TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

B65 '87 0604 007

TO : Paul Wade, Director of Fossil and Hydro Power, LP 3S 58K-C

FROM : W. M. Bivens, Manager of Power Engineering, 12-113 SB-K

DATE : JUN 0 4 1987

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

Attached is a report from D. R. Galloway to R. E. Harris dated May 28, 1987 (B65 870528 001), concerning the joint inspections of the Kingston Steam Plant ash disposal areas. This report includes recommendations for corrective work. I concur with these recommendations.

W. M. Bivens

JLG:DRG:HLL
Attachment (5)
cc (Attachment):
RIMS, SL 26 C-K (w/o drawings)
G. Farmer, 12-109 SB-K
J. L. Golden, W3 D224 C-K

This was prepared principally by D. R. Galloway, extension 4359.

S67148.01

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TENNESSEE VALLEY AUTHORITY

OFFICE OF POWER

POWER ENGINEERING
FOSSIL ENGINEERING PROJECT

INSPECTION OF

KINGSTON STEAM PLANT

ASH DISPOSAL AREAS

JOINT PE-F&H PR

INSPECTION

INSPECTED: MAY 6, 1987

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-ASH-87-6
			PLANT/UNIT
VENDOR	CONTRACT NO.	KEY NOUNS	SAR SECTIONS
			UNID SYSTEM(S)

APPLICABLE DESIGN DOCUMENTS / REFERENCES	REV	(FOR RIMS USE)	RIMS ACCESSION NUMBER
	R0		B65 '87 0528 001
	R1		
	R2		
	R3		
	R4		

TENNESSEE VALLEY AUTHORITY

OFFICE OF POWER

FOSSIL ENGINEERING PROJECT

	REVISION 0	R1	R2	R3	R4
DATE	MAY 2 8 1987				
PREPARED	Donald R. Galloway				
CHECKED	WM Martin				
REVIEWED	K. W. Burnett				
	R. E. Harris				
APPROVED	J. L. Goldeen				

cc: RIMS, SL26 C-K

TVA 64 (05-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

B65 '87 0528 001

TO : R. E. Harris, Civil Project Engineer, Fossil Engineering, W2 D220 C-K

FROM : D. R. Galloway, Civil Engineer, Fossil Engineering, W2 D209 C-K

DATE : MAY 28 1987

SUBJECT: KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

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 May 6, 1987, by the following personnel:

D. R. Galloway - PE (FEP)
John Albright - Div. Power, Chattanooga
Ed McClung - Kingston Steam Plant

1.2 Our findings were discussed with Mr. McClung.

1.3 The last annual inspection was made on April 10, 1986 (B65 860520 002).

1.4 The different areas are shown on the attached print of drawing 10N420.

2.0 Change in Dikes 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. The nothern most being identified in previous inspection reports.

2.1.1 The exterior slopes have a good vegetative cover, however, small trees are again sprouting, especially at the north end (see recommendation No. 1). The top of the dikes have a good crushed stone surfacing.

2.2 Seepage of redwater still persists along the exterior slope of the southeast dike near its southern boundary. 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. The wetland consists of several shallow ponds with cattails and is located as shown on the attached drawing 10W420.

S67148.02

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KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

2.3 A dredge pond was constructed by plant personnel within the western portion of the active ash disposal area. The dikes were analyzed for slope stability by FEP as submitted by F&H Power, Chattanooga. Approximately 475,000 cubic yards of ash was dredged by a contractor into the pond before several "water boils" at the dike's toe and "water piping" in one area of the ash dike was noted, thus ending dredging activities in March 1987. Reducing the water head has visibly eliminated this situation and the average final ash freeboard is greater than the recommended four feet. The exterior slopes have been covered with earth and vegetation established, Mr. McClung has done an excellent job in this area.

2.4 The divider dike at the stilling pool appears to be stable. The only change associated with this dike is the installation of a lime feeder system located near the plant constructed spillways.

