

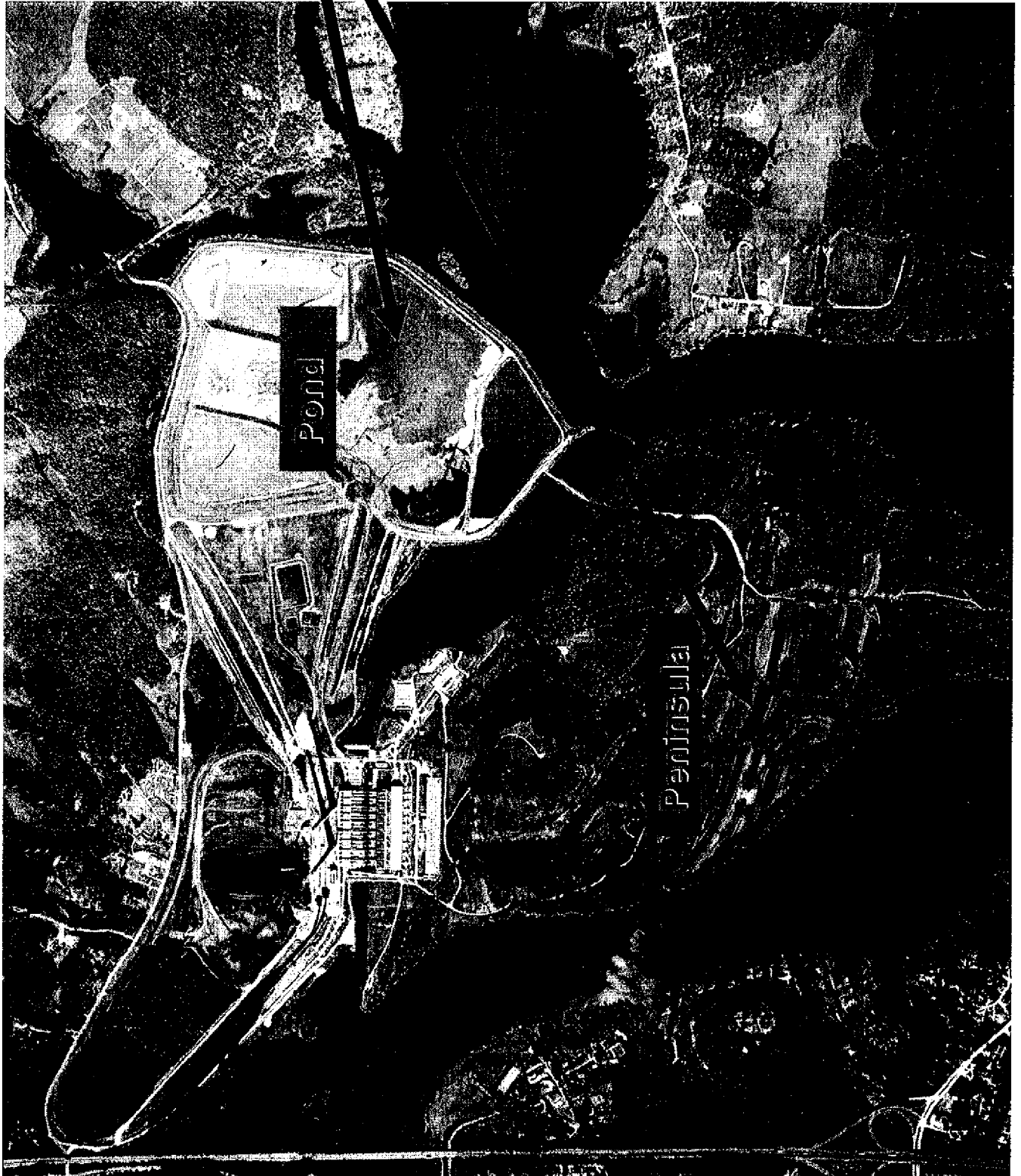
Kingston Fossil Plant Decision Matrix

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's 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

Directive to Revisit a Pond Only Option

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 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:

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 another 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 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 modified by HED (Larry Radford)**

Basis for Matrix

Peninsula Options Include:

Assumed cost of \$ 513,000 for Karst Mitigation

Must be an Assumption – Exact Cost will not be known until construction is completed

Assumed cost of \$260,000 for Wetland 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 Study Period**

Option 2

Dry Ash in Pond – Gypsum on Peninsula

- **No Fix for Dredge Cells on Swan Pond Required**
- **Gypsum Wet Stacking on Peninsula**
- **For Study Purposes 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

- **No Fix for Dredge Cells on Swan Pond Required**
- **Dredge Cells are Operational for the Next 25 years**
- **For Study Purposes 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 Pond – Gypsum on Peninsula

