



TVA Disposal Facility Assessment Phase 1 Plant Summary Allen Fossil Plant (ALF)

Location:	Allen Fossil Plant (ALF) 2574 Plant Road Memphis, Shelby County, TN 38109
	Latitude: 35.074 N Longitude: 90.149 W
Plant Contact:	Frank Dominioni System Engineer – Fossil Power Group Phone: (901) 789-8400 Email: FEDominioni@TVA.gov
Facts and Figures:	The Allen Fossil Plant has three coal-fired generating units and 20 combustion turbines. The plant construction began in 1956 and was completed in 1959. The plant consumes approximately 7,200 tons of coal per day and generates approximately 4.9-billion kilowatt-hours of electricity annually. The winter net dependable generating capacity is about 753 megawatts. It is located about 10 miles southwest of downtown Memphis, Tennessee just south of Lake McKellar which is directly connected to the Mississippi River.
Coal Combustion Byproduct Disposal:	Approximately 85,000 dry tons of fly ash is wet-sluciced to the East Ash Pond every year. The fly ash is then dredged, dewatered and transported to an off-site structural fill project. Approximately 110,000 dry tons of boiler slag is wet-sluciced to the East Ash Pond every year. Approximately 90% of the boiler slag is reclaimed and marketed to outside companies.



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Geology and Seismicity: The Allen Fossil Plant is located in the extreme southwestern corner of Tennessee just west of the city of Memphis. The plant is situated on the south shore of Lake McKellar and the eastern bank of the Mississippi River. Geologic mapping shows the site to be underlain by artificial fills and Quaternary age alluvial deposits. The fill is noted to generally consist of alluvium dredged from the flood plain (or loess in select locations) and range in thickness from a few feet beneath residential areas to tens of feet beneath industrial areas in the floodplain of the river. The alluvial materials are described as consisting of irregular lenses of fine sand, silt, and clay in the upper part, and of coarse sands, gravelly sands, and sandy gravels in the lower part. The alluvium varies from about 45 to 90 feet in thickness adjacent to the loess bluffs along the eastern edge of the quadrangle to as much as 175 feet well out in the flood plain. The mapping indicates the alluvium is underlain by the series of highly consolidated clays and dense sands comprising the Claiborne Group.

Evaluations of seismic hazards affecting western Tennessee, and thus the plant site, are dominated by events emanating from the New Madrid Seismic Zone (NMSZ) of the central Mississippi Valley. The NMSZ is the most active seismic zone east of the Rocky Mountains and the continuing seismicity of the zone is thought to be associated with the reactivation of faults within the Reelfoot Rift System. Although the majority of the events emanating from this zone are too small to be felt at the surface, this zone produced a series of four earthquakes between December 1811 and early February 1812 each exhibiting estimated magnitudes on the order of 7.0 to 8.0. The "Geologic Hazards Map of Tennessee – Environmental Geology Series No. 5" developed and published by the Tennessee Department of Environment and Conservation (TDEC), Division of Geology and compiled by Robert Miller (1978) shows the plant to be located in Seismic Risk Zone 3.

Facilities Reviewed: East Ash Pond and Dredge Cell
East Ash Stilling Pond
West Ash Pond



TVA Disposal Facility Assessment
Phase 1 Coal Combustion Product Disposal
Facility Summary
Allen Fossil Plant (ALF)
East Ash Pond and Dredge Cell (EAP and EDC)

1. General Facility Information

Facility Status:	Active	NID Identification:	TN15801
Surface Area (inside dikes):	70 Acres	Maximum Height (toe to top of dike):	20 feet
Free Water Volume:	Unknown	Maximum Water Storage:	140 Acre-feet
Estimated CCB Storage:	Varies	Dike Length:	1000 feet
Plant Discharge to Facility:	9.8 MGD	Current Pool Elevation:	231 feet

2. Site Visit Information

Stantec Assessment Team:	Rob Kirkbride, PE
TVA Staff Present:	Frank Dominiononi
Field Assessment Dates:	February 17, 2009
Weather/Site Conditions:	40 degrees F, cloudy, drizzle, moist ground

3. History/Description of Usage

History and Operation: This facility was originally commissioned in 1967 and expanded in 1978. Approximately 85,000 dry tons of fly ash is wet sluiced to the East Ash Pond annually. The fly ash is dredged, dewatered and transported to an off-site structural fill project. Approximately 110,000 dry tons of boiler slag is wet sluiced to the pond annually. Approximately 90% of the boiler slag is reclaimed and marketed to outside companies. Decant water is transferred into the Ash Stilling Pond through the concrete spillway structure in the southeast corner of the pond.

Past Failures/Releases: No failures or releases reported.



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East Ash Pond and Dredge Cell (EAP and EDC)**

4. Owner's Operations, Maintenance and Inspection Information

Emergency Action Plan:	No EAP has been prepared for this facility.
Operations Manual:	TVA maintains a By Products Operation Manual for the Allen Fossil Plant.
TVA Maintenance:	Exterior slopes are mowed as necessary to keep vegetation minimized.
TVA Inspections:	TVA Engineering performs dike inspections and prepares reports annually. Plant personnel make observations throughout the year on a random basis.
Problems Previously Identified During Past TVA Inspections:	Some erosion problems at the discharge end of the primary spillway structures that discharge into McKellar Lake.

5. Documents Reviewed

See attached Document Log for complete list of documents provided by TVA for review. In particular, the following provided pertinent information for the assessment of this facility:

TVA Design Drawings:	10N226 R2, 10W208-1 R0, 10W208-2 R0, 10W208-3 R0, 10W214-3 R0, 10W225 R6, 10W234-1 R0, 10W234-2 R0.
TVA As-Built Drawings:	No drawings identified as As-Built.
TVA Construction Testing Records:	None available.
TVA Annual Inspection Reports:	TVA annual inspection reports from 1967 to 2008.
Geotechnical Data:	Limited data includes lab results, but difficult to tell specific locations of soil boring. (File: ALF MEMO TO GLBUCHANAN FROM GENE FARMER ON ALF ASH DISPOSAL AREA DIKES - SOIL INVESTIGATION.pdf)



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East Ash Pond and Dredge Cell (EAP and EDC)**

6. Stantec Field Observations

See attached Concerns/Photo Log, Photos, and Site Plan Drawing.

