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April 2, 1996

L. D. Moody, Cumberland Fossil Plant

CUMBERLAND FOSSIL PLANT (CUF) - INSPECTION OF WASTE DISPOSAL AREAS

Attached is a report from B. K. Elder to K. W. Burnett dated April 1, 1996, concerning the inspection of the CUF waste disposal areas for dike stability.

This report includes recommendations for corrective work. I concur with these recommendations.



Ralph G. Johnson  
Manager, Fossil Engineering  
LP 2G-C

KWB:BKE:SRH

Attachments

cc (Attachments):

J. S. Baugh, LP 5H-C  
RIMS, CST 13B-C

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April 1, 1996

K. W. Burnett, LP 2G - C

## **CUMBERLAND FOSSIL PLANT - INSPECTION OF THE WASTE DISPOSAL AREAS**

### INTRODUCTION

The waste disposal areas at Cumberland Fossil Plant were inspected for dike structural stability on February 22, 1996. Jim Huber of TVA Fossil Fuels and Keith Elder of TVA Fossil Engineering performed the inspection. The previous inspection was performed on March 15, 1995.

The results of the annual stability inspection are listed below according to location within the ash disposal area.

### WET GYPSUM STACKING AREA

Scrubber sludge (wet gypsum) stacking was continuing in this area as it is converted from a dredge pond area to a gypsum stacking facility (See attached site map). Dredging was completed in the dredge cell in the southern portion of this region and the base for the gypsum stack was being constructed using geotextiles and crushed stone. Dredging was also completed in the western dredge cell. The separator dike between this area and Area No. 2 was complete, but was breached in the southwest corner of the area to allow the runoff water from the scrubber sludge sluice to be discharged into Area No. 2.

The exterior dike slopes in this area were in good condition with good vegetative cover. No changes in the slope surface were noted from the previous inspection. Water was standing in the ditch between the exterior dike and the inner gypsum stack dike on the south side of the area due to a clogged culvert in the southwest corner. The access road along the top of the dike in this area was in poor condition (several areas of rutting) due to construction activities on the interior of the dike. Crushed stone was being placed on the roadway to maintain accessibility.

Water is no longer discharging from the dredge cell pipes in this area. This water was causing erosion potential along the interior slope of the outer dike during the previous inspection, but this is no longer a concern.

### AREA NO. 2

This area contains the active ash pond and the stilling pool for the sluiced ash discharge. The eastern portion of this area is being prepared for a future dry fly ash stack scheduled to begin in June 1996. The western portion will remain as a detention pond for bottom ash discharge water and storm water runoff. Sluiced fly ash was being discharged into a ditch in the northeast corner of this area and then

followed a ditch southward before running into the existing detention pond on the south side. Bottom ash sluice was being discharged just west of the fly ash sluice discharge. After settling out, the bottom ash was being collected and used as a base for the future fly ash stack. The sluice water from the bottom ash was being discharged into a newly constructed ditch on the northern side of this area. The water traveled through an aerating device before flowing into the detention pond. Water traveled from the retention pond to the stilling pool in the northwestern corner of the area before discharging through four standard spillway structures into the discharge channel of the plant.

The exterior dikes in this area were stable and did not exhibit any notable change from the previous inspection. Vegetative cover was present on all exterior slopes. Areas of seepage were noted along the bank of Wells Creek near the construction bridge. This region has a history of minor seepage and is continually monitored by plant personnel. The magnitude of the seepage did not appear to be any greater than in the previous stability inspection. The seeps did not appear to jeopardize the stability of the dike.

The damaged areas along the detention pond/stilling pond divider dike that were noted during the last inspection had been repaired with riprap. The animal burrow that was found on the south slope during the previous inspection had also been repaired.

#### CHEMICAL TREATMENT POND

This pond is located north of the wet gypsum stacking area. It was constructed by excavating into existing earth, so no exterior slopes are present. The interior slopes are lined with a cover of riprap.

The interior slopes of the pond were in excellent condition. The riprap cover was continuous and appeared stable. No change from the previous inspection was noted.

#### COAL YARD DRAINAGE BASIN

This pond is also located north of the wet gypsum stacking area and is adjacent to the chemical treatment pond. It also has no exterior side slopes. Water is pumped from this pond west to the detention pond.

The interior slopes were stable with the exception of one area on the south side of the pond near the pump station. An area approximately 5 feet in width was sluffing into the pond. This does not present a structural problem for the pond, but if it is not corrected the access roadway beside the pond will be encroached upon.

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CUMBERLAND FOSSIL PLANT  
NPDES PERMIT NO. TN0005789  
ANNUAL ASH POND DIKE INSPECTION  
1996

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. See 18 U.S.C. Section 1001 and 33 U.S.C. Section 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)*

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AGENT

## ACTIONS SINCE LAST INSPECTION

The areas of sluffing that were noted on the divider dike between the active ash pond and the stilling pool had been repaired by placing riprap in the damaged areas. The slope appeared stable with no new damaged areas.

The animal burrow on the exterior slope of the south dike in Area No. 2 had been repaired. No new areas of burrowing were found.

## RECOMMENDATIONS

Remove the small growth of trees on the interior dike slope above the discharge pipes in the stilling pool. The root systems could grow and penetrate the pipes or pipe joints in the future. The trees should be removed by pulling the entire tree and its root system from the ground.

Continue to repair the damaged areas of the access roadway around the wet gypsum stacking area. At least 4 inches of crushed stone should be added to the base of the road in any areas that are exhibiting rutting and potholes.

Repair the interior slope of the coal yard drainage near the pumps that is sluffing. The damaged area should be filled with earth and compacted until the slope is uniform again. Any areas with bare earth on them should then be seeded and mulched.

Continue to monitor the seeps along the bank of Wells Creek near the construction bridge. Please report any material movement or increase in seepage to Fossil Engineering immediately.