



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

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July 13, 2008

Mr. Gregory R. Signer
400 West Summit Hill Drive
Knoxville, TN 37902-1401

Re: Commissioner's Order No. OGC 09-0001 - Conceptual Approval of
TVA's CAP

Dear Mr. Signer:

As we know, on January 12, 2009, the Tennessee Department of Environment and Conservation (TDEC) issued an order requiring the Tennessee Valley Authority (TVA) to, among other things, prepare a comprehensive Corrective Action Plan (CAP). On February 4, 2009, TDEC joined the U.S. Environmental Protection Agency (EPA) in directing TVA to provide all submittals simultaneously to both agencies for review and approval. On March 2, 2009, TVA submitted a Corrective Action Plan to TDEC as required by Section XIII, Paragraph 5 of TDEC's Order. On May 11, 2009, EPA signed an enforceable agreement with TVA further addressing the remediation of the impacted site.

This letter will serve as TDEC's conceptual approval of TVA's CAP. Attachment 1 provides specific comments that are to be addressed by TVA as the CAP is implemented.

The on-going cooperative efforts of TVA, TDEC and EPA to address the Kingston coal ash release are unprecedented. There are provisions in the TDEC order that overlap with provisions in the EPA/TVA enforceable agreement. There are also provisions within each of these documents that are unique to each agency's regulatory authority and responsibility. Therefore, it is TDEC's goal to put in place a framework for coordination of our Order's requirements with those of EPA/TVA's enforceable agreement that will prevent duplication of effort and give clear direction to TVA.

Attachment 2 provides a chart that delineates TDEC's and EPA's primary areas of regulatory authority and responsibility. Provided that all required submittals continue to be simultaneously submitted to both EPA and TDEC, TVA is advised and directed that in those areas where EPA is named as having primary responsibility, provisions in TDEC's order that address these areas shall be deemed satisfied if TVA fully complies with the EPA/TVA enforceable agreement. Further, in those areas where EPA is named as having primary responsibility, EPA's approval of TVA's plans, schedules, work, etc. shall also constitute TDEC's approval and no separate or additional approval is necessary until and unless TVA is advised otherwise in writing by TDEC. TVA shall submit a schedule for completion of the deliverables in Attachment 2 to both TDEC and EPA.

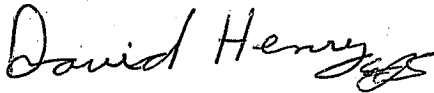
Ms. Barbara Scott is hereby named as TDEC's "On Scene Coordinator" and primary point of contact. All submittals shall be sent to her as follows:

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TDEC/Water Pollution Control
3711 Middlebrook Pike
Knoxville, TN 37921

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Sincerely,



David Henry
Assistant General Counsel

Attachment 1
Corrective Action Plan
TVA Kingston Fossil Plant

Conceptual Goals - Resolve all human health threats, restore air, land and water quality and develop a path for future TVA Kingston Fossil Plant operation. Sections 1, 2 and 3 below provide an overview of TDEC's Corrective Action Goals for the investigation and clean-up of this release as well as our expectations for restoration of environmental conditions at the site. Section 4 provides Division specific comments regarding the Corrective Action Plan submitted by TVA to TDEC on March 2, 2009.

1. Investigation and Clean-up of Coal Ash Release

- a. Remove coal ash from the Emory River as specified by the EPA Agreement and Order (AOC) by Spring 2010. Coal ash should be removed so that no more than 6 to 12 inches of coal ash remains above original sedimentation in the river;
- b. Remove coal ash from Swan Embayment and all affected tributaries to the Emory as determined by the EE/CA by Fall 2010;
- c. Remove coal ash released on land surface as determined by the EE/CA by Spring 2011;
- d. Repair the Emory River, its tributaries and Swan Bay and return the water bodies to their original uses including recreational and fish and aquatic life;
- e. Repair and return all land impacted by the coal ash release to its original uses;
- f. Disposal of coal ash recovered during remediation off-site by rail, truck and/or barge, as appropriate;
- g. Investigate and resolve any ground water problems caused by the release;
- h. To the extent practicable, prevent any further release of coal ash during the investigation and clean-up that would impact local public health; and
- i. Establish NRDA Trustee Council and determine natural resource damages.

