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March 28, 1995

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 March 28, 1995,
concerning the inspection of CUF waste disposal areas.

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



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

KWB:BKE:KDG

Attachment

cc (Attachment):

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

cufwda.mem

March 28, 1995

K. W. Burnett, LP 2G - C

CUMBERLAND FOSSIL PLANT - INSPECTION OF THE WASTE DISPOSAL AREAS

1.0 General

- 1.1 This inspection of the waste disposal areas was conducted on March 15, 1995.
- 1.2 The last inspection was conducted on June 8, 1994.
- 1.3 This was a joint inspection by representatives of Fossil Fuels and Fossil Engineering (FE). The inspection was performed by Jim Huber, Fossil Fuels; Jerry Glover, FE; and Keith Elder, FE.
- 1.4 Our findings during this inspection were not discussed with plant personnel the day of the inspection due to completion late in the day. Jim Huber discussed our observations and recommendations with Jeff Cummings, Yard Operations Supervisor, and Gene Leslie, Heavy Equipment Foreman, the following day (March 16).
- 1.5 The areas referenced in the report are shown on the attached print of drawing 10N212.

2.0 Wet Gypsum Stacking Area (Formerly Area No. 1)

The old dredge pond in this area has been covered by a scrubber sludge (wet gypsum) storage area. Starter dikes have been constructed around a portion of the area and rim ditch stacking of the gypsum has begun. A starter dike has been constructed in eastern portion of area no. 2 which will define the western boundary for the wet gypsum stack. Two dredge cells have been constructed in the southern and western portions of this area.

2.1 Changes in the Dikes Since Last Inspection

- 2.1.1 The exterior dike was in excellent condition. No visible signs of instability were noted. A few areas contained growth of small trees and rose bush. (See recommendation 6.1)
- 2.1.2 The access roads along the top of the exterior dike are in fair condition with sporadic areas of rutting. (See recommendation 6.2)

2.1.3 Two discharge pipes in the southwestern portion of this area are creating potential problems for the exterior dike. One pipe is discharging water from the dredge cell in the southern portion of the area into the perimeter ditch between the gypsum starter dike and the exterior dike. The other pipe is approximately 100 feet west of this pipe and is discharging into area no. 2. Discharge from both pipes is eroding the interior slope of the exterior dike. (See recommendation 6.3)

2.2 Changes in Operations Since Last Inspection

2.2.1 The old dredge pond in the northern portion of this area has been covered with a crushed stone/geotextile liner and rim ditch stacking of wet gypsum has begun in this area.

2.2.2 The southern and western portions of this area are being used as dredge cells. Material was being dredged from the active ash pond (area no. 2) to the cell in the western portion at the time of inspection. When the dredge material reaches the elevation of the old dredge cell, then these areas will also be covered by the wet gypsum stacking area.

3.0 Area No. 2

The dikes in this area have a greater water head behind them than the dikes in the wet gypsum stacking area due to the presence of the active ash disposal pond in this section. Both bottom ash and fly ash are sluiced into the active pond where the water remains until it enters the stilling pool in the northwest corner of the area via a flow through skimmer. Water discharges from four spillways into the discharge channel of the plant. There is a history of minor seepage along the western portion of the exterior dike near the construction haul bridge over Wells Creek.

3.1 Changes in the Dikes Since Last Inspection

3.1.1 The eastern boundary of this area is now defined by a starter dike which was constructed for the wet gypsum area. The dike is just east of the 161 kV transmission lines and parallels them.

3.1.2 The divider dike between the active ash disposal pond and the stilling pool has an excellent cover of riprap, but three separate areas on the stilling pool side of the dike were sluffing into the water. These areas could grow in size and cause structural problems in the dike later. (See recommendation 6.4)

3.1.3 Several small trees and patches of rose bush were present on the outer slope of the exterior dike. A small patch of trees was also noted on the inside of the dike in the southern portion of this area. (See

recommendation 6.1) Otherwise, the slopes of the dike had excellent vegetative cover.