6.1. Interior Slopes

Vegetation:	North - Dense phragmites. East - Dense phragmites. West - Dense phragmites. South - Dense phragmites; Portion where dredging operations have removed all vegetation.
Trees:	None observed.
Wave Wash Protection:	None observed.
Erosion:	Difficult to observe. Numerous minor erosion channels.
Instabilities:	Difficult to observe.
Animal Burrows:	Difficult to observe.
Freeboard:	Measured: 6 feet Design: Unknown
Encroachments:	East dredge cell in west portion.
Slope:	Measured: 2H:1V to 3H:1V Design: 2H:1V to 3H:1V

6.2. Crest

Crest Cover and Slope:	North - Gravel. Relatively level. South - Paved road and grass covered. Relatively level. East (divider dike) - Boiler slag with some vegetation. Relatively level. West - Boiler slag with some vegetation. Relatively level.
Erosion:	Minor erosion observed.
Alignment:	Appears uniform.
Settlement/Cracking:	Very little. Some minor (less than 2 inch) low spots.



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Bare Spots/Rutting:	North - Some minor rutting in gravel. South - Paved road and grass covered with some rutting. East (divider dike) - Mostly bare with rutting. West - Mostly bare.				
Width:	<table border="0"> <tr> <td style="vertical-align: top;">Measured:</td> <td> North - 30 to 40 feet South - 100 feet + East (divider dike) - 22 to 25 feet West - 50 feet + </td> </tr> <tr> <td style="vertical-align: top;">Design:</td> <td> North - Unknown (USCOE Levee) South - Unknown (USCOE Levee) East (divider dike) - 16 feet West - Unknown </td> </tr> </table>	Measured:	North - 30 to 40 feet South - 100 feet + East (divider dike) - 22 to 25 feet West - 50 feet +	Design:	North - Unknown (USCOE Levee) South - Unknown (USCOE Levee) East (divider dike) - 16 feet West - Unknown
Measured:	North - 30 to 40 feet South - 100 feet + East (divider dike) - 22 to 25 feet West - 50 feet +				
Design:	North - Unknown (USCOE Levee) South - Unknown (USCOE Levee) East (divider dike) - 16 feet West - Unknown				

6.3. Exterior Slopes

Vegetation:	North - Good grass cover South - Good grass cover East (divider dike) - Mostly phragmites West - Mostly phragmites
Trees:	North - Trees at the toe South - None East (divider dike) - None West - None
Erosion:	No significant erosion observed.
Instabilities:	None observed.
Uniform Appearance:	Yes.
Seepage:	None observed.
Benches:	None.
Foundations, Drains, Relief Wells, Instrumentation:	None observed
Animal Burrows:	None observed.



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East Ash Pond and Dredge Cell (EAP and EDC)

Slope:	Measured: North - 4H:1V South - 4H:1V East (divider dike) - 2H:1V West - varies due to dredge cell Design: North - Unknown (USACE Levee) South - Unknown (USACE Levee) East (divider dike) - 2H:1V West - Unknown
Height:	Measured: North - 20 feet South - 20 feet East (divider dike) - Could not be observed. West - varies due to dredge cell Design: North - Unknown (USACE Levee) South - Unknown (USACE Levee) East (divider dike) - Unknown West - Unknown

6.4. Spillway Weirs/Riser Inlets

Number:	1
Size, Type and Material:	Concrete outlet structure that transfers flow from the ash pond to the stilling pond. Flow is controlled using stop logs. The pool level was approximately 2 to 3 feet below the top of the stop logs.
Height of Riser Inlets:	Unknown.
Access:	Accessible from divider berm.
Joints:	Concrete joints have some deterioration. Could not evaluate stop logs because pool levels on both sides were equal.
Mis-Alignment:	None observed
Closed/Abandoned Conduits:	None known.



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6.5. Outlet Pipes

Number:	N/A - Concrete spillway structure, see info above.
Size, Type and Material:	N/A
Headwall:	N/A
Joint Separations:	N/A
Mis-Alignment:	N/A
Closed/Abandoned Conduits:	N/A

7. Notable Observations and Concerns

- There is an active 30-inch public ductile iron sanitary sewer force main pipeline that connects into a 42-inch RCP sanitary sewer that runs north and south across the Ash Pond and Dredge Cell. The approximate top of the 30-inch pipe is at elevation 217.5 and the high point of the 42-inch pipe is at elevation 218.5. TVA drawing 10W208-1 R0 is a plan view showing the pipe locations. Drawing 10W208-3 R0 shows details of the manhole at the connection of the 30-inch pipe to the 42-inch pipe. TVA has an agreement with the City of Memphis to restrict the maximum elevation height of the East Dredge Cell southern dike to 239 feet. Drawing 10W208-3 R0 shows a low dredging elevation of 226 in the area of the pipes, which is approximately 7.5 to 8.5 feet from the top of the pipes.
- There is an inactive 60-inch public sanitary sewer pipeline that runs east and west across the Ash Pond and Dredge Cell. Two of the manholes are located within the Ash Pond. The approximate top of the pipe is at elevation 221 based on drawing 10W208-1 R0. Top elevation of the fly ash is highly variable so the actual depth of material over the pipe is unknown. Notes on the drawings require no dredging be performed within a 50 foot radius of the manholes.
- There are two 161KV electric transmission towers within the Ash Pond and one adjacent to the Ash Pond. Drawing 10W208-1 R0 shows the locations. Notes on the drawings require no dredging be performed within 100 feet of the tower base.
- Erosion is occurring on the interior slope along the south dike. This is considered a secondary issue since the crest width at this location is greater than 100 feet.
- The east slope (divider berm) has steep (approximately 2H:1V) slopes with some erosion.



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- There is a seep near the fuel unloader on the bank of McKellar Lake below the USACE Mississippi River Levee and approximately 300 feet from the NW corner of the East Ash Pond. The source of the seep is unknown but suspected to be process water.