2. Coal Ash Management

- a. Complete the Structural Integrity and Stability Assessment and repair of the TVA Kingston Coal Ash Surface Impoundment;

- b. Reconsideration of Surface Impoundment NPDES Permit for Effluent Parameters and Limits;
- c. Completion of the Root Cause of Failure Analysis for the Kingston Fossil Plant Class II Landfill;
- d. Structural Integrity and stability assessment for remaining portion of Class II Landfill;
- e. Closure of the Class II Landfill as prescribed by the Solid Waste Regulations; and
- f. Development of short term and long term coal ash management strategies;

3. Restore Public Trust

- a. Develop and implement a Community Involvement Plan;
- b. Promote citizen input into all corrective action strategies; and
- c. Routinely interface and receive input with county and municipal officials or appropriate groups they may establish and interact with other public groups as needed to reach different aspects of the local population.

4. Corrective Action Plan Regulatory Division Specific Comments

a. Air Pollution Control Comments

TVA is required to revise the Corrective Action Plan to:

- i. Include the most recent data from the FRM type monitors and not the survey data as the comparison data for the NAAQS discussions. The summary and graphic provided do not have any meaning in the context of comparisons to the NAAQS if they are depicting the survey data results;
- ii. Discuss what actions will be taken if elevated air levels are measured on site. A tiered plan culminating in cessation of excavation and grading operations is recommended. During cessation of operations, if the material still dusts, what procedures will be taken to minimize its dusting;
- iii. Include a reference to the status of the final air monitoring plan for the site that includes the actual monitoring using the FRM based samplers;

- iv. Discuss the results of the metals monitoring;
- v. Discuss the particle size of the ash, its potential for becoming airborne and the air monitoring to gauge the impact of various particle sizes upon air quality;
- vi. Discuss the procedure to keep TDEC appraised of the current property boundary;
- vii. Include TVA's plan of action should legacy sediment contamination from the riverbed is brought to the surface as the ash is dredged and exposed to the air, if such legacy sediments are identified a plan should immediately be developed to address the management and disposal of that "mixed" ash, including air and water monitoring and evaluation of their potential impacts;
- viii. Discuss the disposal of the tree and vegetative debris using tub grinding and any impacts to ambient air;
- ix. Discuss the plan to reduce the impact of diesel emissions from heavy equipment, pumps, generators and marine vessels associated with the clean up;
- x. Discuss the off-site transport of the removed ash;
- xi. Discuss the methods to be used to prevent coal ash from becoming windborne/airborne in truck beds, rail cars and/or barges;
- xii. Discuss the route(s) used for transporting coal ash off-site for disposal the precautions that will be taken to prevent loss of coal ash on to the disposal facility(ies) route;
- xiii. Discuss management of coal ash generated from truck/vehicle washing and techniques that will be used to keep coal ash distributed on the road surface from becoming airborne in operations such as mowing the right of way;
- xiv. The Ash Disposal Plan should include a discussion of the airborne dust potential from the off-site disposal of coal ash;
- xv. Please explain how the average to be calculated in section 5.3 "average of the real-time values in the previous sampling period" will be calculated. Discuss whether this is based on a one hour or 24 hour average or is this based on the average of the 1 to 5 minute evaluations conducted at multiple locations across the entire site or in a specific location or area;
- xvi. Please define "trigger level" mentioned in section 5.3 on page 14;

