Roane County Community Meeting

TDEC Soil and Ash Monitoring – TVA Kingston Ash Slide

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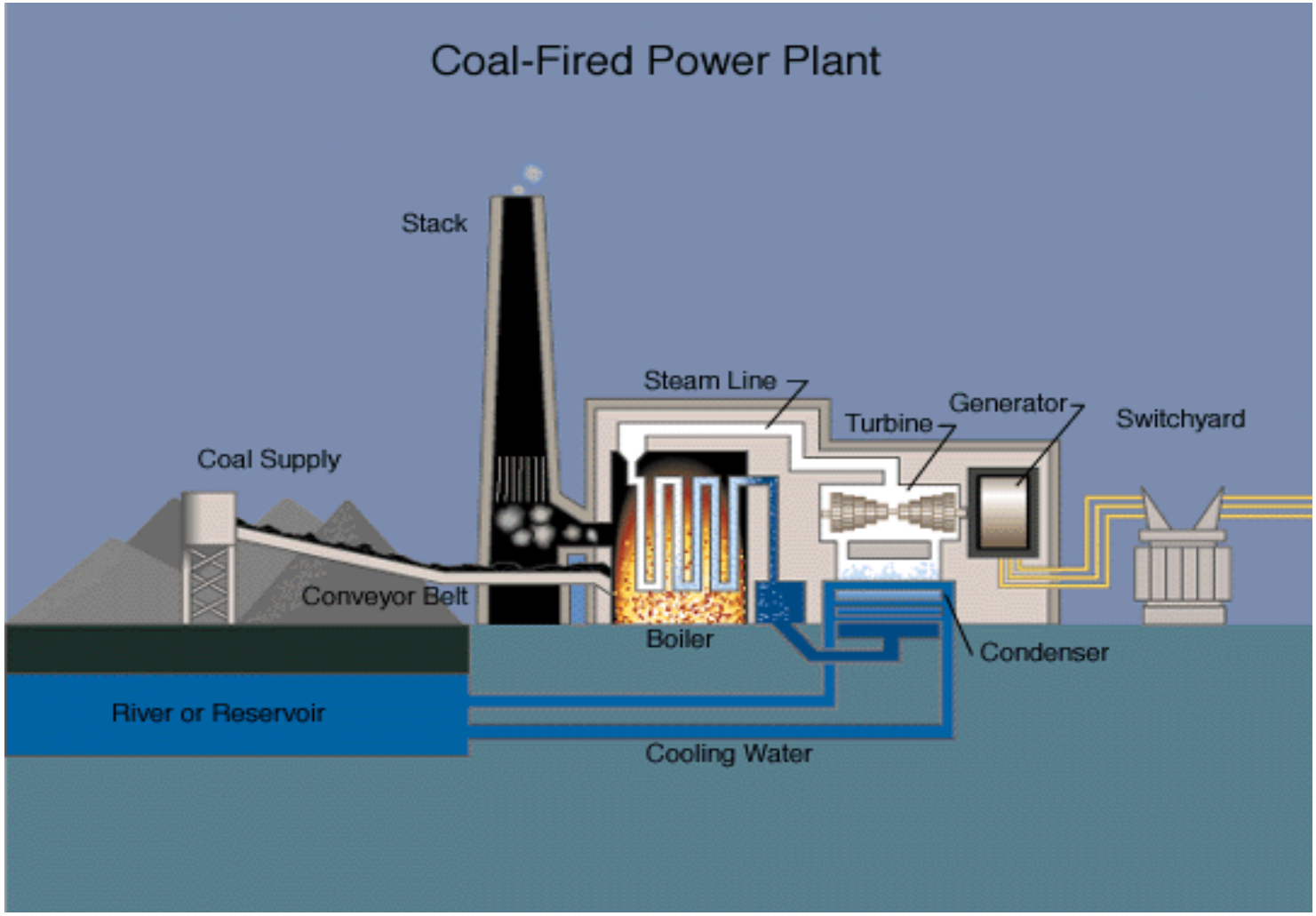
TDEC Soil and Ash Monitoring – TVA Kingston Ash Slide