8. Recommendations

8.1. Phase 2 Engineering and Programmatic Recommendations

- Evaluate the active and inactive sanitary sewer force mains and determine if rerouting or other measures are feasible or warranted.
- Evaluate current operating procedures for working around the existing electric transmission lines including factor of safety for stability.
- Based on the limited as-built drawings available, it is recommended that a program be established to develop current conditions / as-built drawings to record future modifications to this facility. Construction records should also be included as part of this program to record and quantify construction means, methods and results.
- Due to the limited construction monuments at this facility, it is recommended that additional surveyed construction monuments be established at selected locations. These monuments should be surveyed annually as a minimum.
- Based on the findings of Phase 2 and designs from Phase 3, if performed, Stantec recommends that the existing O & M Manual be reviewed and updated. These updates may include sections on routine monitoring and facility maintenance.

8.2. Maintenance Recommendations

- Cut and maintain heavy/tall vegetation on interior slopes.
- Repair erosion areas where noted and provide rip-rap as necessary.
- Repair / regrade animal paths and burrows and provide seeding and mulching to establish a vegetative cover. Continue to monitor on a regular basis.



**TVA Disposal Facility Assessment
Phase 1 Coal Combustion Product Disposal
Facility Summary
Allen Fossil Plant (ALF)
East Ash Stilling Pond (EASP)**

1. General Facility Information

Facility Status:	Active	NID Identification:	TN15801
Surface Area (inside dikes):	10 Acres	Maximum Height (toe to top of dike):	20 feet
Free Water Volume:	150 Acre-feet	Maximum Water Storage:	200 Acre-feet
Estimated CCB Storage:	Unknown	Dike Length:	200 feet
Plant Discharge to Facility:	9.8 MGD	Current Pool Elevation:	231 feet

2. Site Visit Information

Stantec Assessment Team:	Rob Kirkbride, PE
TVA Staff Present:	Frank Dominioni
Field Assessment Dates:	February 17, 2009
Weather/Site Conditions:	40 degrees F, cloudy, drizzle, moist ground

3. History/Description of Usage

History and Operation: This facility was part of the Ash Pond expansion in 1978. Decant water is transferred from the Ash Pond into the Stilling Pond through the concrete spillway structure in the southwest corner of the pond. There are two primary outlet spillways presumably made of RCP risers and outlet pipes discharge flow into McKellar Lake. Two emergency outlet spillways also presumably consisting of RCP risers and outlet pipes discharge flow through the east dike and eventually into Horn Lake. The emergency spillways are only used when the pool level in McKellar Lake is too high to discharge.

Past Failures/Releases: No failures or releases reported.



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Facility Summary
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East Ash Stilling Pond (EASP)**

4. Owner's Operations, Maintenance and Inspection Information

Emergency Action Plan:	No EAP has been prepared for this facility.
Operations Manual:	TVA maintains a By Products Operation Manual for the Allen Fossil Plant.
TVA Maintenance:	Exterior slopes are mowed as necessary to keep vegetation minimized.
TVA Inspections:	TVA Engineering performs dike inspections and prepares reports annually. Plant personnel make observations throughout the year on a random basis.
Problems Previously Identified During Past TVA Inspections:	Concerns of damaging the existing sanitary sewer line (abandoned) that is below the pond, erosion, rutting and debris blocking the emergency spillway outlets.

5. Documents Reviewed

See attached Document Log for complete list of documents provided by TVA for review. In particular, the following provided pertinent information for the assessment of this facility:

TVA Design Drawings:	10N226 R2, 10N227 R1, 10N228 R1, 10N229-1 R0, 10N229-2 R0, 10W208-1 R0, 10W208-7 R0, 10W211 R0, 10W225 R6, 10W234-1 R0, 10W234-2 R0.
TVA As-Built Drawings:	No drawings identified as As-Built.
TVA Construction Testing Records:	None available.
TVA Annual Inspection Reports:	TVA annual inspection reports from 1967 to 2008.
Geotechnical Data:	Limited data includes lab results, but difficult to tell specific locations of soil borings. (File: ALF MEMO TO GLBUCHANAN FROM GENE FARMER ON ALF ASH DISPOSAL AREA DIKES - SOIL INVESTIGATION.pdf)



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East Ash Stilling Pond (EASP)

6. Stantec Field Observations

See attached Concerns/Photo Log, Photos, and Site Plan Drawing.

6.1. Interior Slopes

Vegetation:	All slopes have dense phragmites at lower portion of slope. North, south and east slopes have adequate grass ground cover that has been mowed. The west slope (divider berm) is primarily bare boiler slag.
Trees:	None.
Wave Wash Protection:	None.
Erosion:	Some wave erosion occurring on all slopes. Most is minor, but east slope is more significant with scarp heights of 1 to 2 feet.
Instabilities:	Only wave erosion observed.
Animal Burrows:	No burrows, but did observe animal path from the crest to the water surface (15 feet long and 1 foot wide). This path matches the path along crest and down the exterior slope.
Freeboard:	Measured: 6 feet Design: Unknown
Encroachments:	None
Slope:	Measured: North - 4H:1V East - 3H:1V West (divider berm) - 2H:1V to 3H:1V South - 3H:1V Design: 3H:1V

6.2. Crest

Crest Cover and Slope: North, South and East - Grass covered with no slope.
 West - Mostly bare boiler slag with no slope.



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East Ash Stilling Pond (EASP)

Erosion:	Primary erosion is on the access ramp located in the southeast corner of the pond. The erosion is 12 to 16 inches wide and approximately 30 feet long. The water drains down the ramp and into an adjacent swale which has also eroded.
Alignment:	Appears uniform.
Settlement/Cracking:	No significant settlement/cracking observed.
Bare Spots/Rutting:	The majority of the west (divider dike) and the access ramp is bare. Minor rutting on all dikes.
Width:	Measured: North - 30 to 35 feet East - 12 to 15 feet West (divider berm) - 22 to 25 feet South - 20 feet + Design: North - Unknown (USCOE Levee) South - Unknown (USCOE Levee) East - 16 feet West (divider dike) - Unknown

6.3. Exterior Slopes

Vegetation:	North - Good grass cover South - Good grass cover East - Good grass cover. Some phragmites at the toe and 5 to 10 feet up the slope. West (divider dike) - Mostly phragmites
Trees:	None.
Erosion:	No significant erosion observed.
Instabilities:	None observed.
Uniform Appearance:	Yes.
Seepage:	None observed. The toe of the east dike was not observable due to ponding water.
Benches:	None.
Foundations, Drains, Relief Wells, Instrumentation:	None.



