Ash Release at TVA's Kingston Fossil Plant

January 15, 2009

On Monday, December 22, a dike failed at the Tennessee Valley Authority's Kingston Fossil Plant releasing about 5.4 million cubic yards of coal ash that now cover about 275 acres. No injuries occurred, but about 40 area homes were affected. TVA and Roane County Office of Emergency Management and Homeland Security responded immediately, and response and recovery continue.

TVA's Kingston Fossil Plant is located on the Emory River close to the confluence of the Clinch and Tennessee Rivers near Kingston, Tennessee. Construction of the plant began in 1951 and was completed in 1955.

Kingston generates 10 billion kilowatt-hours of electricity a year, enough to supply the needs of about 670,000 homes in the Tennessee Valley. The plant consumes approximately 14,000 tons of coal every day when operating at full power, which results in about 1000 tons of fly ash.

Ash Containment Area

Ash, a by-product of a coal-fired power plant, is stored in containment areas. Failure of the dike caused about 60 acres of ash in the 84-acre containment area to be displaced. The containment area affected is one of three at the Kingston plant.

At the time of the slide, the area contained about 9.4 million cubic yards of ash. The Kingston ash ponds are visually inspected each day. Quarterly solid waste inspections are completed by State personnel in accordance with permitting requirements. Kingston plant personnel conduct seep inspections of the dikes quarterly. Detailed inspections of the ash handling and storage dikes are done annually by TVA engineering staff with written reports that include findings and recommendations.

The most recent annual inspection at Kingston was conducted in October 2008. There were no significant problems found that indicated that the dikes were unstable to the point of failure.

Community Outreach

TVA organized five community outreach teams made up of plant employees and retirees to reach out to homeowners in the affected areas. Each team visits 10 - 15 homeowners each day and they, along with other outreach team members, continue to attend meetings with homeowner and community groups to answer their questions and listen to their concerns.

A TVA Outreach Center opened Tuesday, January 6, at 509 North Kentucky Street in Kingston where residents can report damages of any kind. This may include property, loss of business or other types. The local phone number for the Outreach Center is 865-632-1700. Please call for hours of operation. If residents are unable to come to the center, they can call 1-800-257-2675 to report their claims.

TVA has activated a phone number, 1-800-257-2675, for property owners to call if they need an assessment of property damages.

All other members of the public should continue to use 865-717-4006 with their other questions or concerns.

Roadway and Railway Cleanup
Public access on Swan Pond Road past the Kingston plant and Swan Pond Circle remains closed except for construction as public safety is the first priority. There is no estimate for when the road will reopen for public use.

Reconstruction of the damaged rail lines is complete - 2,114 feet of railway were replaced.

Ash Dust - Erosion Control
Fly ash is mostly inert, and breathing the ash for a short period of time is unlikely to be a health concern. Breathing particulates (fly ash or other airborne particulates) over long periods of time can irritate the respiratory system. TVA is taking measures to reduce the amount of airborne dust that may arise in the future.

To minimize dust and erosion, the undisturbed portion of the ash cell is being treated with a liquid dust suppression agent. To provide temporary ground cover, TVA seeded, fertilized, and mulched about 213 total acres of exposed ash using a helicopter. More than 85 tons of grass seed and fertilizer were used. For areas that can not be easily accessed by air, TVA is using an amphibious vehicle to apply dust suppression materials.

This is a temporary measure for controlling dust and erosion. Long term recovery efforts will continue.

For the area around Swan Pond Road where work is continuing, the ash is being sprayed with water.

Emory and Clinch Rivers
Kingston Fossil Plant is located on the Emory River, which feeds into the Tennessee River. The U.S. Coast Guard has closed the Emory River from mile marker zero through mile marker 4. The Kingston Fossil Plant Boat Ramp and Fishing Area have also been closed due to large equipment being moved into the area for clean-up. Coast Guard and TVA Police marine units are assisting with security in the area.

Work is complete on an underwater rock weir built on the Emory River, just north of the existing intake skimmer weir. The weir is about 615 feet long. The weir will allow water to continue flowing, but will contain the ash.

A second weir/dike has been designed and when complete will confine the ash that is in the slew behind it and keep it from entering the river during the river dredging process. This approximately 2000-foot rock weir will extend from Swan Pond Circle south to the plant river bank.

TVA is coordinating with the Corps of Engineers to address the dredging process on the Emory River in the vicinity of the release.

Water Quality
TVA continues to manage river flows on the Clinch and Tennessee Rivers to minimize impact on recovery and monitoring activities associated with the ash release. The Kingston water supply intake is located on the Tennessee River about one half mile upstream from its confluence with the Clinch River. By managing river flows through the Kingston area, TVA expects to keep ash that might be flowing down the Clinch River from moving upstream toward the water intake.

All EPA, TDEC and TVA water treatment plant sampling results indicate municipal drinking water continues to meet Federal drinking water standards. Each agency is using certified labs for the analysis. Water samples have been tested from four local water treatment facilities, Rockwood, Harriman, Cumberland and Kingston.

The most recent results of water sampling near the ash release area indicate that the concentrations of sampled contaminants either met or were below detection levels established by the Tennessee Department of Environment and Conservation to protect fish and aquatic life.

Results for more than 50 private groundwater wells showed all were within Federal drinking water standards. TDEC will continue well sampling and will contact residents as results become available.

Rain and resulting increase in river flow can cause additional material to be suspended in the water, but it quickly settles out as the flow decreases

Air Monitoring
Technicians using portable monitoring equipment have taken over 2,600 air quality measurements in the communities surrounding the Kingston plant and on the Kingston plant. These measurements show that concentrations of particulates are below the limits of the EPA's national ambient air quality standards and consistent with the average range of readings for the region prior to the incident.

Stationary air quality samplers are located in five residential areas adjacent to the Kingston plant. Samples from these monitors are analyzed for concentrations of airborne metals from ash. The laboratory results for sampling through January 9, 2009, indicate that concentrations of all metals are below detection limits.

Total fine particulate concentrations measured at TVA's on-site mobile laboratory indicate that 24-hour concentrations are well below the national ambient air quality standard.

Radiation Results
Ash samples, as well as a sample of soil from an unaffected area, were taken on December 29 and 30 in the Kingston area and analyzed for radioactivity. The final analyses indicate that the radioactive material present in both samples is similar to what we would normally find in soil in the Tennessee Valley area.

Soil Sampling
Preliminary testing of ash released offsite shows that toxic metals are well below (on the order of 10-100 times) the limits for classification as a hazardous waste. The trace concentrations of toxic metals in the offsite material sampled are consistent with, and generally lower, than that of the historic sampling results from the ash dredge cell that collapsed. The data shows that the concentrations of most metals in the deposited ash are not dramatically different from concentrations found in natural, non-agricultural soils in Tennessee, with the exception of arsenic. Total arsenic results were above the average naturally occurring, but well below levels found in soils that are well fertilized and significantly below the limits to be classified as a hazardous waste.

TVA, TDEC and EPA worked together to develop a long range sampling plan for air, water and soil.