TVA 64 (OS-9-65) (OP-WP-5-85)

Extras

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

B65 '88 0524 014

TO : Jerry L. Golden, Manager of Fossil Engineering, 8-197 SB-K

FROM : R. E. Harris, Civil Project Engineer, 7-198 SB-K

DATE : MAY 2 4 1988

SUBJECT: KINGSTON STEAM PLANT - ANNUAL POWER ENGINEERING AND CONSTRUCTION AND FOSSIL AND HYDRO POWER JOINT INSPECTION OF THE ASH DISPOSAL AREA

Attached is the inspection report of the Kingston ash disposal areas dated May 11, 1988 (B65 880511 001) performed on April 29, 1988. This report includes recommendations for corrective work. I concur with these recommendations.

R. E. Harris

REH:JTW:HLL
Attachment
cc (Attachment):
J. L. Golden, 8-197 SB-K

JLG:HLL - MAY 2 4 1988
cc (Attachment):
W. M. Bivens, 12-113 SB-K

WMB:HLL
cc (Attachment):
RIMS, SL 26 C-K
Gene Farmer, 12-109 SB-K (3)
Paul Wade, LP 3S 58K-C (5)

This was prepared principally by J. T. Weatherford, extension 6559.

2610f

FEP REPORT

TVA 10752 (OE-6-85)

TITLE KINGSTON STEAM PLANT - ALL UNITS - ANNUAL JOINT INSPECTION BY THE DIVISION OF POWER ENGINEERING AND CONSTRUCTION AND THE DIVISION OF FOSSIL AND HYDRO POWER	REPORT NO. FEP-A.SH-88-04
	PLANT/UNIT KIF-ALL UNITS
	SAR SECTIONS

VENDOR	CONTRACT NO.	KEY NOUNS	UNID SYSTEM(S)

	REV	(FOR RIMS USE)	RIMS ACCESSION NUMBER
	R0		B65 '88 0511 001
APPLICABLE DESIGN DOCUMENTS	R1		
	R2		
REFERENCES	R3		
	R4		

TENNESSEE VALLEY AUTHORITY

OFFICE OF POWER

FOSSIL ENGINEERING PROJECT

	REVISION 0	R1	R2	R3	R4
DATE	MAY 1 1 1988				
PREPARED	J. L. Scarbrough				
CHECKED					
REVIEWED	K. W. Burnett				
APPROVED	R. E. Harris				

cc: RIMS, SL26 C-K

TENNESSEE VALLEY AUTHORITY

OFFICE OF POWER

POWER ENGINEERING
FOSSIL ENGINEERING PROJECT

INSPECTION OF

KINGSTON STEAM PLANT

ASH DISPOSAL AREAS

JOINT PE&C-F&H PR
INSPECTION

INSPECTED: APRIL 29, 1988

EXECUTIVE SUMMARY

On April 29, 1988, the annual joint inspection of the ash disposal areas was conducted by representatives of PE and F&H PR. This was a visual inspection to appraise the general condition of the ash disposal areas and their associated dikes. The action taken on recommendations of the last inspection was evaluated and additional recommendations for corrective work are made.

1.0 General

1.1 This joint Power Engineering (PE) - Fossil and Hydro Power (F&H PR) inspection of the ash disposal areas was conducted on April 29, 1988 by the following personnel.

John Albright, F&H PR, Chattanooga
W. M. Martin, PE-FEP, Knoxville
Bob Jones, Yard Superintendent, Kingston Steam Plant
Todd Weatherford, PE-FEP, Knoxville

1.2 The last annual inspection was made May 6, 1987 (B65 870528 001)

1.3 The ash disposal area is shown on the attached print of drawing 10N420.

2.0 Change in Dike Since Last Inspection

2.1 In general dike "C" appears to be stable although the wet area along the berm in the southeastern corner has not abated since the last inspection. Two moist areas were noted along the berm on the north end of this dike, but there was no sign of dike instability in these areas.

2.1.1 The exterior slopes have a good vegetative cover, and the top of the dikes has a good crushed stone surfacing.

2.2 Seepage of redwater still persists along the exterior slope of the southeast dike near its southern end. The majority of the redwater drainage in this area of the disposal area is collected in an interceptor ditch and routed to an engineered wetland for treatment before discharging into the intake channel. At the present time, the discharge to the intake channel has been cut off and is being pumped to the ash pond. The wetland consists of several shallow ponds with cattails and is located as shown on the attached drawing 10W420.