March 5, 2009

TVA Kingston Ash Information

- TVA Kingston Plant – began operation in 1955
- Coal is burned to generate steam
- Steam is used to generate electricity.
- Fly ash and bottom ash are leftovers from burning coal
- Typically generates 350,000 to 400,000 cubic yards of coal ash per year.
- TVA collects the ash using water, then removes the water and disposes of ash in the Ash landfill

Diagram of Steam Plant



Ash Landfill Permit

- TVA requested to close ½ Ash Settling Pond and add ash to top of closed pond - 1995
- TDEC required TVA to submit a Class II Landfill Permit Application for Kingston – issued in 2000
- TDEC required ground water monitoring
- TDEC inspected landfill quarterly – visual & records inspections only

TVA Kingston Ash Landfill Pre 12-22-08 Release

TVA Kingston Ash Landfill After 12-22-08 Release

Impact of Ash Release

- 5,400,000 cubic yards of coal ash released
- Approximately 5,000,000 cubic yards of ash deposited into Emory River and Emory River Embayment
- Approximately 110,000 cubic yards of coal ash on ground surface
- Damage to homes, property, river and embayment

Ash Sampling

- Produced during coal combustion
- Coal Ash analyzed to determine chemical characteristics
- Coal composition – primarily Oxides of Aluminum, Calcium, Iron, Magnesium and Silica.
- Analyzed ash for other constituents – Total Metals, TCLP Metals, Polynuclear Aromatic Hydrocarbons, Volatile Organics and Radioactivity
- Collected 13 ash samples and 16 soil samples from TVA Kingston Plant and local area

Ash and Soil Sampling Locations

Chemical Analyses of Ash

- No Polynuclear Aromatic Hydrocarbons
- No Volatile Organic Chemicals (solvents)
- Radiation detected – < Human Health risk criteria - DRH staff present to answer questions
- Metals – (Total & TCLP) The metal in concentrations that present risks to human health is Arsenic
- 30 to 70 parts per million Total Arsenic in ash

Arsenic Clean-up Criteria

- Under current guidance:
- 20 ppm Total Arsenic in soil has been used by TDEC and other states for residential soils.
- 40 ppm Total Arsenic in soil has been used by TDEC and other states for industrial soils

Discussion of Radiation

- TDEC does not believe the coal ash has levels of radiation that would adversely affect local public health or the environment
- DRH – Staff Members are here to answer questions about radiation

Ash Dewatering and Disposal

- Ash dredged from the Emory River to be moved to ash dewatering area on the TVA Kingston property on or about 3/20/09
- Water removed from the ash will be directed to the Ash Settling Pond
- Ash will be stored temporarily on-site
- Ash will be tested before off site disposal is approved – Total Metals and TCLP Metals

