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April 17, 1998

L. D. Moody, CUF 1A-CCT

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

The subject inspection was completed by representatives of Fossil Engineering, Fossil Fuels, and plant personnel. The observations from the inspection and recommendations for corrective work are in the attached report.

If you have any questions or need assistance, please contact Keith Elder at Chattanooga extension 6370.



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Attachment

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TENNESSEE VALLEY AUTHORITY
CUMBERLAND FOSSIL PLANT

*ANNUAL INSPECTION OF
WASTE DISPOSAL AREAS*

Prepared by: Keith Elder
Date: April 17, 1998

**CUMBERLAND FOSSIL PLANT
NPDES PERMIT NO. TN0005789
ANNUAL ASH POND DIKE INSPECTION
1998**

INTRODUCTION

The waste disposal areas at Cumberland Fossil Plant were inspected for dike structural stability on March 26, 1998. The inspection was performed by Keith Elder of TVA Fossil Engineering. He was accompanied by Jim Huber of TVA Fossil Fuels and Joe Adams of Cumberland Fossil Plant Yard Operations. The previous annual inspection was performed on February 27, 1997.

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

WET GYPSUM STACKING AREA

Wet gypsum sluice and stack operations were proceeding as normal in this area. The scrubber by-product was being sluiced into the northeast corner of this area. Sluice water was being directed throughout stack area by way of constructed ditches and discharged from the southwest corner of the area into a channel which leads to the active ash pond. Gypsum covered the entire area, and was highest in the northeast corner.

The earth starter dike between the gypsum stack and the exterior dike was in good condition with continuous vegetative cover. No signs of erosion were present on the slope. There was no indication of boils in the ditch between the starter dike and the gypsum slope that had occurred approximately 1 month before last year's inspection. Plant personnel indicated that the water head behind the gypsum dike is being limited and that there have been no signs of boils since last year.

A new area of seepage was detected on the outer slope of the lower dike along the northeastern side of this area. The seep stretches approximately 75 feet along the dike and varies in width up to about 10 feet. No material movement was present, and the seep does not appear to pose a threat to the structural integrity of the dike at this time. Two more minor seeps (less than 4' diameter) were noted on the south dike, but these also pose no threat to dike integrity at present. Three animal burrows were noted in the toe of the northeast dike. One was active and two were inactive. Plant personnel were doing a fine job of removing trees along the south dike by pulling them and their roots from the ground. Some small disturbed areas were present due to this operation. The exterior slopes had excellent vegetative cover in all other areas around the exterior of the gypsum stacking area.

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ACTIVE ASH POND AND DRY FLY ASH STACKING AREA

The active ash pond, dry fly ash stacking area, and bottom ash collection area are all located in this area to the west of the wet gypsum stack. Dry fly ash was being spread over the central portion of the area. Bottom ash was being sluiced to and was dropping out in the northeast corner of the region. The water from the bottom ash sluicing operation was being discharged to a ditch that ran west along the inside of the northern dike and emptied into the active ash pond through a breach in the west dike of this area. Water from the gypsum operation was flowing along a ditch inside of the southern dike and was also emptying into the active ash pond through the west dike breach.

The exterior dike slopes along this portion of the ash disposal area were in good condition. Vegetation covered the slopes and no erosion was evident. Small trees were growing along the slopes, but plant personnel were working to remove them. An animal burrow was found along the west dike. Bank erosion was noted along Wells Creek in a number of areas west of the construction bridge.

The previously identified areas of seepage near the construction bridge over Wells Creek were still present. The seeps appeared to have the same intensity as noted last year. A visible flow of water was noted coming from the seep directly under the bridge. Plant personnel were planning on lowering the water elevation in the pond from the present elevation of 384 ft to 380 ft to relieve some of the hydrostatic pressure over this area. This will have a positive effect on decreasing the seeps.

The interior slopes of this area were in good condition with excellent vegetative cover. A small patch of trees were growing on the interior slope of the stilling pool dike above the discharge pipes. The root systems of these trees could eventually cause damage to the pipe joints.

Both the divider dike separating the active pond from the stilling pool and the divider dike separating the active pond from the dry fly ash stacking area were in good condition. No areas of erosion or slips were noted.

The spillways and outlet pipes in the stilling pond were in excellent operating condition.

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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.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AGENT

TVA USE ONLY

OTHER AREAS INSPECTED, ACTIONS ON PREVIOUS RECOMMENDATIONS, AND RECOMMENDATIONS FOR CORRECTIVE ACTION

CHEMICAL TREATMENT POND

This pond is located north of the wet gypsum stacking area. Discharge from this pond is pumped to the active ash pond. The southern and eastern borders of this area are formed by a slope that was excavated into existing ground. The northern and western borders are formed by a dike that separates this pond from the coal yard stilling basin.