2.3 The divider dike at the stilling pool appears to be stable.

3.0 Change in Pond Operation Since Last Inspection

3.1 The bottom ash continues to be sluiced into a channel at the south end of the initial ash pond. The fly ash is discharged into a rubber-lined ditch parallel to the bottom ash channel. The sluiced water is routed through the plant constructed spillways in the divider dike, into the stilling pool and discharging into the intake channel through five active standard spillway pipes. A dust problem exists along the north end of the fly ash pond. Plant personnel have made plans to raise the water level of the pond to flood the dry area and control the dust.

3.2 Dredge cell No. 1 has been aerial seeded in an attempt to control dust problems. Success appears to be limited, but the continued growth of grass will determine the overall success. Dredge cell No. 2 has been completed and is presently being dredged into by a contractor. The dikes for dredge cell No. 3 are near completion and this cell will be available later this year for future dredging. All dredge cells were constructed of bottom ash by plant personnel.

4.0 Condition of Spillways, Skimmers, and Outlets

4.1 The plant constructed spillways and skimmers, discharging water from the pond area into the stilling pool area, appear to be in good condition, however, some floating ash was observed in the stilling pool.

4.2 There was a considerable amount of floating ash trapped behind the floating skimmer around the standard spillways and skimmers. Due to this build up of ash, there was a noticeable loss of ash into the spillways (see recommendation No. 6.2).

4.3 Five of the six standard spillways and skimmers in the stilling pool area appear to be in good condition and functioning properly. The spillway on the west end has been raised one section higher than the other spillways and is not discharging. Several small limbs and a build up of algae was noticed around the spillways and skimmers which could cause inaccurate discharge readings (see recommendation No. 6.3).

4.4 The outlet area for these spillways has a good rip rap cover, and the concrete head wall appears to be in good condition. There was noticeable loss of ash into the plant intake channel. The plant has a floating skimmer in front of the intake structure to skim off the floating ash lost to the intake channel. (See recommendation No. 6.2).

5.0 Action on Recommendation of Last Inspection

5.1 The dike's slopes have been cleared and were in very good condition. (See recommendation No. 6.1).

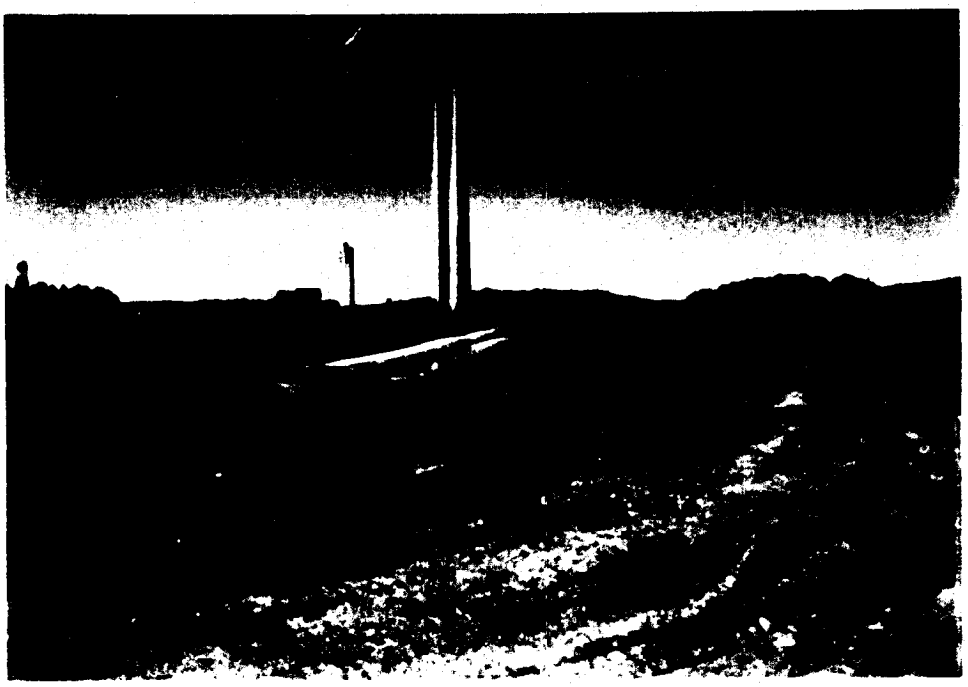
6.0 Recommendations

6.1 All small trees and brush should be removed from the dike's slopes as needed. It is recommended that this undesirable vegetation be removed by chain or cable as to remove the root system from the earth.

