

Tennessee Valley Authority (TVA) Risk Monitoring and Management

Client:

Tennessee Valley Authority
(TVA)

Location:

Chattanooga, TN

Service Provided:

Real-time monitoring and
warning system for all of
TVA's coal ash facilities

Value Provided:

- Illustrates Geocomp's strong skills in using risk monitoring to help manage major risks for a Client
- Allows TVA to access all documentation and data from one centralized database
- Allows for sharing of information between departments at TVA
- System alerts are issued automatically via email to required staff which allows for TVA to assemble their team and focus on issues and problem solving quickly and efficiently

Background & Project Challenges

Tennessee Valley Authority (TVA) experienced a failure at one of their coal ash storage facilities at the Kingston Fossil Plant in 2008 that resulted in the spillage of 5.4 million cubic yards of coal ash up and down the Clinch and Emory Rivers.

The event has cost TVA billions of dollars in cleanup costs and additional damage claims have yet to be heard in court. TVA is now working diligently to clean up the land and water in the area affected by the ash spill. TVA has been working closely with leaders and residents of Roane County to regain public trust, promote economic development, and make the area better than it was before the spill. One method TVA chose to better manage risks at Kingston, and at 22 similar stacks, was to implement a major risk monitoring program for their higher risk facilities. This program consists of engineering assessments to determine potential failure modes, definition of factors that could be monitored to help detect an impending failure, selection of locations and types of sensors that could give early warnings of unacceptable performance and contingency plans to invoke when the observations and monitoring data indicates that action was needed. Given the lack of warning and rapidity with which the Kingston failure occurred, TVA recognized the need for an automated monitoring system to obtain frequent readings on sensors and provide warnings of unacceptable performance as soon as possible.



Geocomp Role & Accomplishments

TVA retained Geocomp to develop and implement a real-time monitoring and warning system for many of its coal ash facilities. This system consists of a web-based GIS data and information management system that collects data from sensors every 5 minutes and compares the recorded values with allowable limits. Alert messages, processed data, and other information are provided across TVA's network in real-time to allow TVA's risk management team to stay informed and react quickly if a threatening event occurs. A specific application of this system allows TVA to monitor heavy rains over each waste storage facility to determine when conditions warrant releasing excess storm water to the river. Regulations permit such a release without penalty to avoid to potential failure.

The system is working so well that TVA is now exploring its use to help manage risk for their dam program and for their environmental well program. Geocomp personnel will also be assisting TVA in developing risk-based approaches to designing closure facilities to safely retire these waste storage facilities.