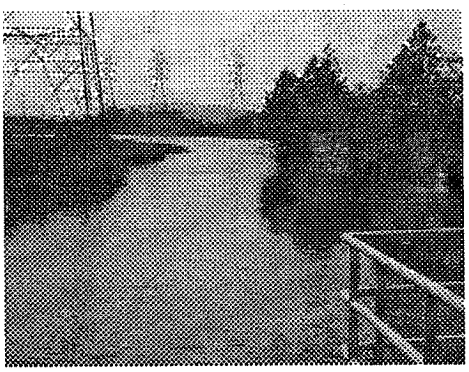
Cherie Minghini	(423) 751-6375
Clark Morris	(423) 751-3214
Scott Sims	(865) 717-2061
Mike Smith	(423) 751-6226
Steve Weaver	(423) 751-3536

Reason For Improvement

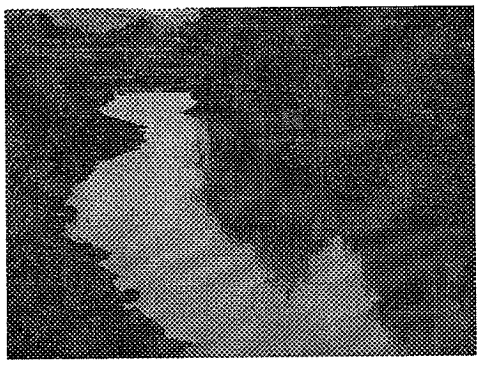
The new coal handling reclaim facility (under construction) flooded on April 29, 1999. The Coal Yard Runoff Pond is approximately 80% full of coal settlement, which leaves only 20% of storage capacity for rain runoff water. This excess drainage backs up onto the coal storage area.

Problem Definition

The rain on 4/29/99, measured 1.75 inches in a 24 hour period. The potential for this magnitude of rain is on average 4.75 (5) times per year, based on historical rain data.



(Picture of Coal Yard Runoff Pond After Rain)



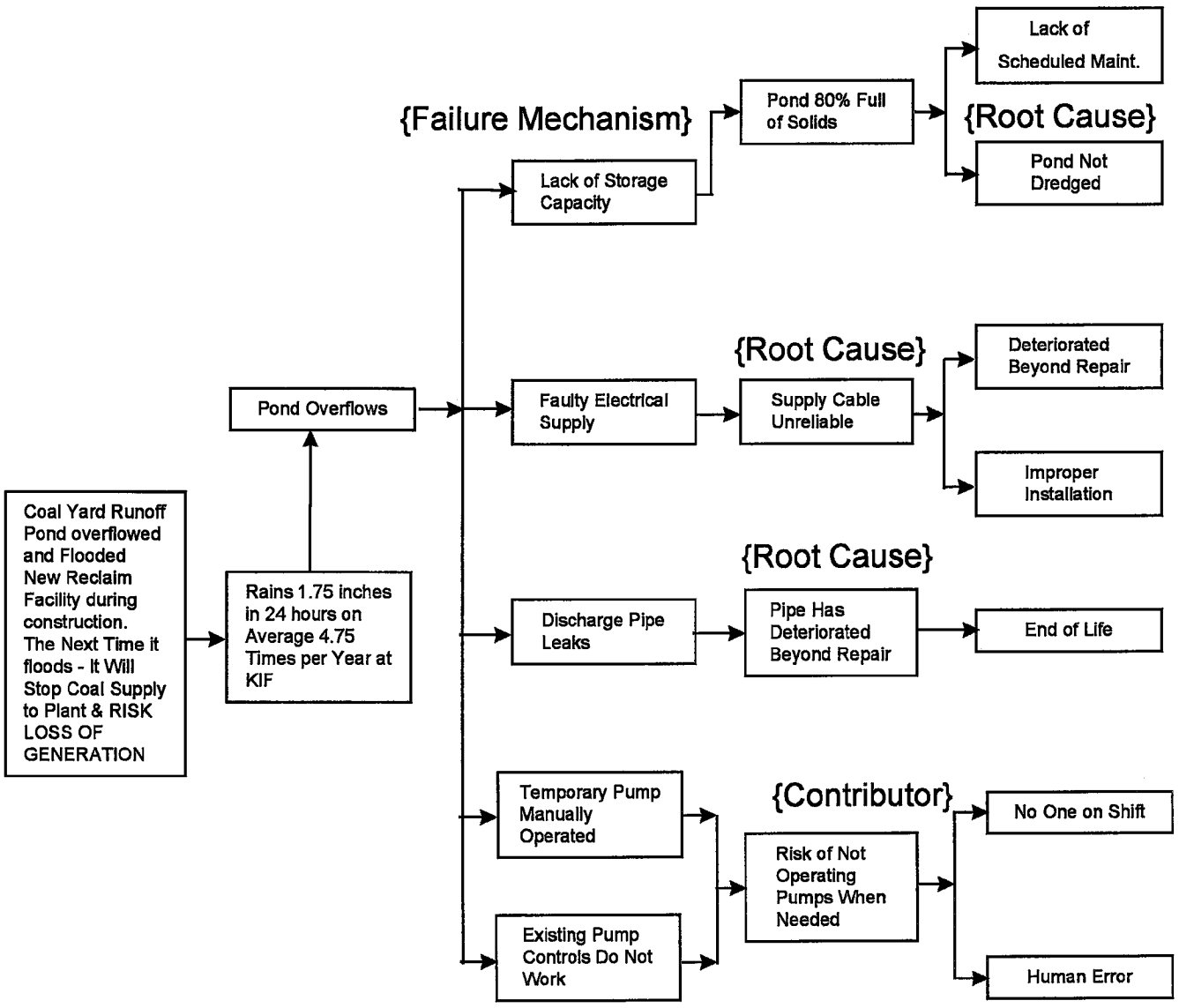
(Same Pond in Between Rain Events)

Analysis

- Heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond decreasing the storage capacity of the pond to about 20% of the original volume.
- Deteriorated Fiberglass Discharge Piping could not handle the increased pressure of the two existing pumps operating simultaneously and
  - The Fiberglass Pipe has now been permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
  - Only one of the two existing pumps could be operated at a time, and could not keep up with the runoff.
- A temporary diesel pump and 14 inch discharge pipe is being used to assist in flood control. This pump & piping will be removed once the reclaim facility construction is complete, scheduled for fall of 2000.
- Presently the existing Pumps are connected to the temporary diesel pump discharge piping.
- The Existing Pumps' Electrical Power Feed is:
  - Deteriorated beyond repair,
  - Unreliable,
  - Permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
  - Trips breaker if both pumps operate at same time.
- The Coal Yard Runoff Pump Controls no longer work and the pumps must be manually turned on and off.
  - Human error could put the new reclaim facility at risk of flooding if pumps are not turned on when needed.

(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

Analysis Continued



Solutions

Flooding of the new reclaim tunnels will shut off the supply of coal and risk the Loss of Generation. Funding for the following will significantly reduce risk:

- Dredge pond to original storage capacity and enlarge.
- Install a new 10" HDPE discharge pipe from pumps to ash pond (approx. 4200 ft.), sleeve under railroad tracks and main plant road.
- Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
- Utilize two existing 1200 gpm pumps at existing pump platform. Both pumps will be able to run simultaneously.
- Install pump float switches for auto start/stop. This will eliminate most of the human error that could be involved with managing the pumps.

Projected Cost of Solution

• Install New 10" Discharge Piping	**260,000**
• Install New Electrical Feed to Existing Pumps	**75,000**
• Dredge Coal Yard Runoff Pond	**100,000**
• Install New Local Pump Controls	**5,000**
• Engineering	**75,000**
• Construction Partner Estimate	**10,000**
• Backcharge dredging, pipe and pump rental, labor, etc.	**$165,000**
• TOTAL	**$690,000**

Solutions Continued

Do Nothing Alternative

- If nothing is done to prevent flooding, the new multi-million dollar reclaim facility tunnels could flood, on average, 5 times per year shutting off the supply of coal to the powerhouse until the water and coal can be pumped out, and the following components dried, cleaned, inspected, repaired and/or replaced:
  - motors, variable speed drive, gear reducers, conveyor belt idlers, bearings
  - electronic circuitry, belt scales, limit switches
  - downtime 8 to 12 weeks

Cost

- Damage associated with the flooded reclaim facility tunnels, estimated by Roberts & Schaefer (R&S)

$3,000,000

- [redacted]

Solutions Continued

Status Quo Alternative

- The present interim operation consists of using a portable diesel pump & above ground dredge pipe. The rental of a manually operated, portable diesel pump and pipe should not be an alternative considered in this evaluation. This option was put in place temporarily as a quick fix before a permanent fix was accomplished.