6.2 The floating ash within the stilling pool needs to be removed to prevent loss through the spillways.

6.3 All limbs and algae need to be removed from the spillway skimmers.

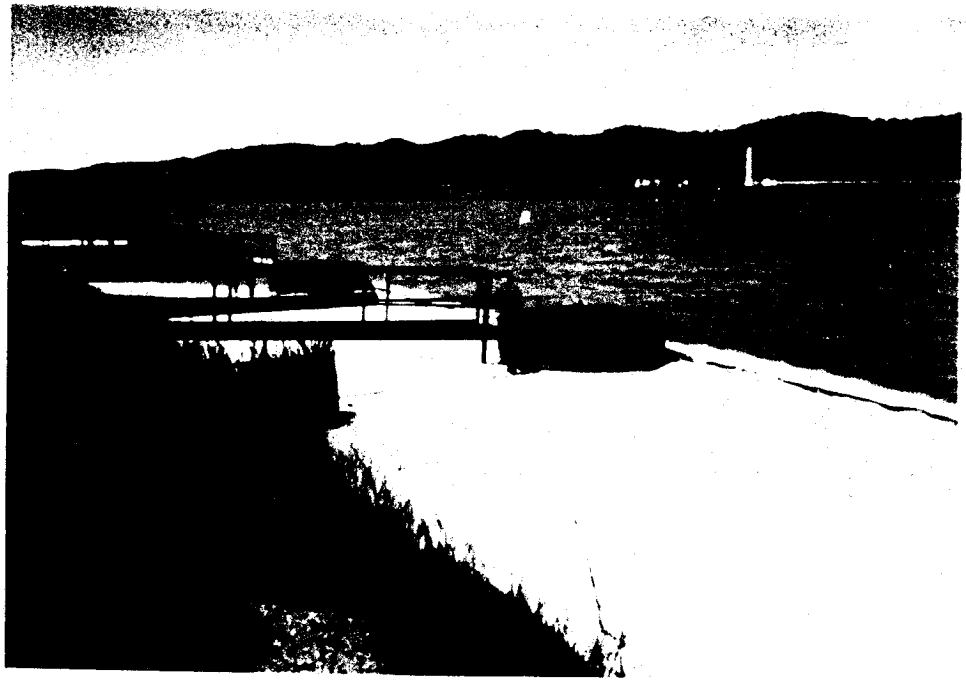
KINGSTON STEAM PLANT
APRIL 1988



(1) REDWATER COLLECTION DITCH.