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East Ash Stilling Pond (EASP)

Animal Burrows:	Numerous small (less than 2 inches) animal burrows throughout the east dike.
Slope:	Measured: North - 4H:1V South - 4H:1V East - 3H:1V West (divider dike) - 2H:1V Design: North - Unknown (USACE Levee) South - Unknown (USACE Levee) East - 3H:1V West (divider dike) - 2H:1V
Height:	Measured: North - 20 feet South - 20 feet East - 20 to 25 feet West (divider dike) - Unknown Design: North - Unknown (USACE Levee) South - Unknown (USACE Levee) East - 20 to 25 feet West (divider dike) - Unknown

6.4. Spillway Weirs/Riser Inlets

Number:	4
Size, Type and Material:	The four decant structures are constructed using stacked 48 inch diameter RCP risers. The two primary structures outlet into McKellar Lake via a 36 inch diameter RCP pipe and the secondary (emergency) structures have the same design and outlet downstream of the east dike and flow to the south in a stream channel which outlets into Horn Lake. The base/foundation is designed to be concrete.
Height of Riser Inlets:	Approximately 20 feet.
Access:	There is no direct access to the spillways, but there is an adjacent catwalk that provides a partial view.
Joints:	Could not be observed.
Mis-Alignment:	None observed.
Closed/Abandoned Conduits:	None.



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East Ash Stilling Pond (EASP)**

6.5. Outlet Pipes

Number:	4
Size, Type and Material:	The four outlet pipes are 36 inch diameter RCP.
Headwall:	The two primary outlets have a headwall with sluice gate controlled openings to prevent backflow of water during flood events. The two emergency outlets discharge into a drainage channel and do not have headwalls.
Joint Separations:	Could not be observed.
Mis-Alignment:	None observed.
Closed/Abandoned Conduits:	None.

7. Notable Observations and Concerns

- The Outlet Structure that transfers flow from the Ash Pond into the Stilling Pond includes stop logs to control pool level. The top of the stop logs are approximately 2 to 3 feet below the crest of the divider berm. The pool levels at the time of the site visit were at nearly the same elevation even though the stop logs were well above the pool level. It is likely that flow is seeping through the divider berm keeping the pool levels at a similar elevation. This structure should be evaluated to determine if there are potential overtopping concerns. See Photo EASP-2.
- The four decant structures are possibly constructed using stacked RCP risers. The two primary structures outlet into McKellar Lake and the secondary (emergency) structures outlet downstream of the east dike and flow to the south in a stream channel which outlets into Horn Lake. The two secondary outlets at the toe of the east dike are partially submerged (see Photo EASP-6). Erosion has occurred at the primary decant structure outlet where the concrete channel flows into McKellar Lake (see Photos EASP-7 and EASP-8).
- There is an inactive 60-inch public sanitary sewer pipeline that runs east and west across the Ash Pond and Dredge Cell. Two of the manholes are located within the Ash Pond. The approximate top of the pipe is at elevation 221 based on drawing 10W208-1 R0. Top elevation of the fly ash is highly variable so the actual depth of material over the pipe is unknown. Notes on the drawings require no dredging be performed within a 50 foot radius of the manholes.
- Water is ponding at the toe of the exterior slope of the east dike making it difficult to evaluate if there is any seepage occurring (see Photo EASP-5).



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East Ash Stilling Pond (EASP)**

- Tall vegetation has grown up along the lower portion of the exterior slope of the east dike (see Photo EASP-5).
- Animal paths and small (12 inch) animal burrows were present on the exterior slope of the east dike (see Photo EASP-4).
- The west slope (divider berm) has steep slopes (approximately 2H:1V) with some erosion.
- Wave erosion has occurred along the internal slope of the east dike. The height of the erosion varies from 6 inches up to 2 feet.
- Erosion has occurred on the crest ramp in the southeast corner of the pond (see Photo EASP-3).

8. Recommendations

8.1. Phase 2 Engineering and Programmatic Recommendations

- Evaluate existing topography and drainage conditions at the toe of the east dike at the East Ash Stilling Pond. A hydraulic and hydrologic analysis should be performed to determine if positive drainage is being provided away from the east dike.
- Evaluate the active and inactive sanitary sewer force mains and determine if rerouting and/or abandonment is necessary.
- Evaluate the Inlet / Outlet Structure (within the divider berm) that transfers flow from the East Ash Pond to the East Ash Stilling Pond. A hydraulic and hydrologic analysis should be performed to determine suitability and operation procedures.
- Evaluate the decant structures at the East Ash Stilling Pond for suitability and condition.
- Evaluate current operating procedures for working around the existing electric transmission lines including factor of safety for stability.
- Based on the limited as-built drawings available, it is recommended that a program be established to develop current conditions / as-built drawings to record future modifications to this facility. Construction records should also be included as part of this program to record and quantify construction means, methods and results.
- Due to the limited construction monuments at this facility, it is recommended that additional surveyed construction monuments be established at selected locations. These monuments should be surveyed annually as a minimum.



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East Ash Stilling Pond (EASP)**

- Based on observations made during the site visits and review of the documents provided, it is recommended that a hydraulic and hydrologic analysis be performed for this facility. This facility has significant flow concentrations and is critical to operation of the plant.
- Based on the findings of Phase 2 and designs from Phase 3, if performed, Stantec recommends that the existing O&M Manual be reviewed and updated. These updates may include sections on routine monitoring and facility maintenance.

8.2. Maintenance Recommendations

- Cut and maintain heavy/tall vegetation on interior slopes.
- Remove trees and brush from the exterior slope of the east dike.
- Repair erosion areas where noted and provide rip-rap as necessary.
- Repair / regrade animal paths and burrows and provide seeding and mulching to establish a vegetative cover. Continue to monitor on a regular basis.