Risks

- Existing temporary diesel pump
  - Temporary pump will be removed at close of reclaim project.
  - Temporary above ground pipe is HED dredge pipe and could be removed as required by HED.
- Availability of rental pumps and piping
- Reliability
- Flooding when no one is on shift & human error
- Temporary routing of piping will cause damage to other areas of the reservation. The use of drain culverts to route pipe underneath railroad tracks and roads could cause wash out of track beds and/or pavement damage.
- Exposure of temporary above ground pipe is subject to damage from heavy equipment.

Costs

- The rental cost, fuel cost, labor cost for year round use:

  $101,280

- Cost of replacement dredge pipe for HED:

  $40,000

- Costs associated with risks of flooding are similar to the Do Nothing Alternative:
  - Damage associated with the flooded reclaim facility tunnels, estimated by Roberts & Schaefer (R&S):

    $3,000,000

  - Emergency interim coal handling operation to prevent or reduce derating of all 10 units will cost an additional amount as follows during the downtime:

    $330,000 to $500,000

Solution Matrix

	Possible Solutions	Barriers	Aids	Implement
1	Dredge Pond, Install new 10" Piping, Install new Power Feed & New Pump Controls	High Capital Cost, $850,000	Best Solution to prevent flooding & Avoid Loss of Power Generation	YES
2	Do Nothing Alternative, This option should NOT be Considered	Significant Certainty of Flooding Reclaim Facility an Average 5 Times per year, costing up to $3,000,000 for each flood to restore plus up to $500,000 for each emergency interim coal handling operation & possible deratings of all 10 units	No capital cost	No
3	Rent portable diesel pump	Not reliable, manually operated, risk of flooding when nobody is on shift, human error of neglecting to operate diesel pump, high O&M Costs of $101,280 per year, cost of $40,000 to replace HED dredge pipe. Use of temporary pipe routing risks the back up of water in other areas putting at risk the railroad tracks, roads, etc. Potential risk of flooding reclaim facility costing $3,000,000 for each flood to restore plus up to $500,000 for each emergency interim coal handling operation & possible deratings of all 10 units	No capital cost	No

KINGSTON FOSSIL PLANT COAL YARD RUNOFF POND PIPING UPGRADE

March 17, 2000

PROJECTED COSTS REVISED

Contacts:

HED - Clark Morris	**(423) 751-3214**
Scott Sims	**(423) 717-2061**
Fossil Engineering Services	
Cherie Minghini	**(423) 751-6375**
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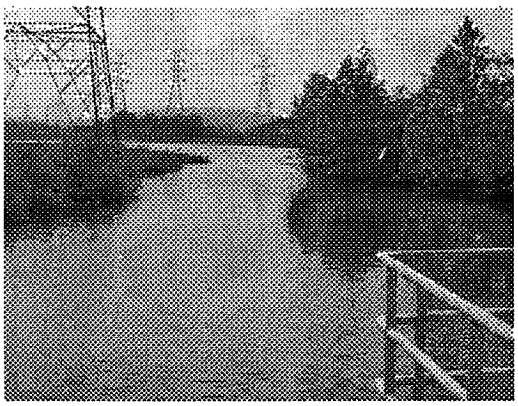
REASON FOR IMPROVEMENT

The new coal handling reclaim facility (under construction) flooded on April 29, 1999. The Coal Yard Runoff Pond is approximately 80% full of coal settlement, which leaves only 20% of storage capacity for rain runoff water. This excess drainage backs up onto the coal storage area

PROBLEM DEFINITION

The rain on 4/29/99, measured 1.75 inches in a 24 hour period. The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.



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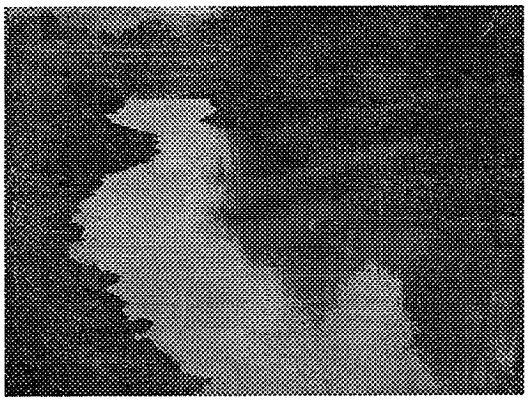

(Same Pond in Between Rain Events)

PROBLEM DEFINITION-CONTINUED

Kingston Significant Rain Data

Date of Occurrence	Inches of Rain in 24 hrs	Date of Occurrence	Inches of Rain in 24 hrs
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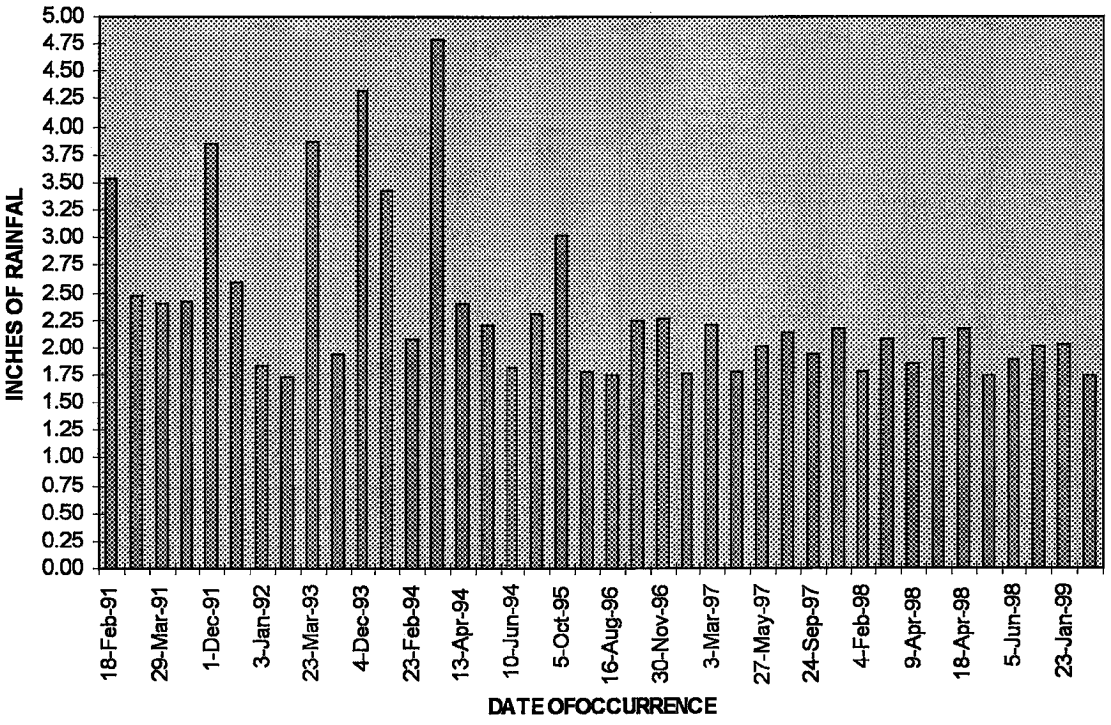
3-Mar-91	2.48	8-Nov-96	2.25
29-Mar-91	2.40	30-Nov-96	2.27
22-Nov-91	2.42	24-Jan-97	1.76
1-Dec-91	3.85	3-Mar-97	2.21
2-Dec-91	2.60	26-May-97	1.79
3-Jan-92	1.83	27-May-97	2.01
4-Oct-92	1.74	14-Jun-97	2.13
23-Mar-93	3.87	24-Sep-97	1.95
6-Aug-93	1.94	26-Oct-97	2.18
4-Dec-93	4.32	4-Feb-98	1.78
11-Feb-94	3.42	8-Mar-98	2.09
23-Feb-94	2.08	9-Apr-98	1.85
27-Mar-94	4.78	17-Apr-98	2.08
13-Apr-94	2.41	18-Apr-98	2.17
26-May-94	2.20	26-May-98	1.75
10-Jun-94	1.82	5-Jun-98	1.89
16-Jul-94	2.32	23-Jul-98	2.01
5-Oct-95	3.02	23-Jan-99	2.03
9-Jun-96	1.79	29-Apr-99	1.75



(Daily Rain Measurements by TVA, Sorted To Include Only 1.75" / 24 Hr. Rains)

ANALYSIS

1. Over the years heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond which has deceased the storage capacity of the pond to about 20% of the original volume.
2. In addition to the heavy rains, only one of the two existing pumps can be operated at a time, thus not allowing the pumps to keep up with the runoff. Only one pump can operate at a time due to the following reasons:
    - Deteriorated Fiberglass Discharge Piping can not handle the increased pressure of both pumps operating simultaneously:
        - Fiberglass Pipe has <u>now</u> been permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
        - Presently the existing Pumps are connected to the temporary diesel pump discharge piping. The purpose of the temporary pump is to assist in keeping the Reclaim Facility Construction Site dry.
        - The temporary diesel pump is scheduled to be removed once construction is complete. (Fall of calendar year 2000)
3. The Coal Yard Runoff Pump Controls no longer work and the pumps must be manually turned on and off.
4. Pumps' Electrical Power Feed is:
    - Deteriorated beyond repair,
    - Unreliable,
    - Only one pump can be operated at a time.

