

# TVA Kingston Coal Ash Response Roane County, TN

## Non-Time Critical Removal Action Engineering Evaluation/Cost Analysis



# Time Critical vs. Non Time Critical Removal Actions

- Defined in May 11, 2009 AOC
- Time Critical Removal Action
  - Mechanical/Hydraulic dredging of  $\approx$  3 Million Cubic Yards (CY) of coal ash from Emory River, east of Dike #2.
  - 1.2 Million CY Removed (810K dredged/390K excavated as of 9/25/09).
  - 590,000 tons shipped off-site to Perry County, AL (Arrowhead).
  - Averaging  $\approx$ 15,000 CY/day since Labor Day.
  - Estimated dredging completion March-May 2010. Off-site ash disposal to continue for many months after.
- Non Time Critical Removal Action
  - Coal ash west of Dike #2 ( $\approx$  2.5 Million CY) in Embayments and Sloughs.
  - Residual coal ash in Emory, Clinch and TN Rivers. Time Critical now going to native sediments (pre-spill bathymetry).

# TVA Kingston Site



# Non Time Critical Removal Action Requirements in 05/11/09 AOC

- Submit Engineering Evaluation/Cost Analysis (EE/CA) Work Plan within 90 days (paragraph 30);
  - Comprehensive environmental sampling/analysis program.
  - Quantitative human health and ecological risk assessment.
  - Develop range of cleanup alternatives to address unacceptable risk(s) posed.
  - Implement selected removal action(s) via Action Memo after public comment period.
- Jurisdictional Assessment to comply with §404(b) of Clean Water Act (paragraph 34b);
  - Restore waters to functional level at pre-spill conditions.
  - Assessment and removal of coal ash in embayments, sloughs, floodplains, wetlands, etc.
  - Restoration and compensatory mitigation for any short/long term loss of natural resource(s).

# Implementation of Non Time Critical Removal Actions

- Need to have removal action “shovel ready” when dredging work completed.
- Decision for  $\approx$  2.5 Million CY of coal ash west of Dike #2 is not dependent on further chemical or risk analysis.
  - Integrate removal of ash with closure of failed dredge cell.
  - Engineering analysis for concepts and cost estimate.
- Robust data requirements for future decision on Emory, Clinch, and TN River system.
  - Dredging not completed; 2D sediment transport model.
  - Sampling/Analysis Plan to address residual risks posed to human health/ecological receptors.
- Split Non Time Critical in 2 Removal Actions
  - 2.5 Million CY of coal ash west of Dike #2 (1)
  - Emory, Clinch and TN River system (2).

# Implementation of Non Time Critical Removal Action Con't

- Draft EE/CA Work Plan submitted by TVA on 08/10/09 in accordance with AOC.
- State/Federal Regulatory comments submitted to TVA on 09/02/09.
- EPA/TVA/TDEC meeting in Chattanooga on 09/08/09.
- TVA response to comments submitted on 09/18/09.
- Revised Draft EE/CA Work Plan out for public review by early October.

# EE/CA Work Plan Approach

- 3 Alternatives Retained for 2.5 Million CY of coal ash west of Dike #2.
- Common Elements
  - Restoration of embayments & sloughs to pre-spill conditions to address Jurisdictional Assessment.
  - Closure of failed dredge cell (includes all four cells) in accordance with TDEC requirements.
  - Natural Resource Damage Assessment process.
- Alternatives differ by amount of coal ash disposed off-site vs. on-site.
- Sampling & Analysis Plan for river system. Meeting on 10/01/09 to discuss data quality objectives and study design.

# EE/CA Alternatives for 2.5 Million CY of Coal Ash West of Dike #2

- Alternative 1
  - Excavation of 2.5 Million CY of coal ash west of Dike #2 with **off-site** disposal. Restoration to pre-spill conditions/Closure of failed dredge cell. Some improvements of perimeter dikes to contain displaced material. Long term monitoring.
- Alternative 2
  - Excavation of 6 Million CY of coal ash with **off-site** disposal. Restoration to pre-spill conditions/Closure of failed dredge cell. Less reliance on perimeter dikes as cell returned to near ground surface. Long term monitoring.
- Alternative 3
  - Excavation of 2.5 Million CY of coal ash west of Dike #2 with **on-site** disposal in closed out dredge cell. Major improvements to perimeter dikes to contain displaced material. Restoration to pre-spill conditions/Long term monitoring.

# Path Forward/Future Schedule

- CAG meeting on 09/24/09
- Public meeting on 10/01/09
- Long term recovery meeting on 10/07/09
- EE/CA work plan out for public comment early October
- EE/CA Report for 2.5 Million CY of ash west of Dike #2 and closure of failed dredge cell by early 2010.
- Short and long-term ash management plan.

# Questions?

- [www.epakingstontva.com](http://www.epakingstontva.com)
- Craig Zeller, P.E.
  - Remedial Project Manager
  - US EPA Region 4; Superfund Division
  - [Zeller.Craig@epa.gov](mailto:Zeller.Craig@epa.gov)
  - 404.562.8827