- 3.1.4 An animal burrow was found on the south exterior dike. It was approximately 1 foot in diameter and 3 feet deep and was located approximately 30 feet west of the piezometer tube on the south dike just above the elevation 380 berm. (See recommendation 6.5)
- 3.1.5 Areas of seepage were noted along the bank of the Wells Creek channel in the vicinity of the construction access bridge. The seepage appeared to be greater than in recent observations and extended approximately 50 feet upstream (east) of the bridge and 100 to 150 feet downstream of it. The increased seepage was probably due to the temporarily increased water level in the ash pond (See recommendation 6.6) There were no signs of dike structural instability in this area.
- 3.1.6 A divider dike is being constructed approximately 400 feet southeast of the stilling pool/ash pond divider dike. This dike will parallel the stilling pool divider dike and will intersect the exterior dike on the north and south side of the area. The new dike will separate the proposed dry stacking area from the proposed retention pond.

3.2 Changes in Operations Since Last Inspection

- 3.2.1 In June 1994, the pond level was raised to elevation 384 to maintain the required free water volume while construction operations are ongoing in the eastern portion of the pond. Once construction of the future dry stacking area is completed, the pond level will be decreased to elevation 378.
- 3.2.2 The bottom ash and fly ash sluicing operations continue as before. Material is being dredged from the active pond into the dredge cell in the west portion of the wet gypsum stacking area, and the water from this cell was being discharged back into the southeast corner of area no. 2 via a breach in the divider dike between the two.

3.3 Condition of Spillways, Skimmers, and Outlets

- 3.3.1 All four spillways were functioning and appeared in excellent condition.

3.3.2 The skimmer between the active ash pond and the stilling pool was in good condition. A small, insignificant amount of cenospores were noted on the surface.

3.3.3 The spillway outlets were in good condition. The trees on the slope above the outlet pipes noted in the last inspection have been removed.

4.0 Chemical Treatment Pond

4.1 The pond (located on the north side of the exterior dike) appeared in good condition. The riprap cover on the interior slopes was excellent. The pond was excavated into the surrounding earth, so no exterior slopes are present.

4.2 No debris or other impediments were noted. No maintenance was required at the time of inspection.

5.0 Coal Yard Drainage Basin

5.1 Operation of the coal yard drainage basin appeared normal. The basin is also excavation constructed, so no external dike slopes are present. The interior slopes had good vegetative cover.

6.0 Recommendations

6.1 Remove the small trees and rose bush from the exterior dike slopes (Reference 2.1.1 and 3.1.3) above the berm (top of original dike) at elevation 380 ft. They should be pulled out so as to remove their root systems.

6.2 Cover the rutted areas in the dike road with a layer of at least 4" of crushed stone. (Reference 2.1.2)

6.3 Riprap the areas around the discharge pipes in the southwest corner of the wet gypsum stacking area (Reference 2.1.3).

6.4 Repair the three sluffed areas on the stilling pool side of the divider dike (Reference 3.1.2). Riprap should be placed in the sluffed areas with a back hoe or equivalent device until the slope is again continuous.