- xvii. The "real time" monitoring equipment employed may not be an accurate surrogate for FRM or equivalent monitors. Is there any procedure that can be used to correlate the values reported to the FRM equivalent value? This is important as the real time equipment may not adequately identify particulate events on non-scheduled sampling days for the FRM samplers;
- xviii. The use of the term "action level" may not have meaning outside of the actual exclusion zone or on site work areas. Explain how the action levels would be applicable for sampling outside of the exclusion zone but on TVA owned property and how they would be applied on private property;
- xix. Please explain if the action level referred to for PM2.5 and PM10 is the same as the trigger level mentioned on page 14;
- xx. The current AQI for PM2.5 defines moderate air quality as from 15.5 to 40.5 ug/m3 (EPA and Tennessee use 35.5 ug/m3 as the breakpoint for transition to the next higher category) and for PM10 as from 55 to 154 ug/m3. Table 4 defines the Offsite action levels as being equal to the respective standards for each of the pollutants. Would the use of action levels that more closely approach the lower break points for the AQI values of these pollutants be a better approach to protecting public health? The use of an action level that already approaches or equals the "Unhealthy for Sensitive Groups" AQI classification may allow for unnecessary exposures to the public;
- xxi. Additional federal monitoring regulations also require that monitor sampling frequency be increased from 1 in 3 day sampling to 1 in 1 day sampling if measured values fall into a certain percentage range around the standard. Please explain how TVA will increase the sampling frequencies if elevated values are actually measured;
- xxii. Please identify the "exclusion zones" and the boundaries for each exclusion zone;
- xxiii. Please explain how areas that are bisected by public roads will be addressed when ash deposits are located on both sides of the roadway;

xxiv. Comparisons of NIOSH/OSHA Standards

Exposure Limits				
Contaminant	NIOSH REL (mg/m3)	(ug/m3) or (ng/m3)	OSHA PEL	TVA Action Level (24 Hrs)
Silica, crystalline (as respirable dust)	Ca TWA 0.05 mg/m3 - See - Appendix A	50 ug/m3	See Appendix C (Mineral Dusts)	10 ug/m3
Arsenic (inorganic compounds, as As)	Ca C 0.002 mg/m3 [15- minute] See Appendix A	2 ug/m3 2000 ng/m3	TWA 0.010 mg/m3 See Appendix A	20 ng/m3
Thallium (soluble compounds, as Tl)	TWA 0.1 mg/m3 [skin]	100 ug/m3 100000 ng/m3	TWA 0.1 mg/m3 [skin]	240 ng/m3
Arsenic, inorganic IRIS				
Air Concentrations at Specified Risk Levels:				
Risk Level	Concentration	ug/m3	ng/m3	
E-4 (1 in 10,000)	2E-2 ug/cu.m	0.0200	20	
E-5 (1 in 100,000)	2E-3 ug/cu.m.	0.0020	2	
E-6 (1 in 1,000,000)	2E-4 ug/cu.m.	0.0002	0.2	
Air ATSDR				
1-3 ng/m3 in remote locations.				
20-100 ng/m3 in urban areas.				
Sediment and Soil				
Mean and range of arsenic in soil and other surficial materials in the U.S. are 7.2 and <0.1-97 µg/g, respectively.				
http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=3				

b. Water Supply Comments

TVA is required to revise the Corrective Action Plan to:

- i. Replace the ductile iron water line transporting raw water from Swan Pond Spring, along Swan Pond Road, and repair any environmental damage to the spring cause by the coal ash release. TVA shall propose a solution to repair the water line and the installation of a pump station to maintain adequate water pressure from the raw water source to the water treatment plant; and
- ii. Present a proposal to coordinate its ground water monitoring program with the Department Sentinel Well Monitoring Program. The proposal shall follow the Sampling and Analysis protocols employed by the Department and TVA sampling shall follow the same schedule and frequency employed by the Department.

c. Solid Waste Management Comments

TVA is required to revise the Corrective Action Plan to:

- i. Submit any request for vertical expansion of the existing ash processing and temporary storage area at least 15 days in advance of expected approval;
- ii. Submit all requests for in-state Special Waste Approval at least 30 days in advance of expected need to insure proper review and approval of any application for special waste approval to any proposed in-state disposal facility;
- iii. Specify that all coal ash from the TVA Kingston site disposed in Tennessee shall be disposed of in a landfill designed and constructed to meet the SWM Class I Landfill requirements;
- iv. Stipulate that it shall notify the Department ninety days in advance of the any proposed in-state Permit or Permit Modification application for a facility it proposes to use for coal ash disposal. Should site conditions change and due to extenuating circumstances a Permit or Permit