(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

SOLUTIONS

1. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and main plant road.
2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	~~$150,000~~ **(550,000)**
2. Install a new electrical feed through the reclaim tunnel to the floating platform.	~~$125,000~~ **(200,000)**
3. Dredge pond to provide additional storage capacity, 16K cu. Yd	~~$50,000~~ **(100,000)**
4. Controls, float switches	~~$2,000~~ **(5,000)**
5. Engineering	~~$25,000~~ **(75,000)**
6. Contingency	~~$27,000~~ **(60,000)**
7. Partner Estimate	**$10,000**
TOTAL	~~$379,000~~ **(1,000,000)**

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

OTHER OPTIONS CONSIDERED- CONTINUED

Projected Cost of Do Nothing Option

- Roberts & Schaefer (R&S) estimates damages at approximately $3,000,000 for the above worst case scenario. Also, this does not include additional costs associated with emergency coal handling operations while the reclaim facility is being restored.
- Downtime of the reclaim and unloader facilities is estimated to be from at least 8 to 12 weeks just to return to a limited operation. In order to keep the plant on line, an interim coal handling operation would be necessary during the downtime. We estimate additional coal handling costs would range from $330,000 to $500,000.

Status Quo Option

The rental of a portable diesel pump is an alternative considered in this evaluation. Based on the historical rain data, the diesel pump and discharge piping will need to be rented 5 times per year. The costs associated with this are as follows:

• Rent Portable Diesel Pump	$25,200
• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000

Total Annual Costs
$42,200

Ph 1   April 13- June 30

KIF 353

KINGSTON FOSSIL PLANT COAL YARD RUNOFF POND PIPING UPGRADE

Study Drwg
CYPDP

March 17, 2000

Contacts:
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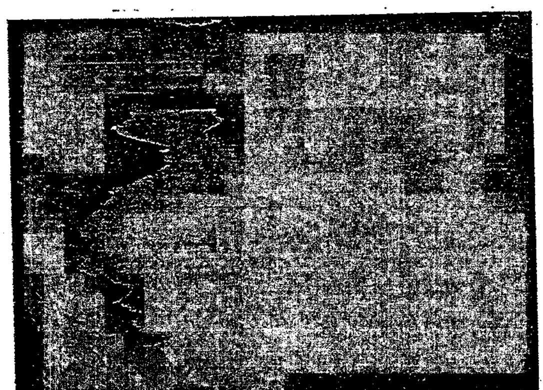

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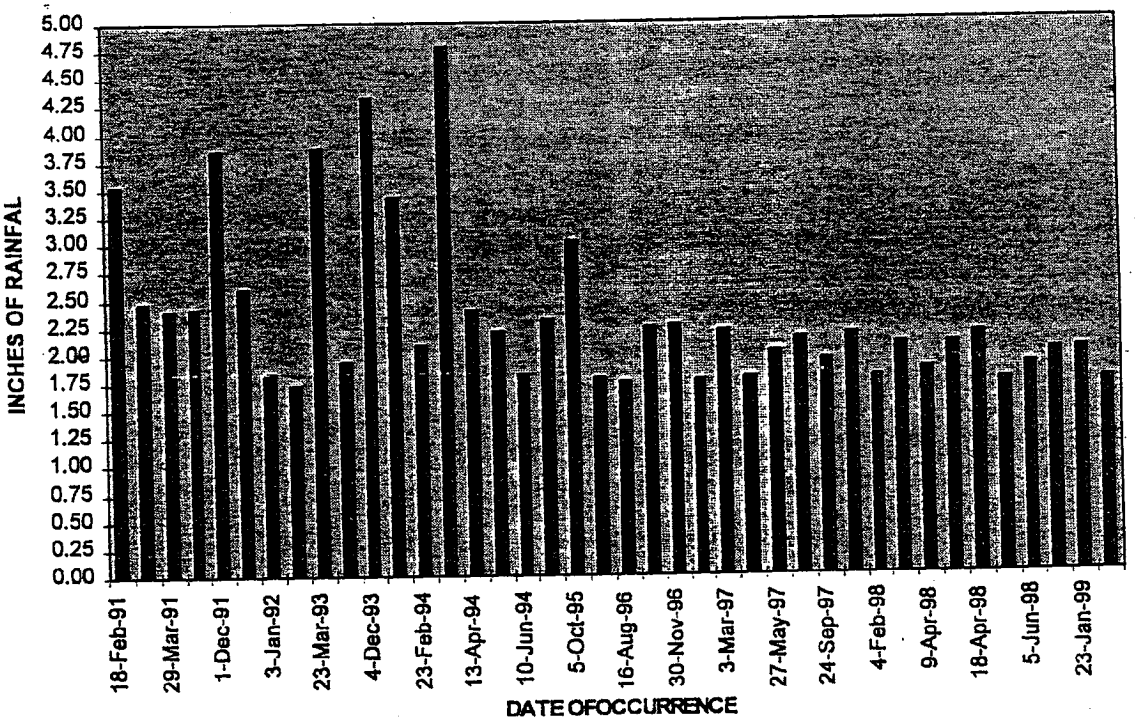

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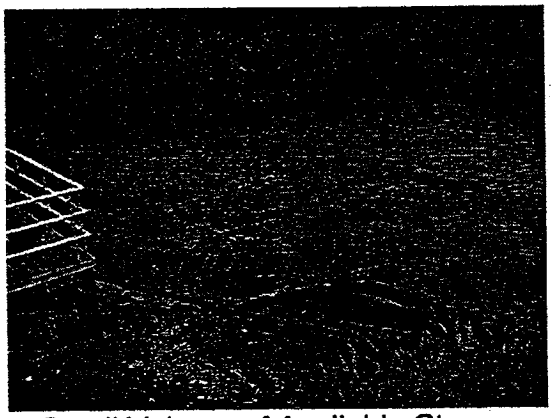

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SOLUTIONS

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2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2. Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3. Dredge pond to provide additional storage capacity, 16K cu. Yd	$50,000
4. Controls, float switches	$2,000
5. Engineering	$25,000
6. Contingency	$27,000
TOTAL	$379,000

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

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- Downtime of the reclaim and unloader facilities is estimated to be from at least 8 to 12 weeks just to return to a limited operation. In order to keep the plant on line, an interim coal handling operation would be necessary during the downtime. We estimate additional coal handling costs would range from $330,000 to $500,000.

OTHER OPTIONS CONSIDERED- CONTINUED

Status Quo Option

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• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000
Total Annual Costs	$42,200

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
NGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	FY: 2000 R#: 0

II. PROJECT ECONOMIC EVALUATION

PROJECT COST

	Thousands of Dollars
SUNK COST:	$0
REMAINING COST:	$0
TOTAL COST:	$379,000 (includes contingency)
CONTINGENCY:	*$27,000*
FORECAST:	*$0*

PROJECT ECONOMIC INDICATORS

NPV:	@15%	IRR:	%
PI:	@ 15%	PAYBACK:	yrs.

PROJECT CASH FLOW

Costs: FY2001

This project consists of the following:

1 Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2 Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3 Engineering	$25,000
4 Dredge pond to provide additional storage capacity, 16K cu. yd.=3000K gallons	$50,000
5 Controls, float switches	$2,000
Contingency	$27,000
	Total $379,000

SUNK		OUT YEARS
Cost: 0	Cost Benefits + Non-Discounted Cash Flow (1,000s)	Cost: 0
Benefit: 0	Cumulative NPV Calculated @ 15% from 1999	Benefit: 0

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

4/15/99

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

II. PROJECT ECONOMIC EVALUATION (continued)

COST ASSUMPTIONS

Cost Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

BENEFIT ASSUMPTIONS

Benefit Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

III. PROGRAM PLAN

IV. PROJECT COORDINATION

SHOULD THIS PROJECT BE LINKED TO ONE OR MORE OTHER PROJECTS?

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

V. REGULATORY

(If this Project is not a Requirement, Commitment, or Nuclear Safety, skip this page.)