**TVA Disposal Facility Assessment
Phase 1 Coal Combustion Product Disposal
Facility Summary
Allen Fossil Plant (ALF)
West Ash Pond (WAP)**

1. General Facility Information

Facility Status:	Inactive	NID Identification:	Not Available
Surface Area (inside dikes)	23 Acres	Maximum Height (toe to top of dike):	28 feet
Free Water Volume:	0	Maximum Water Storage:	600 Acre-feet
Estimated CCB Storage:	0	Dike Length:	1200 feet
Plant Discharge to Facility:	0	Current Pool Elevation:	n/a - Empty

2. Site Visit Information

Stantec Assessment Team:	Rob Kirkbride, PE
TVA Staff Present:	Frank Dominioni
Field Assessment Dates:	February 17, 2009
Weather/Site Conditions:	40 degrees F, cloudy, drizzle, moist ground

3. History/Description of Usage

History and Operation:	This area was the original location of the fly ash pond. Sluiced fly ash was discontinued in 1978 until May 1991 when it was reactivated. Prior to resuming sluicing to this area, approximately 173,000 cubic yards of ash was hauled from it and used for fill material in the Corp of Engineers levee. Sluicing was again discontinued in October 1992 and the pond water was pumped out. The area has been inactive since.
Past Failures/Releases:	No failures or releases reported.



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West Ash Pond (WAP)**

4. Owner's Operations, Maintenance and Inspection Information

Emergency Action Plan:	No EAP has been prepared for this facility.
Operations Manual:	No Operations Manual has been prepared for this facility.
TVA Maintenance:	Exterior slopes are mowed as necessary to keep vegetation minimized.
TVA Inspections:	TVA Engineering performs dike inspections and prepares reports annually. Plant personnel make observations throughout the year on a random basis.
Problems Previously Identified During Past TVA Inspections:	Prior to inactivating this area in 1992, seepage problems with the spillway structure were noted. Additional concerns included trees and dense brush cover on most of the exterior slopes.

5. Documents Reviewed

See attached Document Log for complete list of documents provided by TVA for review. In particular, the following provided pertinent information for the assessment of this facility:

TVA Design Drawings:	10N223 R2, 10N224 R1
TVA As-Built Drawings:	No drawings identified as As-Built.
TVA Construction Testing Records:	None available.
TVA Annual Inspection Reports:	TVA annual inspection reports from 1967 to 2008.
Geotechnical Data:	Limited data includes lab results, but difficult to tell specific locations of soil borings. (File: ALF MEMO TO GLBUCHANAN FROM GENE FARMER ON ALF ASH DISPOSAL AREA DIKES - SOIL INVESTIGATION.pdf)



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Facility Summary
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West Ash Pond (WAP)**

6. Stantec Field Observations

See attached Concerns/Photo Log, Photos, and Site Plan Drawing.

6.1. Interior Slopes

Vegetation:	Dense vegetation at the toe of all slopes.
Trees:	Dense trees at the toe of all slopes.
Wave Wash Protection:	None.
Erosion:	No significant erosion observed.
Instabilities:	None observed.
Animal Burrows:	None observed.
Freeboard:	Measured: N/A - pond is empty Design: Unknown
Encroachments:	The Chemical Pond was constructed inside the northeast corner of the pond. Approximately 25% of the pond was filled in to create a staging area for Reed Minerals.
Slope:	Measured: North, East and West - 3H:1V South - 4H:1V (USACE Levee) Design: North, East and West - 3H:1V South - Unknown (USACE Levee)

6.2. Crest

Crest Cover and Slope:	North - Grass cover with no slope. South - Gravel road with no slope. East - Gravel with no slope. West - Grass cover with no slope.
Erosion:	Minor erosion on all crests.
Alignment:	North and East are somewhat irregular. South and West appear uniform.
Settlement/Cracking:	No significant settlement or cracking observed.
Bare Spots/Rutting:	Several minor bare spots on all dikes. Consistent rutting along the crest (up to 6 inches deep).



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West Ash Pond (WAP)**

Width:	Measured: North - 18 to 20 feet South - 50 feet + (USACE Levee) East - 30 feet + West - 18 to 20 feet
	Design: North - 16 feet South - Unknown (USACE Levee) East - Unknown West - 16 feet

6.3. Exterior Slopes

Vegetation:	North - Dense brush and vegetation. South - N/A East - N/A West - Dense brush and vegetation.
Trees:	North - Very dense trees covering entire slope. South - N/A East - N/A West - Some trees near the toe and sporadically on slope.
Erosion:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Instabilities:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Uniform Appearance:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Seepage:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.



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Benches:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Foundations, Drains, Relief Wells, Instrumentation:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Animal Burrows:	North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. None noted.
Slope:	Measured: North - Not visible to observe. South - N/A East - N/A West - Difficult to observe. Estimate 3H:1V. Design: North - Unknown South - N/A East - N/A West - 3H:1V
Height:	Measured: North - Not visible to observe. South - N/A East - N/A West - 10 to 15 feet Design: North - Unknown South - N/A East - N/A West - 10 to 15 feet

6.4. Spillway Weirs/Riser Inlets

Number:	1 (abandoned)
Size, Type and Material:	The decant structure is constructed using stacked 48 inch diameter RCP risers that outlet through the west dike into McKellar Lake via a 36 inch diameter RCP pipe and channel. The base/foundation is designed to be concrete.
Height of Riser Inlets:	Approximately 15 feet.



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Access:	The pond is empty so access to the spillway is difficult due to the dense vegetation.
Joints:	Could not be observed.
Mis-Alignment:	No significant mis-alignment was observed on the exposed portion of the spillway.
Closed/Abandoned Conduits:	Unknown, however design drawing 10N223 R2 shows two pipes that were to be removed prior to construction of the west dike. Their status is unknown.

6.5. Outlet Pipes

Number:	1
Size, Type and Material:	Unable to access outlet.
Headwall:	Unknown.
Joint Separations:	Unknown.
Mis-Alignment:	Unknown.
Closed/Abandoned Conduits:	Unknown.