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 the five active standard spillway pipes.

3.2 As noted in 2.3, the dredging into cell No. 1 has been completed. Future dredge cells 2 and 3 have been analyzed for stability by FEP and are presently being constructed by plant personnel.

4.0 Condition of Spillways, Skimmers, and Outlets

4.1 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. The outlet area for these spillways has a good riprap cover, and the concrete headwall appears to be in good condition. There is no sign of loss of ash into the plant intake channel.

4.2 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.

R. E. Harris

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KINGSTON STEAM PLANT - ANNUAL ASH DISPOSAL AREA INSPECTION

5.0 Action on Recommendations of Last Inspection

5.1 The lower berm had not been mowed.

6.0 Recommendations

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

D. R. Galloway

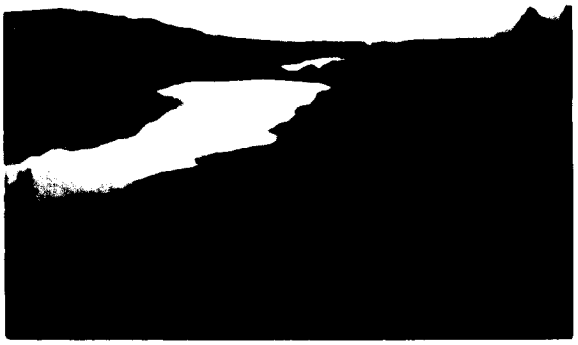
D. R. Galloway

KWB JLG:DRG:HLL
Attachments
cc (Attachments):
RIMS, SL 26 C-K
J. L. Golden, W3 D224 C-K

S67148.02

S67148.02

KINGSTON S. P.
MAY 1987

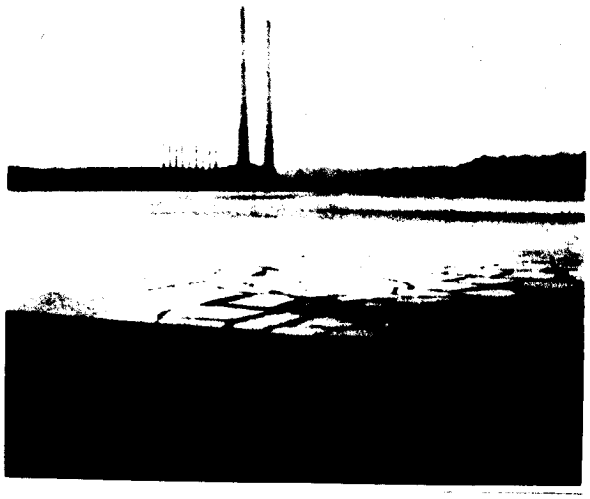


(1) DRAINAGE DITCH INSIDE SOUTHEAST DIKE.

(2) CONSTRUCTED WETLAND AT BASE OF SOUTHEAST DIKE.

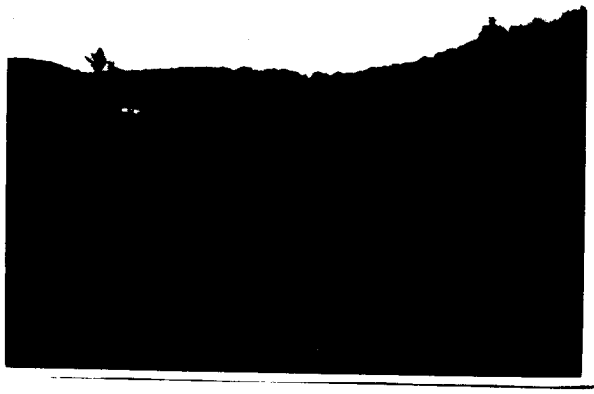
(3) DREDGE CELL CONTAINMENT DIKE.