- Modification is needed more quickly, SWM will make every effort to expedite any items submitted;
- v. Propose a process to allow refinement of the CAP due to the complex and large scale remedial actions to be taken at this site. Considerable refinement will be necessary prior to and during implementation;
 - vi. Provide a plan to re-establish the ground water monitoring network for the coal ash landfill with an appropriate compliance boundary and approved background given the level of arsenic in the coal ash, the naturally occurring levels in the native soil and recent results for Arsenic in the coal ash landfill monitoring well program as demonstrated in exceedance for Arsenic in Monitoring Well 6;
 - vii. Address the issue of soil voids encountered during construction of phase I of gypsum landfill footprint, should TVA propose the use of this area for ash processing;
 - viii. Submit a permit modification application for any solid waste activities proposed within the permitted footprint of the gypsum landfill that were not included in the original permit;
 - ix. Amend the CAP on Page 2-10 to correct the date "December 28, 2009." This should be "2008."; and
 - x. Remove the proposal in Section 5.1.2 CAP that proposes a risk assessment and possible final disposal of coal ash in the Ash Processing Area. As stated before, SWM does not consider this area to be an acceptable location for final ash disposal.

d. WPC Comments

TVA is required to revise the Corrective Action Plan to:

- i. Provide timelines for developing the components presented in Figure ES.1;
- ii. Explain the corrective action measures that TVA will take to return all impacted surface water to conditions that the surface water again meets all classified uses;
- iii. Provide a schedule of activities for work to be completed in Part 2.3 of the current Corrective Action Plan. In this part there is a March 2009 NOI referenced, please provide further detail about this activity;
- iv. Clarify the role of the Interagency, modifying the CAP to specify TDEC and EPA participation of Interagency Team and that participation by the Department and EPA will not constitute approval of the Interagency

Team work product. This is implicit in the text, such as in the last paragraph of 2.3 on page 2-21, but we believe it should be stated more directly; and

- v. Report all fish tissue sample analytical results as dry weight to allow comparison with EPA criteria. EPA criteria are published as dry weight. (Page 2-13).

5. TVA Proposed Changes to the CAP Accepted by TDEC

- a. TVA shall add text to the CAP to recognize the EPA Agreement and Order (AOC) and its requirements, similar to the AOC's recognition of the TN Commissioner's Order;
- b. TVA shall add text to identify the scope of the EPA Action Memorandum which includes the following Time Critical Activities;
 - i. Site Wide Health and Safety Plan;
 - ii. Site Wide Storm Water Management Plan;
 - iii. Site Wide Dust Control and Monitoring Plan;
 - iv. Structural Integrity Evaluation for Dike D (the remaining dredge cell dike), Dike 2 (the temporary dike installed to retain ash) and Dike C (the settling pond dike abutting the Emory River), including recommendations for maintenance of existing dikes and berms used to control spilled ash;
 - v. Evaluation of off-site coal ash disposal;
 - vi. Development and implementation of Data Management Plans;
 - vii. Work plans for monitoring water quality including any additional parameters required for water produced during dewatering activities as required in the CERCLA removal action;
 - viii. Work plans for coal ash dewatering operations;
 - ix. Development and implementation of Surface Water Monitoring Plans for the Emory, Clinch and Tennessee Rivers; and
 - x. Develop and submit financial expenditure reports on a schedule approved by EPA and TDEC.

Environmental Investigation, Clean-up and Restoration

Attachment 2 provides a breakdown of the work to be completed due to the TVA Kingston Coal Ash release. The requirements of the TVA/EPA Agreement and Order and the TDEC Commissioner's Order have been divided among specific work efforts at the site. The tables below provide the work activity/deliverable to be completed, the Lead Agency and whether the deliverable/work activity is considered to be Time Critical or Not Time Critical as defined by EPA.