7. Notable Observations and Concerns

- This structure is inactive and appears to be empty. See Photo WAP-1.
- Original Decant Structure should be evaluated to determine if operation of the pond relies on this structure for storm water hydraulic and hydrologic capacity. No ponding water was observed within the pond during the site visit so the drainage may be adequate. See Photo WAP-1.
- Trees and dense vegetation are growing on the pond interior which is approximately 10 feet below the crest of the dikes (See Photo WAP-2).
- Trees and dense vegetation are growing on the exterior slope of the north dike (See Photo WAP-3).



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8. Recommendations

8.1. Phase 2 Engineering and Programmatic Recommendations

- Based on the limited as-built drawings available, it is recommended that a program be established to develop current conditions / as-built drawings to record future modifications to this facility. Construction records should also be included as part of this program to record and quantify construction means, methods and results.
- Although this facility is inactive, based on observations made during the site visits and review of the documents provided, it is recommended that a hydraulic and hydrologic analysis be performed for this facility to evaluate the storm water inflow and determine the suitability of the outlet structure to pass the design storm.
- It is recommended that a facility specific Operations & Maintenance Plan be developed to provide means and methods of operating this facility efficiently and identifying the maintenance necessary to allow for proper evaluations.

8.2. Maintenance Recommendations

- Cut and maintain heavy/tall vegetation on interior and exterior slopes to allow better observation.
- Remove trees and brush from the interior and exterior slopes.



Drawing Mark EAP-1 Erosion is occurring on the interior slope along the south dike looking west.



Drawing Mark EAP-2 Outlet Structure operated using stop logs.



Drawing Mark EAP-3 Fly Ash influent pipes at northwest corner.



Drawing Mark EAP-4 Dredge Cell interior drainage looking south.



Drawing Mark EASP-1 Overview of pond showing railroad to the south.



Drawing Mark EASP-2 Concrete inlet structure with stop logs.



Drawing Mark EASP-3 Access ramp to crest on southeast corner of pond. Note the erosion on the ramp.



Drawing Mark EASP-4 Eastern embankment has animal paths extending from toe of exterior slope to water surface of interior slope.



Drawing Mark EASP-5 Eastern embankment showing ponding water and thick vegetation at the toe. Portions of the slope had small (1 to 2 inch diameter) animal burrow holes.



Drawing Mark EASP-6 Decant structure outlets to Horn Lake. Note partially submerged outlet pipes.



Drawing Mark EASP-7 Decant structure outlet into McKellar Lake has erosion occurring.



Drawing Mark EASP-8 Decant structure outlets to McKellar Lake.



Drawing Mark EASP-9 Decant structure inlets with skimmers.



Drawing Mark EASP-10 Interior slope wave erosion.



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TVA Disposal Facility Assessment
Phase 1 Coal Combustion Product Disposal Facility Summary
Allen Fossil Plant (ALF)
East Ash Stilling Pond (EASP)
Photos, Concerns/Photo Log

Concerns/Photo Log		
Drawing Mark	Comments	Photo/GPS ID
EASP-1	Overview of pond showing railroad to the south.	IMG_1321
EASP-2	Concrete inlet structure with stop logs.	IMG_1327
EASP-3	Access ramp to crest on southeast corner of pond. Note the erosion on the ramp.	IMG_1329
EASP-4	Eastern embankment has animal paths extending from toe of exterior slope to water surface of interior slope.	IMG_1334
EASP-5	Eastern embankment showing ponding water and thick vegetation at the toe. Portions of the slope had small (1 to 2 inch diameter) animal burrow	IMG_1335
EASP-6	Decant structure outlets to Horn Lake. Note partially submerged outlet pipes.	IMG_1338
EASP-7	Decant structure outlet into McKellar Lake has erosion occurring.	IMG_1346
EASP-8	Decant structure outlets to McKellar Lake	IMG_1347
EASP-9	Decant structure inlets with skimmers.	IMG_1348
EASP-10	Interior slope wave erosion.	IMG_1358



Drawing Mark WAP-1 Interior of Ash Pond mainly empty and covered with trees and dense vegetation.



Drawing Mark WAP-2 Dense trees and vegetation are growing on the interior of the pond.



Drawing Mark WAP-3 Dense trees and vegetation are growing on the exterior slope of the north dike.



Drawing Mark WAP-4 Abandoned decant structure on west end of pond. Deteriorated and surrounded by heavy vegetation.



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Date Reviewed	Reviewed by	File Name	File Type
3/10/2009	RJK	Aerial View From Book ALF East Ash Pond Temorary Dredge Cell.pdf	PDF
3/10/2009	RJK	ALF - Aerial Photo Of East Portion Of Facility.pdf	PDF
3/10/2009	RJK	ALF - Ash Pond Drawings (From Cal).pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2000.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2001.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2002.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2003.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2004.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2005.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2006.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy2007.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy67.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy68.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy69.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy70.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy71.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy72.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy73.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy74.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy75.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy76.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy77.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy78.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy79.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy80.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy81.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy82.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy83.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy84.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy85.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy86.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy87.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy88.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy89.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy93.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy94.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy95.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy96.pdf	PDF