THIS PROJECT IS A [ ]

SOURCE OF REQUIREMENT, COMMITMENT, NUCLEAR SAFETY (Provide specific references)

WHAT IS THE PENALTY FOR NON-COMPLIANCE (Financial, Legal, Political)?

DOES THIS PROJECT TOTALLY RESOLVE THIS ISSUE?

YES: X NO: If NO, list other projects required

DOES THIS PROJECT RESOLVE OTHER ISSUES?

YES: If YES, identify the issue(s) NO: X

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES: [ ] If YES, Why? NO: [X]

This project must be completed by: [ ] (Date)

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME

PROJECT ID

FY: 2001 R#:

VI. BOARD / STRATEGIC

WHO DIRECTED?

WHEN?

WHY (Tie to Strategic Directive)?

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES If YES, Why?

NO: X

:

This project must be completed by: (Date)

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
PIPING UPGRADE

March 17, 2000

Contacts:

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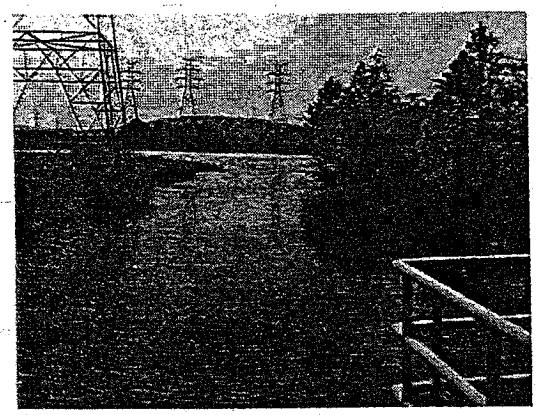

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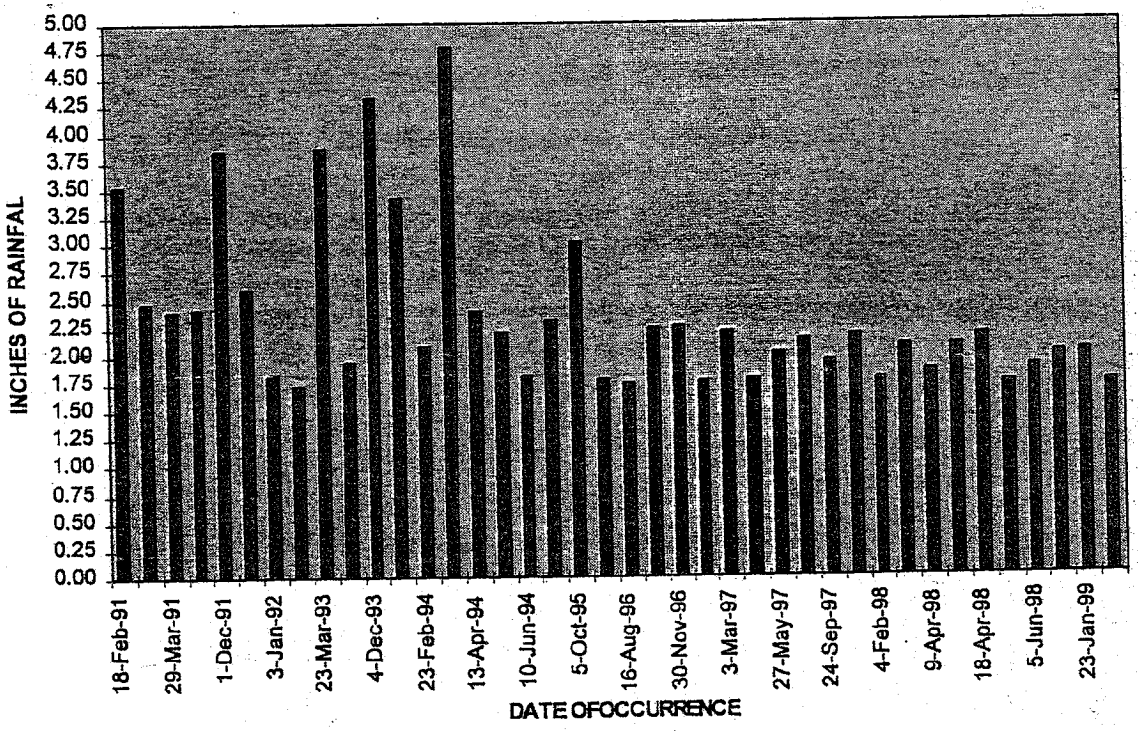
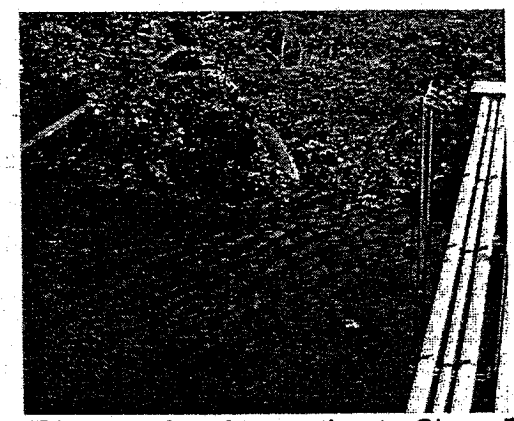
8-Mar-98	2.09
9-Apr-98	1.85
17-Apr-98	2.08
18-Apr-98	2.17
26-May-98	1.75
5-Jun-98	1.89
23-Jul-98	2.01
23-Jan-99	2.03
29-Apr-99	1.75

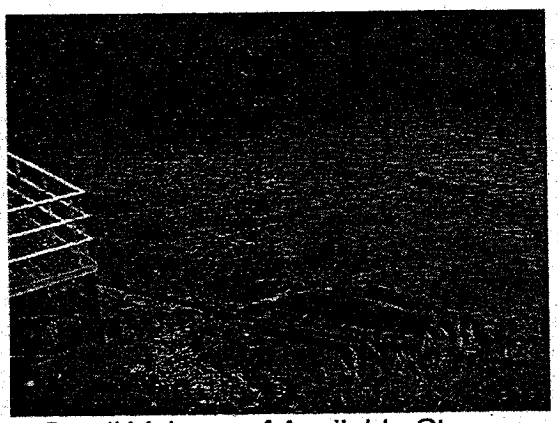


(Daily Rain Measurements by TVA, Sorted To Include Only 1.75" / 24 Hr. Rains)

ANALYSIS

1. Over the years heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond which has deceased the storage capacity of the pond to about 20% of the original volume.
2. In addition to the heavy rains, only one of the two existing pumps can be operated at a time, thus not allowing the pumps to keep up with the runoff. Only one pump can operate at a time due to the following reasons:
    - Deteriorated Fiberglass Discharge Piping can not handle the increased pressure of both pumps operating simultaneously:
        - Fiberglass Pipe has <u>now</u> been permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
        - Presently the existing Pumps are connected to the temporary diesel pump discharge piping. The purpose of the temporary pump is to assist in keeping the Reclaim Facility Construction Site dry.
        - The temporary diesel pump is scheduled to be removed once construction is complete. (Fall of calendar year 2000)
3. The Coal Yard Runoff Pump Controls no longer work and the pumps must be manually turned on and off.
4. Pumps' Electrical Power Feed is:
    - Deteriorated beyond repair,
    - Unreliable,
    - Only one pump can be operated at a time.





(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

SOLUTIONS

1. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and main plant road.
2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2. Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3. Dredge pond to provide additional storage capacity, 16K cu. Yd	$50,000
4. Controls, float switches	$2,000
5. Engineering	$25,000
6. Contingency	$27,000
TOTAL	$379,000

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

Projected Cost of Do Nothing Option

- Roberts & Schaefer (R&S) estimates damages at approximately $3,000,000 for the above worst case scenario. Also, this does not include additional costs associated with emergency coal handling operations while the reclaim facility is being restored.
- Downtime of the reclaim and unloader facilities is estimated to be from at least 8 to 12 weeks just to return to a limited operation. In order to keep the plant on line, an interim coal handling operation would be necessary during the downtime. We estimate additional coal handling costs would range from $330,000 to $500,000.