6.5 Repair the animal burrow on the south exterior dike. Fill it with earth and compact it (Reference 3.1.4).

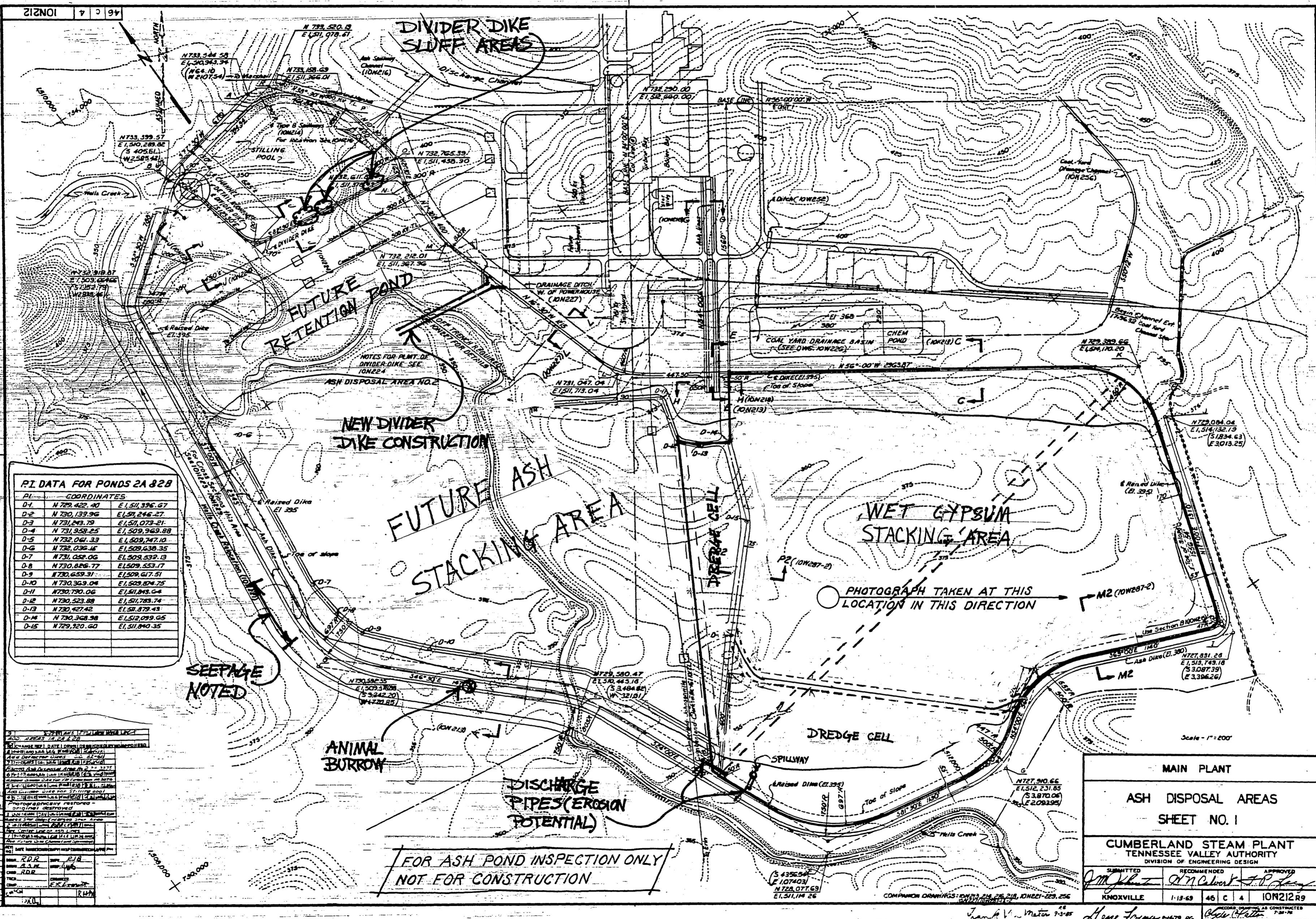
K. W. Burnett
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- 6.6 Continue to carefully monitor the seepage along the banks of Wells Creek. If seepage increases or problems are noted, please notify Site and Environmental Engineering immediately.



B. Keith Elder
Civil Engineer, Site and Environmental Engineering
LP 2G - C

BKE:bke



PI	COORDINATES
D-1	N 729,422.40 E 1,511,396.67
D-2	N 730,139.96 E 1,509,246.27
D-3	N 731,243.79 E 1,501,073.21
D-4	N 731,958.25 E 1,509,969.88
D-5	N 732,061.33 E 1,509,747.10
D-6	N 732,036.15 E 1,509,636.35
D-7	N 731,052.06 E 1,509,639.13
D-8	N 730,826.77 E 1,509,653.17
D-9	N 730,659.31 E 1,509,617.51
D-10	N 730,369.04 E 1,509,874.75
D-11	N 730,790.06 E 1,511,893.64
D-12	N 730,523.88 E 1,511,783.74
D-13	N 730,427.42 E 1,511,879.43
D-14	N 730,368.98 E 1,512,019.65
D-15	N 729,320.60 E 1,511,840.35

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FOR ASH POND INSPECTION ONLY
NOT FOR CONSTRUCTION

Scale - 1"=200'

MAIN PLANT

ASH DISPOSAL AREAS

SHEET NO. 1

CUMBERLAND STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
KNOXVILLE	1-13-69	46 C 4 ION212 R9

RECORDS DIVISION AS CONSTRUCTED

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