Details are in the
Appendixes

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

Presentation of Option 3 Costs

Wet Ash in Pond – Gypsum in Pond

Details are in the
Appendixes

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

Presentation of Option 4 Costs

Dry Ash in Pond - Gypsum in Pond

Details are in the
Appendixes

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

Summary of Present Worth's by Option

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

Summary of Non-Cost 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

Option 3

Wet Ash in Pond –
Gypsum in Pond

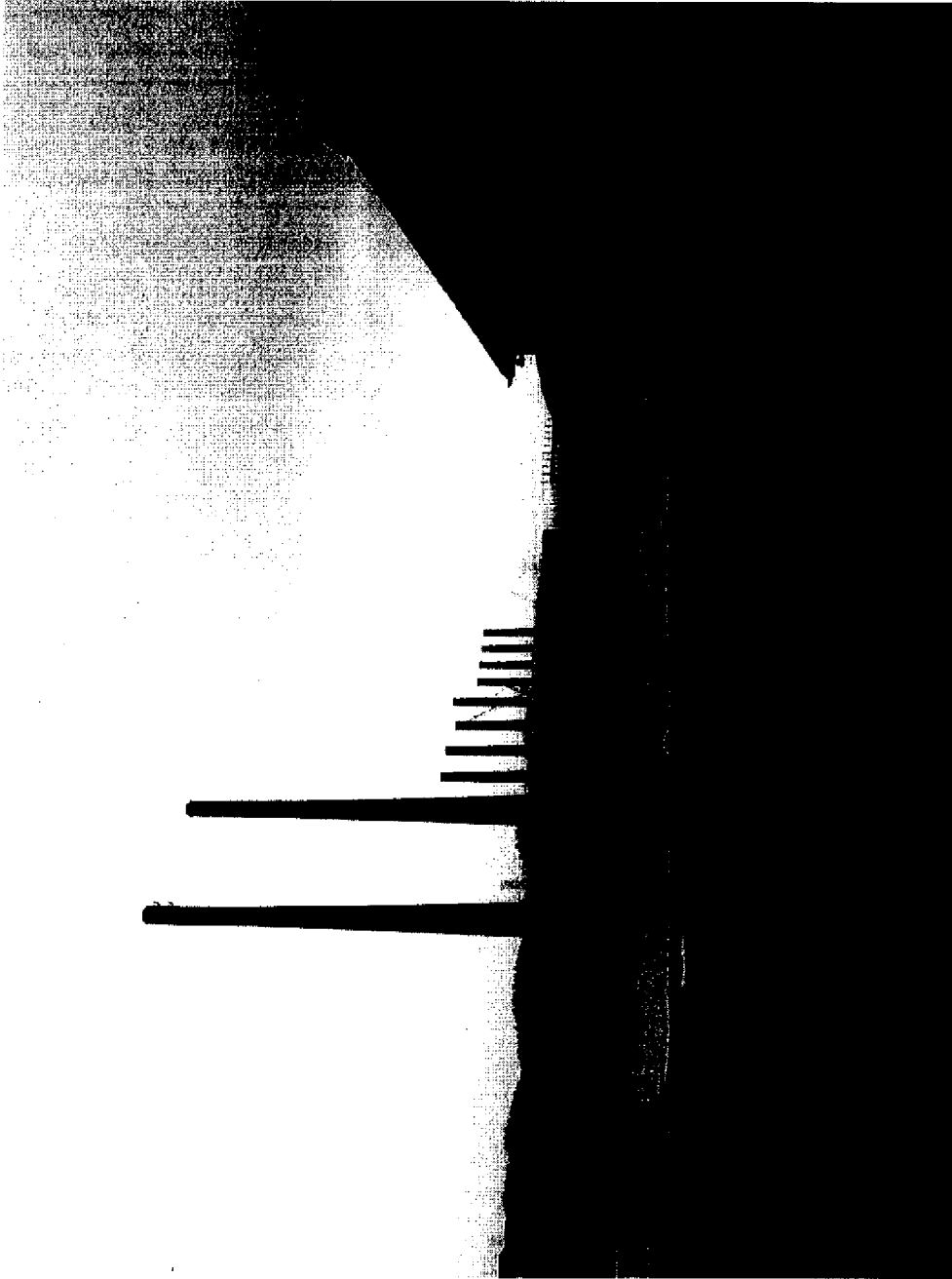
•Permit is already in process

•Less potential for public
opposition

•More operationally complex

•Does not involve any
greenfield impacts

•Utilizes potential ash
disposal capacity for gypsum



- 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
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

Appendix A – Permitting Milestones

Appendix B – Cost Spreadsheets

Appendix C – Detailed Cost Sheets