OTHER OPTIONS CONSIDERED- CONTINUED

Status Quo Option

The rental of a portable diesel pump is an alternative considered in this evaluation. Based on the historical rain data, the diesel pump and discharge piping will need to be rented 5 times per year. The costs associated with this are as follows:

• Rent Portable Diesel Pump	$25,200
• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000
Total Annual Costs	$42,200

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
KINGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	KINGSTON FY: 2001 R#: 0

I. PROJECT DESCRIPTION

PROJECT LOCATION / CSC:	ORGANIZATION	
	OWNER	LEAD
	FPG	KINGSTON

TECHNICAL CONTACT	SPONSORED BY
NAME: STEVE WEAVER	NAME: SCOTT SIMS
PHONE: (423) 751-3536	PHONE: (423) 717-2061
LOCATION: LP 2T-C	LOCATION: KINGSTON

PROJECT CATEGORY

Economic & Regulatory

(**ECONOMIC**, CUSTOMER, **REGULATORY**, BOARD, BLANKET)

REASON FOR IMPROVEMENT (Consequences of not doing)

Coal yard drainage basin overflows its' banks during moderate rains of 1.75 inches/24 hrs. The water flows onto the coal storage area which will fill up the new underground coal live pile reclaim structure (under construction). The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.

PROBLEM DEFINITION

Settlement has reduced the capacity of the drainage basin (pond) by at least 80%. Only one of the two pumps can be operated at a time due to deteriorated discharge piping. Pump must be manually turned on/off. The electrical power feed is deteriorated beyond repair. Flooding the new reclaim tunnels will shut off the supply of coal until it can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal by pan scrapers to the rotary car dumper, and possible derating of all 10 units, if nothing is done (status quo).

PROJECT SCOPE

Dredge pond to original storage capacity and enlarge if possible. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and plant road. Install pump float switches for auto start/stop. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.

IMPACT OF DELAY TO NEXT AVAILABLE IMPLEMENTATION WINDOW

Possible derating of all 10 units at KIF

HOW WILL THE ACHIEVEMENT OF CLAIMED BENEFITS BE MEASURED FOR THIS PROJECT?

1. No disruption to the new coal reclaim facility operation from potential flooding from runoff pond overflow..
2. No derating of units resulting from flooding of new reclaim facility.
3. Avoid additional coal handling costs associated with flooding of new reclaim facility.
4. No environmental impacts (REE'S) of pond overflow into river

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
KINGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	FY: 2000 R#: 0

II. PROJECT ECONOMIC EVALUATION

PROJECT COST

	Thousands of Dollars
SUNK COST:	$0
REMAINING COST:	$0
TOTAL COST:	$379,000 (includes contingency)
CONTINGENCY:	*$27,000*
FORECAST:	*$0*

PROJECT ECONOMIC INDICATORS

NPV:	@15%	IRR:	%
PI:	@ 15%	PAYBACK:	yrs.

PROJECT CASH FLOW

Costs: FY2001

This project consists of the following:

1 Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2 Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3 Engineering	$25,000
4 Dredge pond to provide additional storage capacity, 16K cu. yd.=3000K gallons	$50,000
5 Controls, float switches	$2,000
Contingency	$27,000
	Total $379,000

SUNK			OUT YEARS
Cost:	0	Cost Benefits + Non-Discounted Cash Flow (1,000s)	Cost: 0
Benefit:	0	Cumulative NPV Calculated @ 15% from 1999	Benefit: 0

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

4/15/99

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

II. PROJECT ECONOMIC EVALUATION (continued)

COST ASSUMPTIONS

Cost Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

BENEFIT ASSUMPTIONS

Benefit Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

III. PROGRAM PLAN

IV. PROJECT COORDINATION

SHOULD THIS PROJECT BE LINKED TO ONE OR MORE OTHER PROJECTS?

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

V. REGULATORY

(If this Project is not a Requirement, Commitment, or Nuclear Safety, skip this page.)

THIS PROJECT IS A [ ]

SOURCE OF REQUIREMENT, COMMITMENT, NUCLEAR SAFETY (Provide specific references)

WHAT IS THE PENALTY FOR NON-COMPLIANCE (Financial, Legal, Political)?

DOES THIS PROJECT TOTALLY RESOLVE THIS ISSUE?

YES: X NO: If NO, list other projects required

DOES THIS PROJECT RESOLVE OTHER ISSUES?

YES : If YES, identify the issue(s) NO: X

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES: [ ] If YES, Why? NO: [X]

This project must be completed by: [ ] (Date)

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#:

VI. BOARD / STRATEGIC

WHO DIRECTED?

WHEN?

WHY (Tie to Strategic Directive)?

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES If YES, Why? NO: X

:

This project must be completed by: (Date)

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
PIPING UPGRADE

March 17, 2000

Contacts:

HED - Clark Morris	(423) 751-3214
Scott Sims	(423) 717-2061
Fossil Engineering Services	
Mike Smith	(423) 751-6226
Steve Weaver	(423) 751-3536

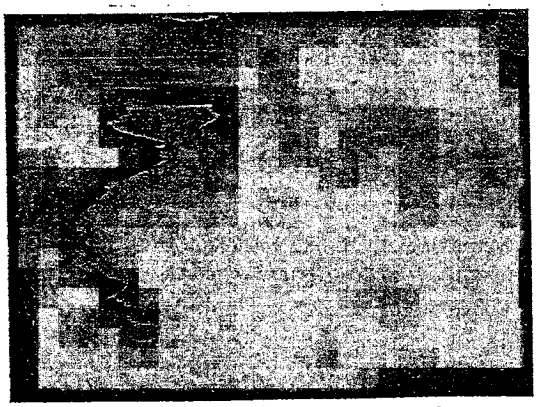
REASON FOR IMPROVEMENT

The new coal handling reclaim facility (under construction) flooded on April 29, 1999. The Coal Yard Runoff Pond is approximately 80% full of coal settlement, which leaves only 20% of storage capacity for rain runoff water. This excess drainage backs up onto the coal storage area

PROBLEM DEFINITION

The rain on 4/29/99, measured 1.75 inches in a 24 hour period. The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.

(Picture of Coal Yard Runoff Pond After Rain)



(Same Pond in Between Rain Events)

PROBLEM DEFINITION-CONTINUED

Kingston Significant Rain Data

Date of Occurrence	Inches of Rain in 24 hrs
18-Feb-91	3.53
3-Mar-91	2.48
29-Mar-91	2.40
22-Nov-91	2.42
1-Dec-91	3.85
2-Dec-91	2.60
3-Jan-92	1.83
4-Oct-92	1.74
23-Mar-93	3.87
6-Aug-93	1.94
4-Dec-93	4.32
11-Feb-94	3.42
23-Feb-94	2.08
27-Mar-94	4.78
13-Apr-94	2.41
26-May-94	2.20
10-Jun-94	1.82
16-Jul-94	2.32
5-Oct-95	3.02
9-Jun-96	1.79

Date of Occurrence	Inches of Rain in 24 hrs
16-Aug-96	1.75
8-Nov-96	2.25
30-Nov-96	2.27
24-Jan-97	1.76
3-Mar-97	2.21
26-May-97	1.79
27-May-97	2.01
14-Jun-97	2.13
24-Sep-97	1.95
26-Oct-97	2.18
4-Feb-98	1.78
8-Mar-98	2.09
9-Apr-98	1.85
17-Apr-98	2.08
18-Apr-98	2.17
26-May-98	1.75
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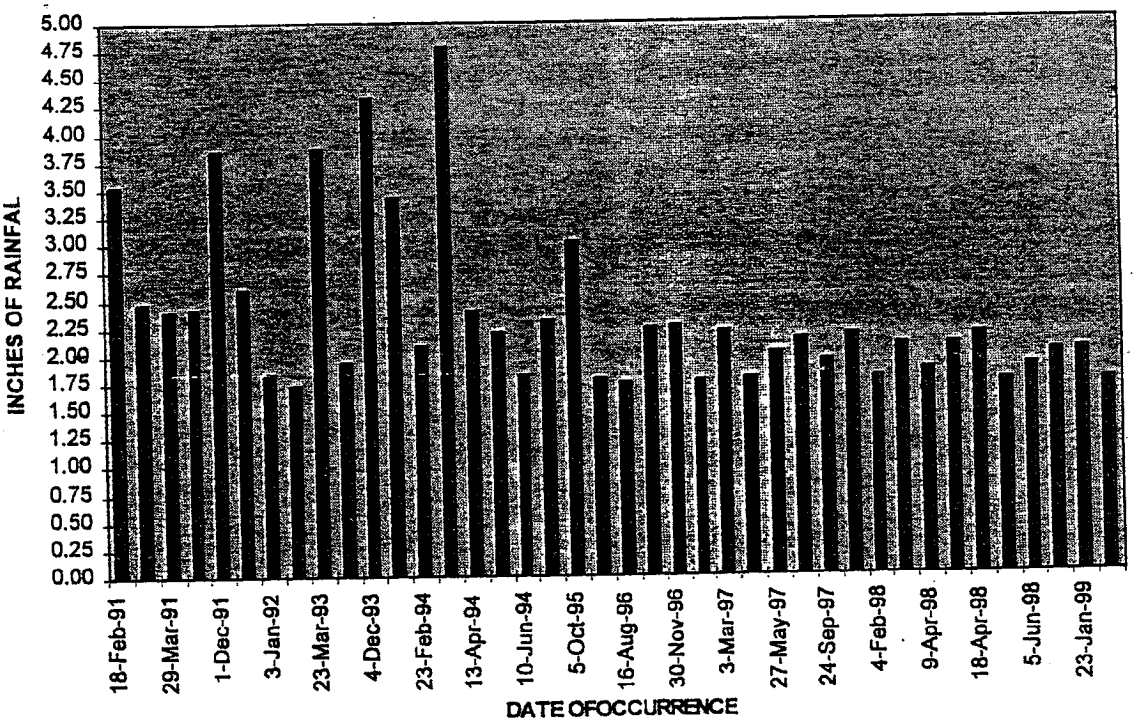