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Allen Fossil Plant (ALF)**

Date Reviewed	Reviewed by	File Name	File Type
3/10/2009	RJK	ALF Ash Pond Insp Fy97.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy98.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Insp Fy99.pdf	PDF
3/10/2009	RJK	ALF Ash Pond Red Water Seep Inspections 2006 - 2008.pdf	PDF
3/10/2009	RJK	ALF Civil Design Gbuide Dg C5.2 Earth Design Slope Stability Analysis.pdf	PDF
3/10/2009	RJK	ALF Memo Ash Disposal Areas Dikes - Soil Investigation Dated May 2 1973 (Duplicate With Notes).pdf	PDF
3/10/2009	RJK	ALF Memo O Fplacy From Jcmccraw On ALF Ash Disposl Area Dike Borrow Source.pdf	PDF
3/10/2009	RJK	ALF Memo To Fplacy From Jcmccraw ALF Ash Disposal Area Dike - Borrow Exploration.pdf	PDF
3/10/2009	RJK	ALF Memo To Gene Farmer From Glbuchanan On ALF Ash Disposal Areas Kikes Raising - Construction Information.pdf	PDF
3/10/2009	RJK	ALF Memo To Glbuchanan From Gene Farmer On ALF Ash Disposal Areas Kikes - Soil Investigation.pdf	PDF
3/10/2009	RJK	ALF Proposed West Ash Pond Extension Figure 4.pdf	PDF
3/10/2009	RJK	ALF Report Of Additional Geotechnical Exploration Potential Ash Disposal Area Belz Property July 1 2005.pdf	PDF
3/10/2009	RJK	ALF Report Of Geotechnical Exploration East And West Ash Disposal Areas Aug 18 2004 Mactec Project.pdf	PDF
3/10/2009	RJK	ALF Report Of Geotechnical Exploration Potential Ash Disposal Area Belz Property Oct 19 2004.pdf	PDF
3/10/2009	RJK	ALF Table 1 ALF Ccw Drawing List.pdf	PDF
3/24/2009	RJK	ALF.pdf	PDF
3/10/2009	RJK	ALF_Ashpondinsp_Fy09_Draft.pdf	PDF
3/10/2009	RJK	ALF-10N223-Sht -Rev 2 Main Plant - Ash Disposal Areas Ash Disposal Area (cal).pdf	PDF
3/10/2009	RJK	ALF-10N223-Sht -Rev 2 Main Plant - Ash Disposal Areas Ash Disposal Area West Of Powerhouse Sheet 1.cal	CAL
3/10/2009	RJK	ALF-10N224-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area (cal).pdf	PDF
3/10/2009	RJK	ALF-10N224-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area West Of Powerhouse Sheet 2.cal	CAL
3/10/2009	RJK	ALF-10N226-Sht -Rev 2 Main Plant - Ash Disposal Areas Ash Disposal Area (cal).pdf	PDF
3/10/2009	RJK	ALF-10N226-Sht -Rev 2 Main Plant - Ash Disposal Areas Ash Disposal Area East Of Powerhouse Sheet 2.cal	CAL
3/10/2009	RJK	ALF-10N226-Sht -Rev 2.cal	CAL
3/10/2009	RJK	ALF-10N227-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area (cal).pdf	PDF
3/10/2009	RJK	ALF-10N227-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area East Of Powerhouse Sheet 3.cal	CAL
3/10/2009	RJK	ALF-10N227-Sht -Rev 1.cal	CAL
3/10/2009	RJK	ALF-10N228-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area (cal).pdf	PDF
3/10/2009	RJK	ALF-10N228-Sht -Rev 1 Main Plant - Ash Disposal Areas Ash Disposal Area East Of Powerhouse Sheet 4.cal	CAL
3/10/2009	RJK	ALF-10N228-Sht -Rev 1.cal	CAL
3/10/2009	RJK	ALF-10N229-1-Sht -Rev 0 Standard Drawing Weir For Ash Disposal Spillway (cal).pdf	PDF
3/10/2009	RJK	ALF-10N229-1-Sht -Rev 0 Standard Drawing Weir For Ash Disposal Spillway.cal	CAL
3/10/2009	RJK	ALF-10N229-1-Sht -Rev 0.cal	CAL
3/10/2009	RJK	ALF-10N229-2-Sht -Rev 0 Standard Drawing Ash Disposal Spillway (cal).pdf	PDF
3/10/2009	RJK	ALF-10N229-2-Sht -Rev 0 Standard Drawing Ash Disposal Spillway.B00	B00
3/10/2009	RJK	ALF-10N229-2-Sht -Rev 0 Standard Drawing Ash Disposal Spillway.cal	CAL
3/10/2009	RJK	ALF-10N229-2-Sht -Rev 0.cal	CAL
3/10/2009	RJK	ALF-10W200-1-Sht -Rev 4.cal	CAL