1. Coal Ash Removal from Emory River

Deliverable	Lead Agency	TC/NTC
Complete Phase 1 of the Dredging Plan	EPA	TC
Implement Cenosphere Recovery & Shoreline Cleanup Plan	EPA	TC
Surface water monitoring in the Emory, Clinch and Tennessee Rivers while dredging	EPA/TDEC	TC/NTC
Remove Coal Ash from Emory River - Dredge Phases 2 & 3 – by Spring 2010 (ash remaining below 6 to 12 inches will be addressed in NTC)	EPA	TC/NTC
Restoration of the Emory River to all classified uses	EPA	NTC
Investigate, identify, plan for and remove all TVA coal ash downstream from the TVA Kingston Plant;	EPA	NTC
Develop and implement a Community Involvement Plan	EPA	TC
Develop and Implement site wide Health & Safety Plan	EPA	TC

EPA – Environmental Protection Agency

TC – Time Critical

NTC – Non-Time Critical

2. Coal Ash Removal from Swan Embayment & Tributaries

Deliverable	Lead Agency	TC/NTC
Develop and implement a Storm Water Drainage Plan for the Swan Pond Embayment	EPA	TC
Once construction is complete, ensure Storm Water Pond effluent discharged to Emory River meets 200 NTU rolling 24 hour average performance criteria	EPA	TC
Remove coal ash from Swan Pond Embayment and associated tributaries by Fall 2010	EPA/TDEC	NTC
Restore Emory Embayment and Emory River tributaries for all classified surface water uses	EPA/TDEC	NTC
Develop and implement a Community Involvement Plan	EPA	TC
Develop and implement site wide Health & Safety Plan	EPA	TC

3. Operation & Modification Coal Ash Surface Impoundment

Deliverable	Lead Agency	TC/NTC
Determine the Structural Integrity & Stability of the Coal Ash Surface Impoundment	TDEC	TC
Repair any structural deficiencies in the Coal Ash Surface Impoundment	EPA	TC
Evaluate the settling capacity of Coal Ash Surface Impoundment and adjust operations to minimize TSS levels in effluent discharged to the Emory River	EPA/TDEC	TC
Complete the Stability Report for Dike C at the Emory River and make repairs as necessary at Weir 1	EPA	TC
Evaluate removal of Dredge Cell 4 to increase the treatment capacity of the Coal Ash Surface Impoundment	EPA/TDEC	NTC
Meet existing NPDES discharge limits and monitoring parameters for discharge to Emory River	TDEC	TC/NTC
Propose final closure plan for the Coal Ash Surface Impoundment	TDEC	NTC
Implement Coal Ash Surface Impoundment final closure plan	TDEC	NTC
Develop and Implement Community Involvement Plan	EPA	TC
Develop and implement site wide Health & Safety Plan	EPA	TC

4. Management of Dredged Ash

Deliverable	Lead Agency	TC/NTC
Monitoring and inventorying coal ash placed in Temporary Storage area	EPA	TC
Submit for approval the transport and storage of all coal ash stored temporarily on-site	EPA	TC
Submit for approval any vertical expansion of the temporary ash processing and storage area	EPA	TC
Processing Dredged Coal Ash & maintenance of the Temporary Coal Ash Storage Area	EPA	TC
Continue the Short Term Air Monitoring Program	EPA	TC
Continue the Long Term Air Monitoring Program	EPA/TDEC	NTC
Evaluate the "sluice" delivering coal ash to Surface Impoundment for releases to ground water	TDEC	NTC
Develop and implement a Community Outreach Involvement Plan	EPA	TC
Develop and implement site wide Health & Safety Plan	EPA	TC

5. Disposal of Recovered Coal Ash

Deliverable	Lead Agency	TC/NTC
Submit for approval all disposal facilities located out-of-state. TVA and TDEC notifies Environmental officials in receiving state(s)	EPA/TDEC	TC
Request approval for transportation and disposal of all coal ash moved off-site	EPA	TC
Submit for approval all disposal facilities located within Tennessee. TDEC approves facility and disposal as a "special waste"	EPA/TDEC	TC
Request approval for transportation and disposal of all coal ash moved off-site	EPA/TDEC	TC
Removal of coal ash from the ground surface (off-site and on-site) that was released from the TVA Kingston Coal Ash Landfill as determined by the EE/CA fall 2011	EPA	NTC
Develop and implement a Community Involvement Plan	EPA	TC/NTC
Develop and implement site wide Health & Safety Plan	EPA	TC/NTC