(Daily Rain Measurements by TVA, Sorted To Include Only 1.75" / 24 Hr. Rains)

ANALYSIS

1. Over the years heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond which has deceased the storage capacity of the pond to about 20% of the original volume.
2. In addition to the heavy rains, only one of the two existing pumps can be operated at a time, thus not allowing the pumps to keep up with the runoff. Only one pump can operate at a time due to the following reasons:
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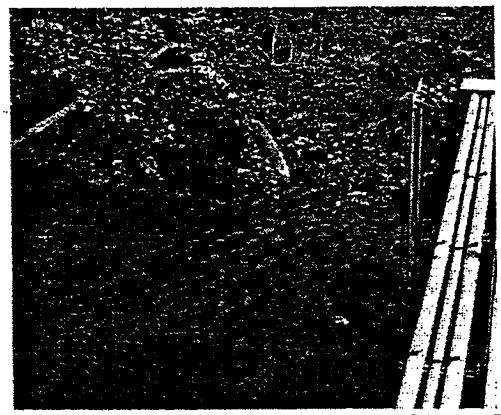

(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

SOLUTIONS

1. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and main plant road.
2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
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4. Controls, float switches	$2,000
5. Engineering	$25,000
6. Contingency	$27,000
TOTAL	$379,000

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

Projected Cost of Do Nothing Option

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OTHER OPTIONS CONSIDERED- CONTINUED

Status Quo Option

The rental of a portable diesel pump is an alternative considered in this evaluation. Based on the historical rain data, the diesel pump and discharge piping will need to be rented 5 times per year. The costs associated with this are as follows:

• Rent Portable Diesel Pump	$25,200
• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000
Total Annual Costs	$42,200

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
NGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	KINGSTON FY: 2001 R#: 0

I. PROJECT DESCRIPTION

PROJECT LOCATION / CSC:	ORGANIZATION	
	OWNER	LEAD
	FPG	KINGSTON

TECHNICAL CONTACT	SPONSORED BY
NAME: STEVE WEAVER	NAME: SCOTT SIMS
PHONE: (423) 751-3536	PHONE: (423) 717-2061
LOCATION: LP 2T-C	LOCATION: KINGSTON

PROJECT CATEGORY

Economic & Regulatory

(ECONOMIC, CUSTOMER, REGULATORY, BOARD, BLANKET)

REASON FOR IMPROVEMENT (Consequences of not doing)

Coal yard drainage basin overflows its' banks during moderate rains of 1.75 inches/24 hrs. The water flows onto the coal storage area which will fill up the new underground coal live pile reclaim structure (under construction). The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.

PROBLEM DEFINITION

Settlement has reduced the capacity of the drainage basin (pond) by at least 80%. Only one of the two pumps can be operated at a time due to deteriorated discharge piping. Pump must be manually turned on/off. The electrical power feed is deteriorated beyond repair. Flooding the new reclaim tunnels will shut off the supply of coal until it can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal by pan scrapers to the rotary car dumper, and possible derating of all 10 units, if nothing is done (status quo).

PROJECT SCOPE

Dredge pond to original storage capacity and enlarge if possible. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and plant road. Install pump float switches for auto start/stop. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.

IMPACT OF DELAY TO NEXT AVAILABLE IMPLEMENTATION WINDOW

Possible derating of all 10 units at KIF

HOW WILL THE ACHIEVEMENT OF CLAIMED BENEFITS BE MEASURED FOR THIS PROJECT?

1. No disruption to the new coal reclaim facility operation from potential flooding from runoff pond overflow..
2. No derating of units resulting from flooding of new reclaim facility.
3. Avoid additional coal handling costs associated with flooding of new reclaim facility.
4. No environmental impacts (REE'S) of pond overflow into river

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
NGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	FY: 2000 R#: 0

II. PROJECT ECONOMIC EVALUATION

PROJECT COST

	Thousands of Dollars
SUNK COST:	$0
REMAINING COST:	$0
TOTAL COST:	$379,000 (includes contingency)
CONTINGENCY:	*$27,000*
FORECAST:	*$0*

PROJECT ECONOMIC INDICATORS

NPV:	@15%	IRR:	%
PI:	@ 15%	PAYBACK:	yrs.

PROJECT CASH FLOW

Costs: FY2001

This project consists of the following:

1 Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2 Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3 Engineering	$25,000
4 Dredge pond to provide additional storage capacity, 16K cu. yd.=3000K gallons	$50,000
5 Controls, float switches	$2,000
Contingency	$27,000
	Total $379,000

SUNK			OUT YEARS
Cost:	0	Cost Benefits + Non-Discounted Cash Flow (1,000s)	Cost: 0
Benefit:	0	Cumulative NPV Calculated @ 15% from 1999	Benefit: 0

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										
Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

4/15/99

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

II. PROJECT ECONOMIC EVALUATION (continued)

COST ASSUMPTIONS

Cost Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

BENEFIT ASSUMPTIONS

Benefit Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID FY: 2001 R#: 0

III. PROGRAM PLAN

IV. PROJECT COORDINATION

SHOULD THIS PROJECT BE LINKED TO ONE OR MORE OTHER PROJECTS?

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

V. REGULATORY

If this Project is not a Requirement, Commitment, or Nuclear Safety, skip this page.)

THIS PROJECT IS A

SOURCE OF REQUIREMENT, COMMITMENT, NUCLEAR SAFETY (Provide specific references)

WHAT IS THE PENALTY FOR NON-COMPLIANCE (Financial, Legal, Political)?

DOES THIS PROJECT TOTALLY RESOLVE THIS ISSUE?

YES: X NO: If NO, list other projects required

DOES THIS PROJECT RESOLVE OTHER ISSUES?

YES : If YES, identify the issue(s) NO: X

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES: [ ] If YES, Why? NO: [X]

This project must be completed by: [ ] (Date)

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME

PROJECT ID

FY: 2001 R#:

VI. BOARD / STRATEGIC

WHO DIRECTED?

WHEN?

WHY (Tie to Strategic Directive)?

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES If YES, Why?

:

NO: X

This project must be completed by: (Date)

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
PIPING UPGRADE

March 17, 2000

Contacts:

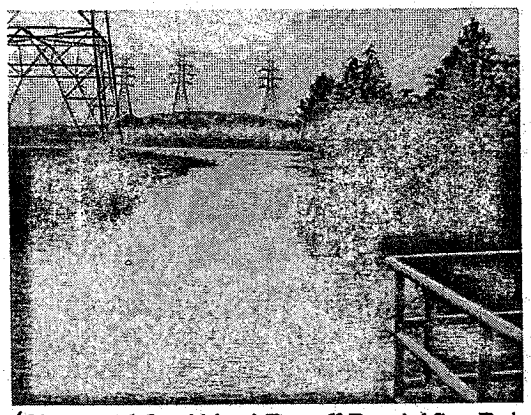
HED - Clark Morris **(423) 751-3214**
Scott Sims **(423) 717-2061**
Fossil Engineering Services
Mike Smith **(423) 751-6226**
Steve Weaver **(423) 751-3536**

REASON FOR IMPROVEMENT

The new coal handling reclaim facility (under construction) flooded on April 29, 1999. The Coal Yard Runoff Pond is approximately 80% full of coal settlement, which leaves only 20% of storage capacity for rain runoff water. This excess drainage backs up onto the coal storage area

PROBLEM DEFINITION

The rain on 4/29/99, measured 1.75 inches in a 24 hour period. The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.