The interior slopes had a good cover of riprap and were in stable condition. No change was noted in the slopes of this pond from the previous inspection.

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.

All slopes in this pond had good vegetative cover and had no signs of erosion. The area of erosion along the south slope had vegetative cover and had not changed since last year.

ACTIONS SINCE LAST INSPECTION

The small trees on the exterior dike slopes were being removed by plant personnel by pulling them and their root systems from the ground.

The animal burrows that were found in the previous inspection had been repaired. An animal trapper had been hired and had relocated the burrowing animals to help prevent future problems.

RECOMMENDATIONS

- Monitor the newly detected seeps along the eastern lower dike of the wet gypsum stacking area. Check for signs of material movement and increased seepage. Please notify Fossil Engineering if any significant changes are noticed.
- Repair the four animal burrows shown on sketch API98. These areas should be filled with clay material, tamped, and seeded. An animal trapper should be retained to capture the animal that is using the active burrow.

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- Lower the water level of the active pond and stilling pool by removing 4 feet from each of the four standard spillway structures. The water level in the ditch around the dry stack area should next be lowered by excavating the breach in the dike that divides the dry stack from the active pond to elevation 380 ft ±. This will reduce the hydrostatic head on the exterior dike that parallels Wells Creek and increase its stability.
- Continue to remove the trees growing on the slopes of the dikes. Seed and mulch any disturbed areas.
- Monitor the seeps along the bank of Wells Creek in the vicinity of the construction bridge. Please report any changes to Fossil Engineering.
- Monitor the bank erosion along Wells Creek. Please notify Fossil Engineering if the top of bank begins to encroach on the slope of the dike.
- Remove the trees on the interior slope of the stilling pond above the discharge pipes.



Figure 1. Seep area along eastern dike.



Figure 2. Seeps along bank of Wells Creek as seen from bridge.



Figure 3. Southwestern dike in good condition with excellent vegetative cover.

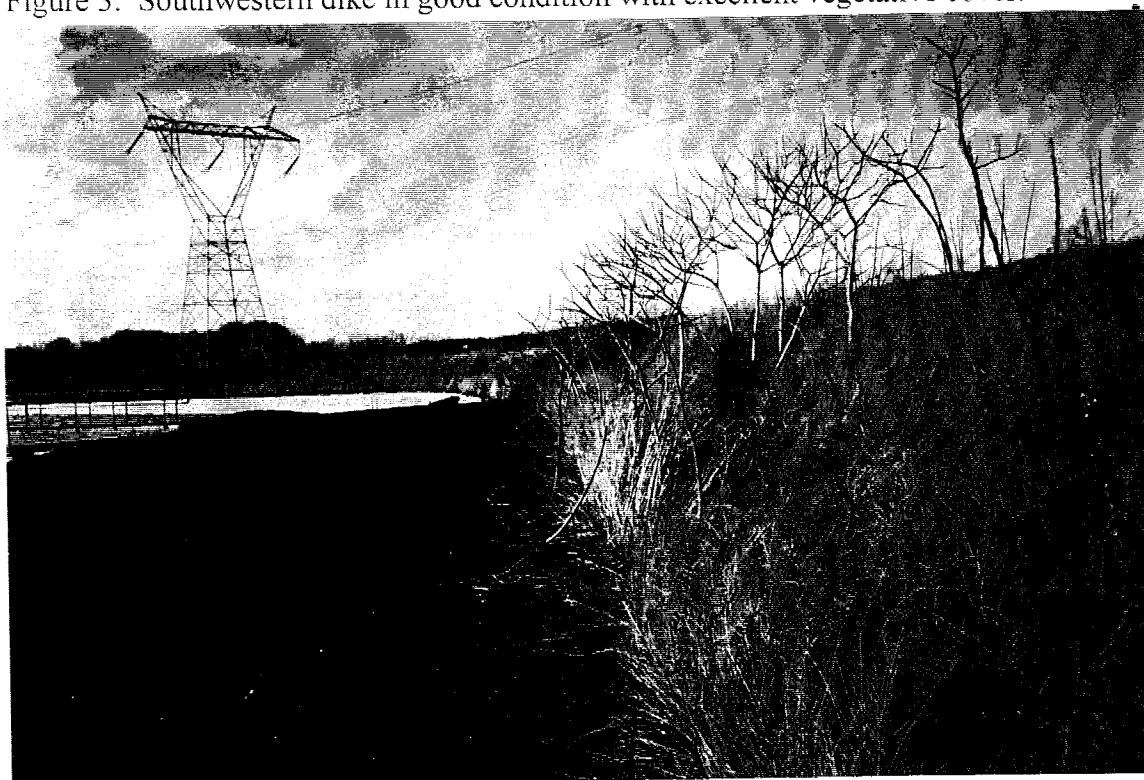


Figure 4. Interior dike of stilling pond. Note growth of small trees above the discharge pipes.