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Allen Fossil Plant (ALF)**

Date Reviewed	Reviewed by	File Name	File Type
3/10/2009	RJK	ALF-10W201-1-Sht -Rev 7.cal	CAL
3/10/2009	RJK	ALF-10W202-2-Sht -Rev 1.cal	CAL
3/10/2009	RJK	ALF-10W208-1-Sht -Rev 0 Yard East Ash Pond Dredge Cell Plan (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-1-Sht -Rev 0 Yard East Ash Pond Dredge Cell Plan.cal	CAL
3/10/2009	RJK	ALF-10W208-2-Sht -Rev 0 Yard East Ash Pond Dredge Cell Sections & Detai (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-2-Sht -Rev 0 Yard East Ash Pond Dredge Cell Sections & Details.B00	B00
3/10/2009	RJK	ALF-10W208-2-Sht -Rev 0 Yard East Ash Pond Dredge Cell Sections & Details.cal	CAL
3/10/2009	RJK	ALF-10W208-3-Sht -Rev 0 Yard East Ash Pond Dredge Cell - Manhole Detail (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-3-Sht -Rev 0 Yard East Ash Pond Dredge Cell - Manhole Details & Sections.cal	CAL
3/10/2009	RJK	ALF-10W208-4-Sht -Rev 0 Tva Ash Pond Crossing Plan Intersection Of Plt (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-4-Sht -Rev 0 Tva Ash Pond Crossing Plan Intersection Of Plt & Riverport Road Sheet 1.cal	CAL
3/10/2009	RJK	ALF-10W208-5-Sht -Rev 0 Tva Ash Pond Crossing Intersection Of Plt & Riv (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-5-Sht -Rev 0 Tva Ash Pond Crossing Intersection Of Plt & Riverport Road Sheet 2.cal	CAL
3/10/2009	RJK	ALF-10W208-6-Sht -Rev 0 Tva Ash Pond Crossing Intersection Plt & Riverp (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-6-Sht -Rev 0 Tva Ash Pond Crossing Intersection Plt & Riverport Road Sheet 3.cal	CAL
3/10/2009	RJK	ALF-10W208-7-Sht -Rev 0 Yard East Ash Pond Dredge Cell Spillway Structu (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-7-Sht -Rev 0 Yard East Ash Pond Dredge Cell Spillway Structure.cal	CAL
3/10/2009	RJK	ALF-10W208-8-Sht -Rev 0 Tva Ash Pond Crossing Intersection Plt & Riverp (cal).pdf	PDF
3/10/2009	RJK	ALF-10W208-8-Sht -Rev 0 Tva Ash Pond Crossing Intersection Plt & Riverport Road Sheet 4.cal	CAL
3/10/2009	RJK	ALF-10W210-1-Sht -Rev 0 Crushing Facility Plan & Sections Crusher Build (cal).pdf	PDF
3/10/2009	RJK	ALF-10W210-1-Sht -Rev 0 Crushing Facility Plan & Sections Crusher Building Wash Down Sump.cal	CAL
3/10/2009	RJK	ALF-10W210-3-Sht -Rev 0 Crushing Facility Washdown Sump Concrete And Re (cal).pdf	PDF
3/10/2009	RJK	ALF-10W210-3-Sht -Rev 0 Crushing Facility Washdown Sump Concrete And Reinforcing Plan, Sections, And Details.cal	CAL
3/10/2009	RJK	ALF-10W211-Sht -Rev 0 Main Plant - East Ash Disposal Area Catwalk To Wa (cal).pdf	PDF
3/10/2009	RJK	ALF-10W211-Sht -Rev 0 Main Plant - East Ash Disposal Area Catwalk To Water Level Monitoring Station.cal	CAL
3/10/2009	RJK	ALF-10W214-3-Sht -Rev 0 Civil Coal Yard Runoff And Drainage Ditch Improv (cal).pdf	PDF
3/10/2009	RJK	ALF-10W214-3-Sht -Rev 0 Civil Coal Yard Runoff And Drainage Ditch Improvements 2006 Retention Pond Plan View.cal	CAL
3/10/2009	RJK	ALF-10W215-Sht -Rev 0 Yard Concrete Retaining Wall At Ash Sluice Pipe T (cal).pdf	PDF
3/10/2009	RJK	ALF-10W215-Sht -Rev 0 Yard Concrete Retaining Wall At Ash Sluice Pipe Trench Near Bc 3A & 3B.cal	CAL
3/10/2009	RJK	ALF-10W225-Sht -Rev 5 Main Plant Ash Disposal Areas Ash Disposal Area E (cal).pdf	PDF
3/10/2009	RJK	ALF-10W225-Sht -Rev 5 Main Plant Ash Disposal Areas Ash Disposal Area East Of Powerhouse Sheet 1.cal	CAL
3/10/2009	RJK	ALF-10W225-Sht -Rev 6 Main Plant Ash Disposal Areas Ash Disposal Area Ea (cal).pdf	PDF
3/10/2009	RJK	ALF-10W225-Sht -Rev 6 Main Plant Ash Disposal Areas Ash Disposal Area East Of Powerhouse Sheet 1.cal	CAL
3/10/2009	RJK	ALF-10W234-1-Sht -Rev 0 Yard Ash Pond Discharge Discharge Flume Repairs (cal).pdf	PDF
3/10/2009	RJK	ALF-10W234-1-Sht -Rev 0 Yard Ash Pond Discharge Discharge Flume Repairs.cal	CAL
3/10/2009	RJK	ALF-10W234-2-Sht -Rev 0 Yard Ash Pond Discharge Partial Plan Sections & (cal).pdf	PDF
3/10/2009	RJK	ALF-10W234-2-Sht -Rev 0 Yard Ash Pond Discharge Partial Plan Sections & Details.cal	CAL
3/10/2009	RJK	ALF-10W235-Sht -Rev 18.cal	CAL



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Phase 1 Document Review Form
Allen Fossil Plant (ALF)**

Date Reviewed	Reviewed by	File Name	File Type
3/10/2009	RJK	ALF-10W260-Sht -Rev 0 Yard Units 1-3 Concrete & Misc Steel Ash Disposal (cal).pdf	PDF
3/10/2009	RJK	ALF-10W260-Sht -Rev 0 Yard Units 1-3 Concrete & Misc Steel Ash Disposal Pipe Trench Outline & Reinf (Nldf).cal	CAL
3/10/2009	RJK	ALF-10W402-1-Sht -Rev 1 Yard Units 1 - 3 Concrete And Misc Steel Ash Tre (cal).pdf	PDF
3/10/2009	RJK	ALF-10W402-1-Sht -Rev 1 Yard Units 1 - 3 Concrete And Misc Steel Ash Trench Modifications Outline And Reinforcement.cal	CAL
3/10/2009	RJK	ALF-10W402-2-Sht -Rev 1 Yard Units 1 - 3 Concrete And Misc Steel Ash Tre (cal).pdf	PDF
3/10/2009	RJK	ALF-10W402-2-Sht -Rev 1 Yard Units 1 - 3 Concrete And Misc Steel Ash Trench Modifications Outline And Reinforcement.cal	CAL
3/10/2009	RJK	ALF-10W402-3-Sht -Rev 0 Yard Units 1 - 3 Concrete And Misc Steel Ash Tre (cal).pdf	PDF
3/10/2009	RJK	ALF-10W402-3-Sht -Rev 0 Yard Units 1 - 3 Concrete And Misc Steel Ash Trench Modifications Outline And Reinforcement.cal	CAL
3/10/2009	RJK	ALF-10W402-4-Sht -Rev 0 Yard Units 1 - 3 Concrete And Misc Steel Ash Tre (cal).pdf	PDF
3/10/2009	RJK	ALF-10W402-4-Sht -Rev 0 Yard Units 1 - 3 Concrete And Misc Steel Ash Trench Modifications Outline And Reinforcement.cal	CAL
3/10/2009	RJK	ALF-17W500-4-Sht -Rev 3.cal	CAL
3/10/2009	RJK	ALF-Facility-Wide Drawings (From cal).pdf	PDF
3/10/2009	RJK	Allen Fossil Plant - Aerial Photo Scan With Structure Labels.pdf	PDF
3/10/2009	RJK	Allen Fossil Plant - Aerial Photo.pdf	PDF
3/10/2009	RJK	FY2008_ALF_Summary.pdf	PDF