(Picture of Coal Yard Runoff Pond After Rain)

(Same Pond in Between Rain Events)

PROBLEM DEFINITION-CONTINUED

Kingston Significant Rain Data

Date of Occurrence	Inches of Rain in 24 hrs
18-Feb-91	3.53
3-Mar-91	2.48
29-Mar-91	2.40
22-Nov-91	2.42
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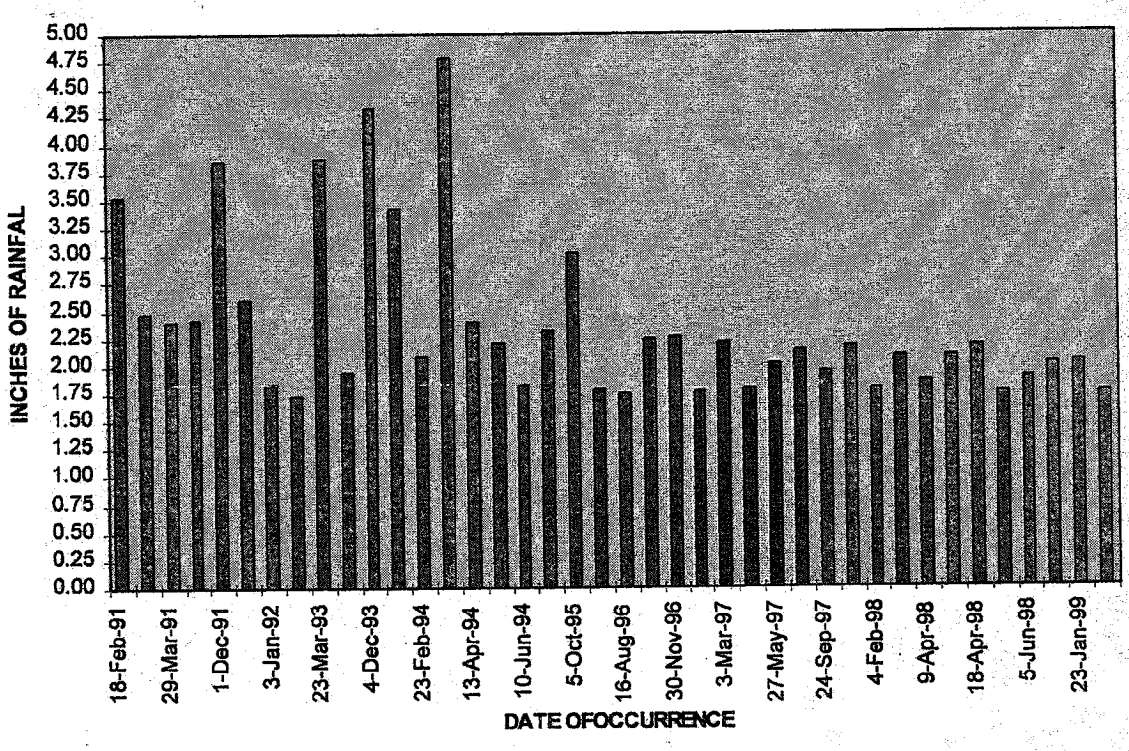
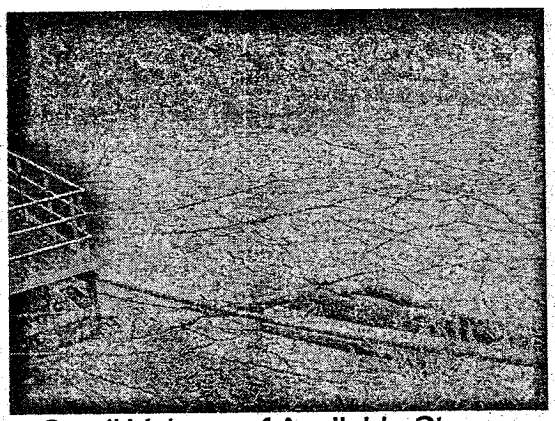
23-Mar-93	3.87
6-Aug-93	1.94
4-Dec-93	4.32
11-Feb-94	3.42
23-Feb-94	2.08
27-Mar-94	4.78
13-Apr-94	2.41
26-May-94	2.20
10-Jun-94	1.82
16-Jul-94	2.32
5-Oct-95	3.02
9-Jun-96	1.79
16-Aug-96	1.75
8-Nov-96	2.25
30-Nov-96	2.27
24-Jan-97	1.76
3-Mar-97	2.21
26-May-97	1.79
27-May-97	2.01
14-Jun-97	2.13
24-Sep-97	1.95
26-Oct-97	2.18
4-Feb-98	1.78
8-Mar-98	2.09
9-Apr-98	1.85
17-Apr-98	2.08
18-Apr-98	2.17
26-May-98	1.75
5-Jun-98	1.89
23-Jul-98	2.01
23-Jan-99	2.03
29-Apr-99	1.75



(Daily Rain Measurements by TVA, Sorted To Include Only 1.75" / 24 Hr. Rains)

ANALYSIS

1. Over the years heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond which has deceased the storage capacity of the pond to about 20% of the original volume.
2. In addition to the heavy rains, only one of the two existing pumps can be operated at a time, thus not allowing the pumps to keep up with the runoff. Only one pump can operate at a time due to the following reasons:
    - Deteriorated Fiberglass Discharge Piping can not handle the increased pressure of both pumps operating simultaneously:
        - Fiberglass Pipe has <u>now</u> been permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
        - Presently the existing Pumps are connected to the temporary diesel pump discharge piping. The purpose of the temporary pump is to assist in keeping the Reclaim Facility Construction Site dry.
        - The temporary diesel pump is scheduled to be removed once construction is complete. (Fall of calendar year 2000)
3. The Coal Yard Runoff Pump Controls no longer work and the pumps must be manually turned on and off.
4. Pumps' Electrical Power Feed is:
    - Deteriorated beyond repair,
    - Unreliable,
    - Only one pump can be operated at a time.



(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

SOLUTIONS

1. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and main plant road.
2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2. Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3. Dredge pond to provide additional storage capacity, 16K cu. Yd	$50,000
4. Controls, float switches	$2,000
5. Engineering	$25,000
6. Contingency	$27,000
TOTAL	$379,000

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

Projected Cost of Do Nothing Option

- Roberts & Schaefer (R&S) estimates damages at approximately $3,000,000 for the above worst case scenario. Also, this does not include additional costs associated with emergency coal handling operations while the reclaim facility is being restored.
- Downtime of the reclaim and unloader facilities is estimated to be from at least 8 to 12 weeks just to return to a limited operation. In order to keep the plant on line, an interim coal handling operation would be necessary during the downtime. We estimate additional coal handling costs would range from $330,000 to $500,000.

OTHER OPTIONS CONSIDERED- CONTINUED

Status Quo Option

The rental of a portable diesel pump is an alternative considered in this evaluation. Based on the historical rain data, the diesel pump and discharge piping will need to be rented 5 times per year. The costs associated with this are as follows:

• Rent Portable Diesel Pump	$25,200
• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000
Total Annual Costs	$42,200

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND
PIPING UPGRADE

March 17, 2000

Contacts:

HED - Clark Morris (423) 751-3214
Scott Sims (423) 717-2061
Fossil Engineering Services
Mike Smith (423) 751-6226
Steve Weaver (423) 751-3536

REASON FOR IMPROVEMENT

The new coal handling reclaim facility (under construction) flooded on April 29, 1999. The Coal Yard Runoff Pond is approximately 80% full of coal settlement, which leaves only 20% of storage capacity for rain runoff water. This excess drainage backs up onto the coal storage area

PROBLEM DEFINITION

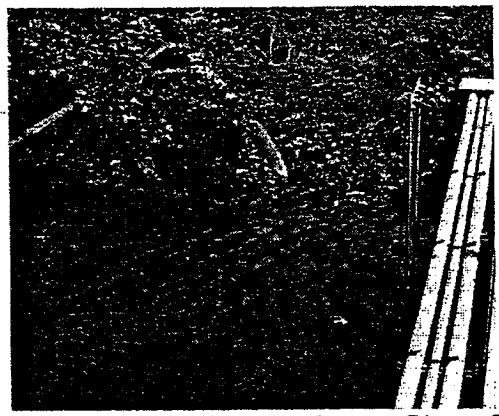
The rain on 4/29/99, measured 1.75 inches in a 24 hour period. The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.