KINGSTON S. P.
MAY 1987

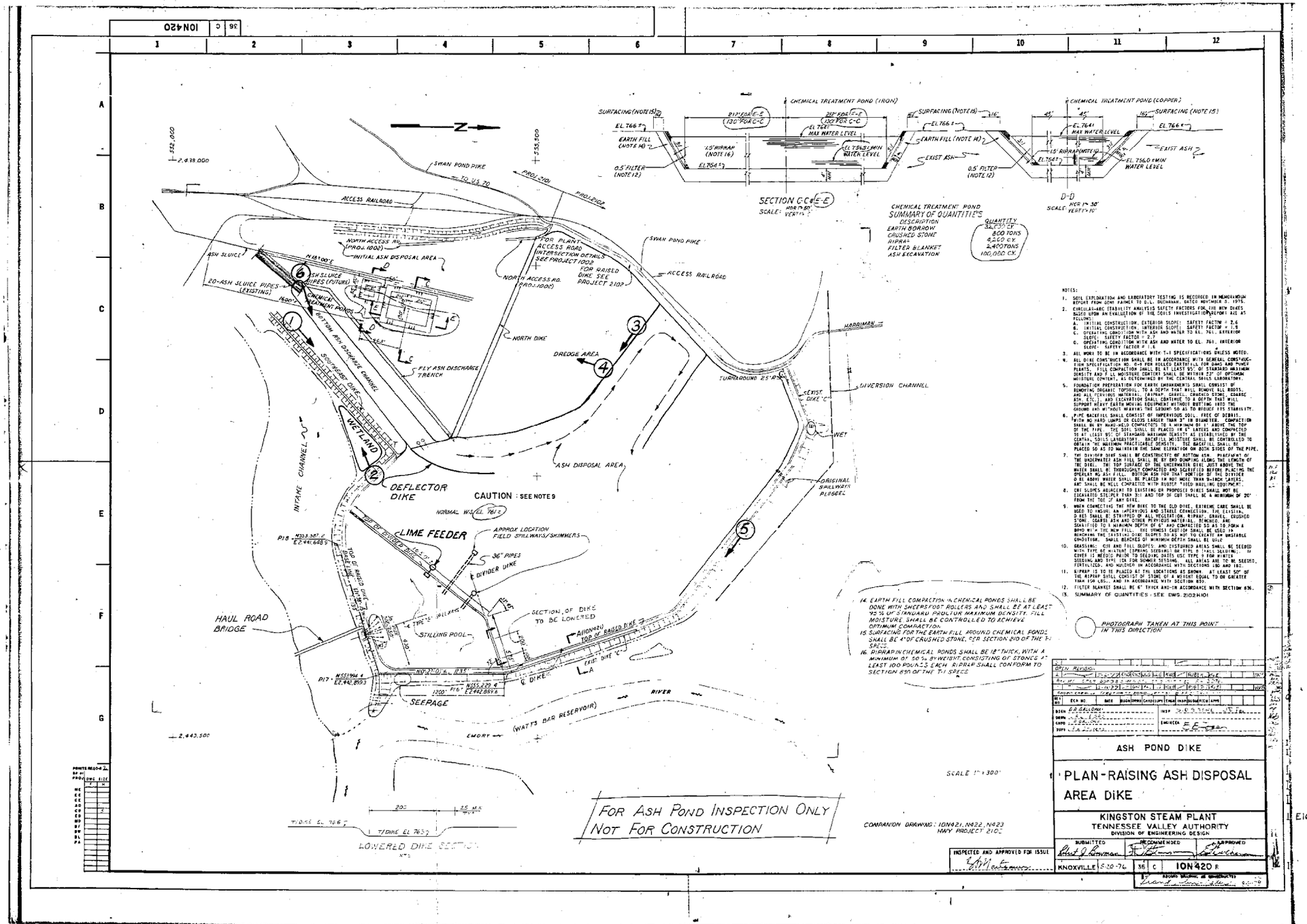


(4) DREDGE CELL.

(5) EXTERIOR SLOPE DIKE "C".



(6) BOTTOM ASH DISCHARGE.



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