6. Class II Landfill Closure

Deliverable	Lead Agency	TC/NTC
Completion of Root Cause of Failure Analysis	TDEC	TC
Evaluate the Structural Integrity & Stability of the remaining portions of the coal ash landfill	TDEC	TC
Repair of any landfill structural problems at Class II landfill	TDEC	TC
Removal of coal ash from Dredge Cell 4 in the Coal Ash Surface Impoundment if necessary to reduce the TSS levels in effluent from the Surface Impoundment into the Emory River.	EPA/TDEC	TC/NTC
Submit for approval the Dredge Test Cell proposal and implementation of proposal upon TDEC approval. Coordinate with EPA for identification of ash to be used for test.	TDEC	TC
Stabilizing, as deemed necessary, the western Coal Ash Surface Impoundment berm (Dike D) between the Surface Impoundment and the Coal Ash landfill	TDEC	TC
Closure of existing Class II Industrial Landfill	TDEC	NTC
Develop and implement a Community Involvement Plan	TDEC	TC
Develop and implement site wide Health & Safety Plan	TDEC	TC

7. Future Management of Coal Ash – TVA Kingston

Deliverable	Lead Agency	TC/NTC
Submit for approval a Short Term Coal Ash Management Plan for TVA Kingston	TDEC	TC
Implement Approved Short Term Coal Ash Management Plan	TDEC	TC
Submit for Approval a Long Term Coal Ash Management Plan for TVA Kingston including a comparison of Wet Ash vs. Dry Ash Management.	TDEC	NTC
Implement Approved Long Term Coal Ash Management Plan	TDEC	NTC
Develop and implement a Community Outreach Plan	TDEC	TC

8. Long Term Environmental Monitoring

Deliverable	Lead Agency	TC/NTC
Propose and implement an approved Surface Water Monitoring Plan for the Emory, Clinch & Tennessee Rivers	EPA/TD EC	TC
Propose and implement an approved Fish and Aquatic Life Monitoring Plan for the Emory, Clinch & Tennessee Rivers	TDEC	NTC
Propose and implement an approved Long Term Air Monitoring Plan during site investigation and clean-up	TDEC	NTC
Propose and implement an approved Ground Water Monitoring Plan for the TVA Kingston Coal Ash release, including monitoring local wells and springs near the site.	TDEC	TC/NTC
Develop and implement a Community Outreach Plan	TDEC	TC

9. Site Wide Environmental Activities

Deliverables	Lead Agency	TC/NTC
Submit and implement an approved Site Wide Storm Water Management Plan	EPA	TC
Propose Plan for evaluation and utilization of environmental data from TVA Kingston Plant	EPA	TC
Submit and implement an approved Incident Command System including the appointing a TVA Kingston Incident Commander	EPA	TC
Submit and implement an approved risk assessment investigation to evaluate the potential for coal ash contaminants in air, surface water, ground water, soil and on the ground surface to affect human health and the environment	EPA	TC
Submit a draft work plan for performing one or more Engineering Evaluation/Cost Analyses for conducting Non-Time-Critical removal actions as described in Item 30 of the EPA Administrative Order	EPA	NTC
Submit and implement an approved Remedial Site Work Plan as described in Paragraph 31 of the EPA Administrative Order	EPA	NTC
Submit an Initial Financial Report for the TVA Kingston Coal Ash Response and Interval Reports every 90 days	EPA	TC
Establish NRDA Trustee Council and determine natural resource damages due to the coal ash release.	EPA/TDEC	NTC

Site Wide Environmental Activities (continued from Page 16)	Lead Agency	TC/NTC
Address proposed Interagency Work Group	EPA	TC
Develop and implement an approved Community Outreach Plan	EPA	TC
Develop and implement site wide Health & Safety Plan	EPA	TC