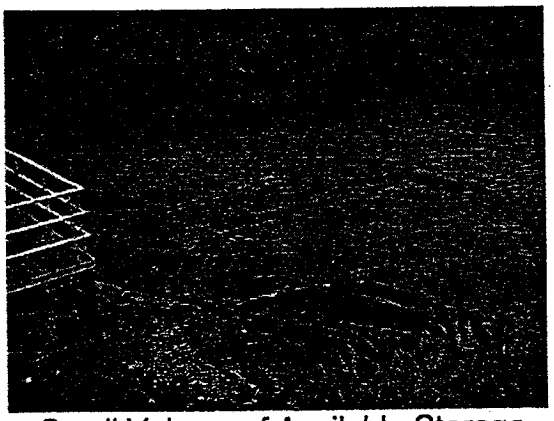
(Picture of Coal Yard Runoff Pond After Rain)

(Same Pond in Between Rain Events)

ANALYSIS

1. Over the years heavy rain falls have washed fine particles of coal from the Coal Storage Yard into the Coal Yard Runoff Pond which has deceased the storage capacity of the pond to about 20% of the original volume.
2. In addition to the heavy rains, only one of the two existing pumps can be operated at a time, thus not allowing the pumps to keep up with the runoff. Only one pump can operate at a time due to the following reasons:
    - Deteriorated Fiberglass Discharge Piping can not handle the increased pressure of both pumps operating simultaneously:
        - Fiberglass Pipe has now been permanently severed for construction of new railroad loop track to the rail hopper, and is no longer usable.
        - Presently the existing Pumps are connected to the temporary diesel pump discharge piping. The purpose of the temporary pump is to assist in keeping the Reclaim Facility Construction Site dry.
        - The temporary diesel pump is scheduled to be removed once construction is complete. (Fall of calendar year 2000)
3. The Coal Yard Runoff Pump Controls no longer work and the pumps must be manually turned on and off.
4. Pumps' Electrical Power Feed is:
    - Deteriorated beyond repair,
    - Unreliable,
    - Only one pump can be operated at a time.





(Pictures Are Attempting to Show Relative Small Volume of Available Storage Capacity)

SOLUTIONS

1. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and main plant road.
2. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.
3. Dredge pond to original storage capacity and enlarge if possible.
4. Install pump float switches for auto start/stop.

Projected Cost of Solution

1. Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2. Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3. Dredge pond to provide additional storage capacity, 16K cu. Yd	$50,000
4. Controls, float switches	$2,000
5. Engineering	$25,000
6. Contingency	$27,000
TOTAL	$379,000

OTHER OPTIONS CONSIDERED

Do Nothing Option

The status quo should not be considered. Flooding of the new reclaim tunnels will shut off the supply of coal until the water and coal can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches as well as damaged gear reducers, conveyor belt idlers, bearings, etc. are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal, and possible derating of all 10 units.

Projected Cost of Do Nothing Option

- Roberts & Schaefer (R&S) estimates damages at approximately $3,000,000 for the above worst case scenario. Also, this does not include additional costs associated with emergency coal handling operations while the reclaim facility is being restored.
- Downtime of the reclaim and unloader facilities is estimated to be from at least 8 to 12 weeks just to return to a limited operation. In order to keep the plant on line, an interim coal handling operation would be necessary during the downtime. We estimate additional coal handling costs would range from $330,000 to $500,000.

OTHER OPTIONS CONSIDERED- CONTINUED

Status Quo Option

The rental of a portable diesel pump is an alternative considered in this evaluation. Based on the historical rain data, the diesel pump and discharge piping will need to be rented 5 times per year. The costs associated with this are as follows:

• Rent Portable Diesel Pump	$25,200
• Fuel Costs for Pump	$3,000
• Laborer to Fuel, Operate & Maintain Pump	$3,000
• Rent Discharge Pipe	$1,200
• Dredge Portion of Pond	$10,000
Total Annual Costs	$42,200

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
NGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	KINGSTON FY: 2001 R#: 0

I. PROJECT DESCRIPTION

PROJECT LOCATION / CSC:	ORGANIZATION	
	OWNER	LEAD
	FPG	KINGSTON

TECHNICAL CONTACT	SPONSORED BY
NAME: STEVE WEAVER	NAME: SCOTT SIMS
PHONE: (423) 751-3536	PHONE: (423) 717-2061
LOCATION: LP 2T-C	LOCATION: KINGSTON

PROJECT CATEGORY

Economic & Regulatory

(ECONOMIC, CUSTOMER, REGULATORY, BOARD, BLANKET)

REASON FOR IMPROVEMENT (Consequences of not doing)

Coal yard drainage basin overflows its' banks during moderate rains of 1.75 inches/24 hrs. The water flows onto the coal storage area which will fill up the new underground coal live pile reclaim structure (under construction). The potential for this magnitude of rain is on average 4.75 times per year, based on historical rain data.

PROBLEM DEFINITION

Settlement has reduced the capacity of the drainage basin (pond) by at least 80%. Only one of the two pumps can be operated at a time due to deteriorated discharge piping. Pump must be manually turned on/off. The electrical power feed is deteriorated beyond repair. Flooding the new reclaim tunnels will shut off the supply of coal until it can be pumped out, and the new motors, variable speed drive electronic circuitry, belt scales, limit switches are dried, cleaned inspected repaired and/or replaced, resulting in emergency hauling of coal by pan scrapers to the rotary car dumper, and possible derating of all 10 units, if nothing is done (status quo).

PROJECT SCOPE

Dredge pond to original storage capacity and enlarge if possible. Install a new 10" HDPE discharge pipe from pumps to ash pond (4200 ft.), sleeve under railroad tracks and plant road. Install pump float switches for auto start/stop. Install a new power feed from new electrical equipment room through new reclaim tunnel, and a direct burial armored cable from end of tunnel to the pumps. Cable will be buried 5 feet deep and sleeved at road crossings.

IMPACT OF DELAY TO NEXT AVAILABLE IMPLEMENTATION WINDOW

Possible derating of all 10 units at KIF

HOW WILL THE ACHIEVEMENT OF CLAIMED BENEFITS BE MEASURED FOR THIS PROJECT?

1. No disruption to the new coal reclaim facility operation from potential flooding from runoff pond overflow..
2. No derating of units resulting from flooding of new reclaim facility.
3. Avoid additional coal handling costs associated with flooding of new reclaim facility.
4. No environmental impacts (REE'S) of pond overflow into river

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
KINGSTON FOSSIL PLANT - COAL YARD RUNOFF POND - PIPING UPGRADE	FY: 2000 R#: 0

II. PROJECT ECONOMIC EVALUATION

PROJECT COST

	Thousands of Dollars
SUNK COST:	$0
REMAINING COST:	$0
TOTAL COST:	$379,000 (includes contingency)
CONTINGENCY:	*$27,000*
FORECAST:	*$0*

PROJECT ECONOMIC INDICATORS

NPV:	@15%	IRR:	%
PI:	@ 15%	PAYBACK:	yrs.

PROJECT CASH FLOW

Costs: FY2001

This project consists of the following:

1 Replace the pump discharge piping from the floating platform to the ash pond with HDPE piping	$150,000
2 Install a new electrical feed through the reclaim tunnel to the floating platform.	$125,000
3 Engineering	$25,000
4 Dredge pond to provide additional storage capacity, 16K cu. yd.=3000K gallons	$50,000
5 Controls, float switches	$2,000
Contingency	$27,000
	Total $379,000

SUNK			OUT YEARS
st:	0	Cost Benefits + Non-Discounted Cash Flow (1,000s)	Cost: 0
fit:	0	Cumulative NPV Calculated @ 15% from 1999	Benefit: 0

Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										
Year:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cost:										
Benefit:										
Cum NPV:										

4/15/99

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

II. PROJECT ECONOMIC EVALUATION (continued)

COST ASSUMPTIONS

Cost Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

BENEFIT ASSUMPTIONS

Benefit Assumptions	CL L/M/H	Basis for Confidence Level (CL)	Sensitivity/Range Low	Most Probable	High

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

III. PROGRAM PLAN

IV. PROJECT COORDINATION

SHOULD THIS PROJECT BE LINKED TO ONE OR MORE OTHER PROJECTS?

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME	PROJECT ID
	FY: 2001 R#: 0

V. REGULATORY

If this Project is not a Requirement, Commitment, or Nuclear Safety, skip this page.)

THIS PROJECT IS A

SOURCE OF REQUIREMENT, COMMITMENT, NUCLEAR SAFETY (Provide specific references)

WHAT IS THE PENALTY FOR NON-COMPLIANCE (Financial, Legal, Political)?

DOES THIS PROJECT TOTALLY RESOLVE THIS ISSUE?

YES: X NO: If NO, list other projects required

DOES THIS PROJECT RESOLVE OTHER ISSUES?

YES If YES, identify the issue(s) NO: X

:

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES: [ ] If YES, Why? NO: [X]

This project must be completed by: [ ] (Date)

CAPITAL PROJECT JUSTIFICATION FORM

PROJECT NAME

PROJECT ID

FY: 2001 R#:

VI. BOARD / STRATEGIC

WHO DIRECTED?

WHEN?

WHY (Tie to Strategic Directive)?

THIS PROJECT MUST BE FUNDED THIS YEAR?

YES If YES, Why?

NO: X

:

This project must be completed by: (Date)