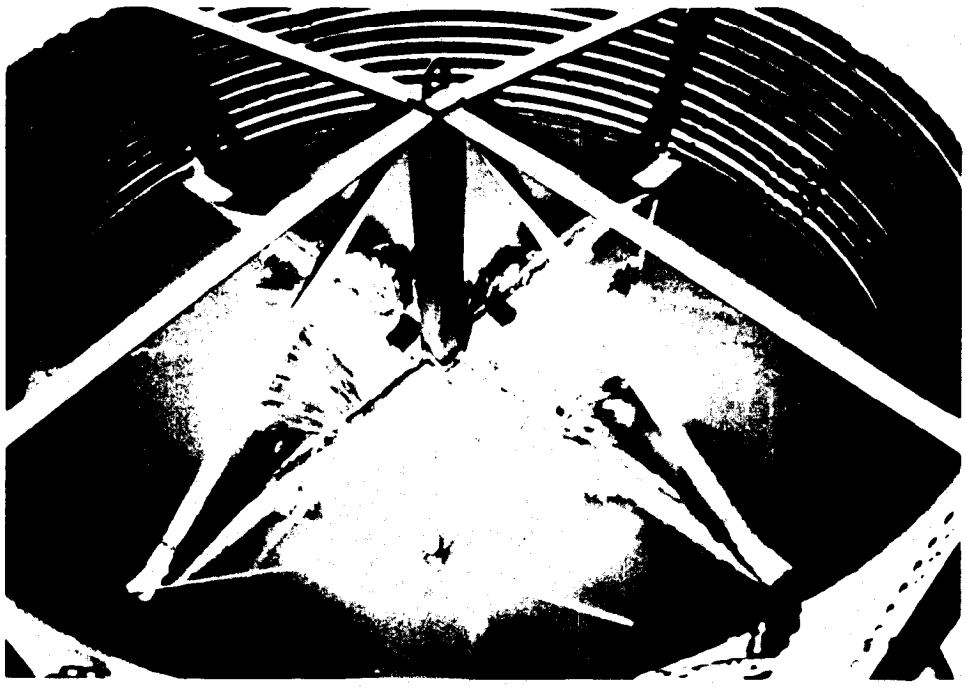
KINGSTON STEAM PLANT
APRIL 1988

3 DISCHARGE TO INTAKE CHANNEL.



4 FLOATING ASH AND SPILLWAY SKIMMERS.

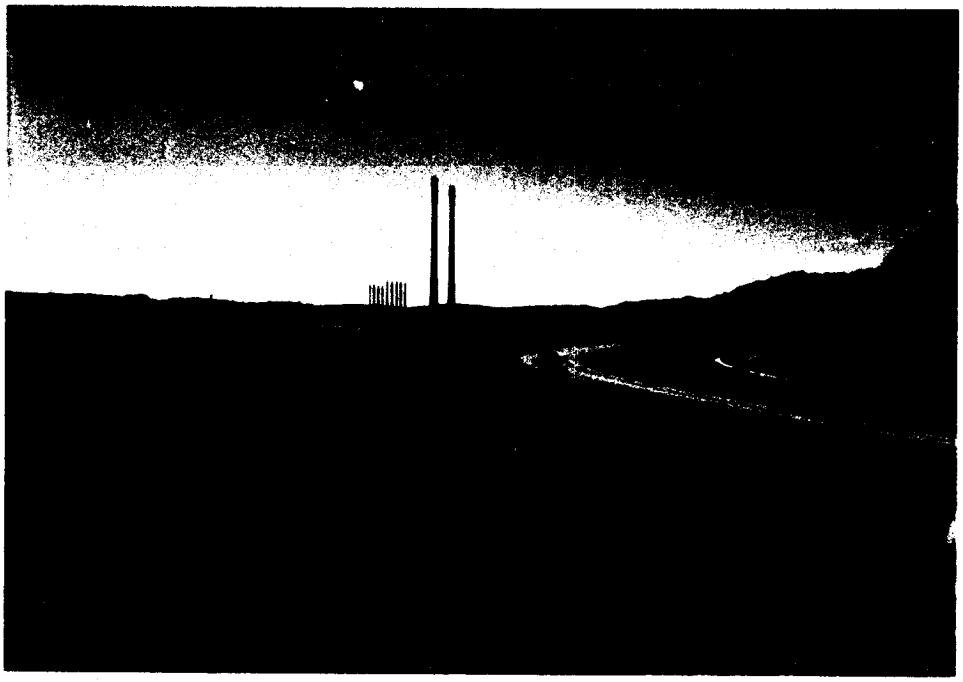
KINGSTON STEAM PLANT
APRIL 1988



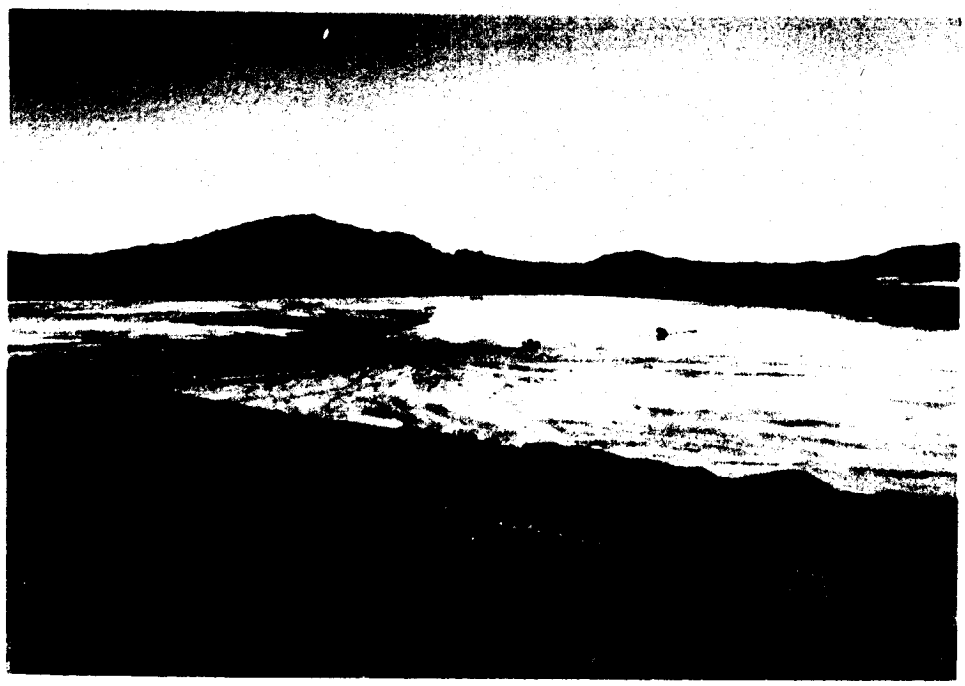
(5) SPILLWAY

(6) SEEPAGE AREA

KINGSTON STEAM PLANT
APRIL 1988



7) GOOD VEGETATION ON EXTERIOR DIKE.



8) DREDGE CELL NO. 2