Ash Dewatering & Storage

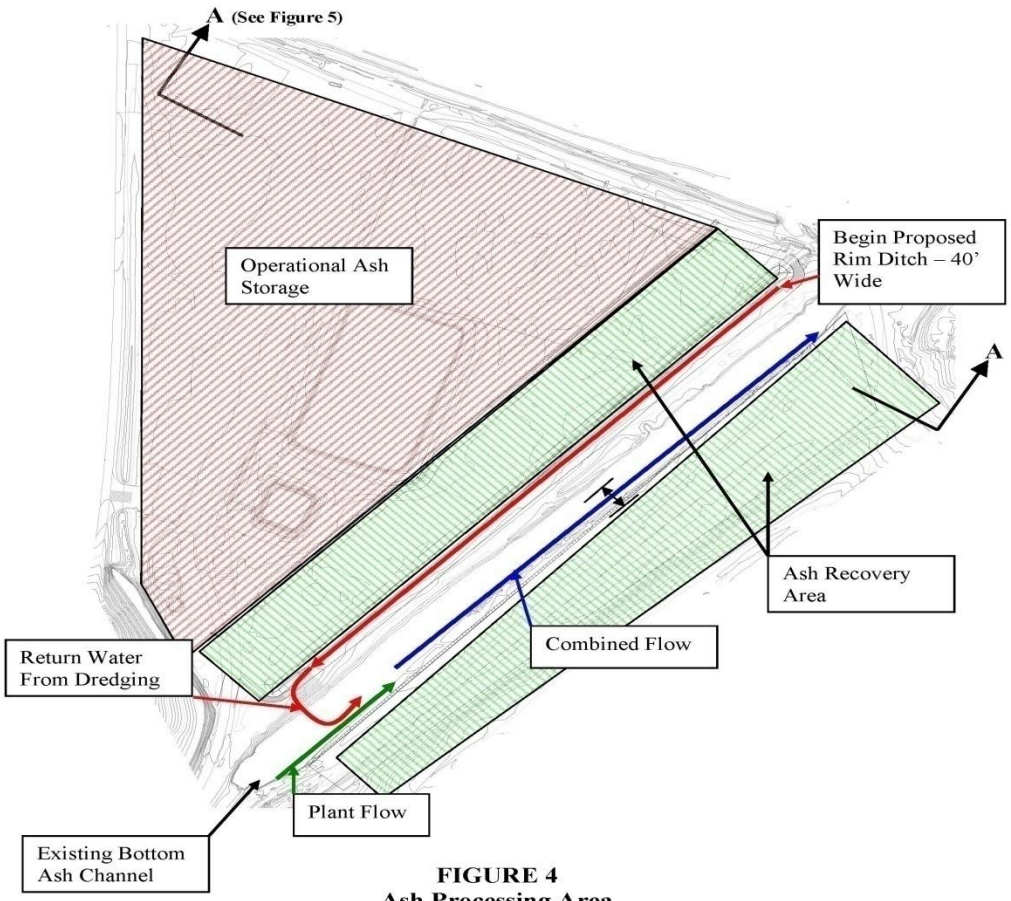
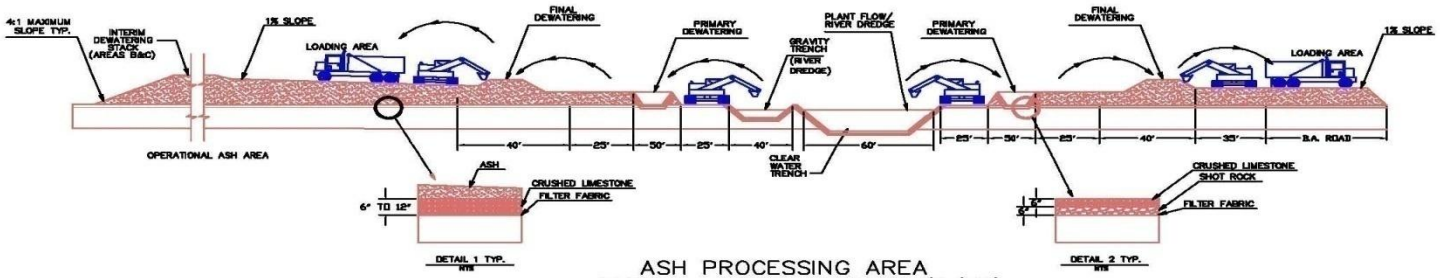


FIGURE 4
Ash Processing Area
Flow Diagram

Ash Dewatering & Storage

FIGURE 5



ASH PROCESSING AREA
TYPICAL CROSS-SECTION (1/30)
NOT FOR CONSTRUCTION
NTS

TVA Corrective Action Plan

- Required in Jan. 13, 2009 Commissioner's Order from TDEC – 45 days from receipt of Order
- TDEC received the Corrective Action Plan from TVA on March 2, 2009 – Plan is under review

Please understand, given the magnitude of this release it will require years to complete clean-up of the ash.