

**Review of Kingston Fossil Plant Ash Spill Root Cause Study
and Observations About Ash Management
2008-12283-02**

July 23, 2009

On December 22, 2008, a major dike failure occurred on the north slopes of the ash pond at the Tennessee Valley Authority's (TVA) Kingston Fossil Plant. This failure resulted in the release of approximately 5.4 million cubic yards of coal ash spilling onto adjacent land and into the Emory River. TVA's Chief Executive Officer (CEO) directed the TVA Office of the General Counsel to contract with a firm to do a root cause analysis of the spill, and AECOM Technology Corporation (AECOM) was commissioned with the task. The objectives of our review were to (1) provide an independent peer review of AECOM's root cause analysis and (2) review TVA's ash management for weaknesses. To assist us with technical aspects of this review, we hired Marshall Miller & Associates (Marshall Miller) to independently peer review TVA's root cause analysis and provide other observations about ash management practices at TVA. In summary, we found:

- TVA management handled the root cause analysis in a manner that avoided transparency and accountability in favor of preserving a litigation strategy. TVA elected not to publicly disclose management practices that may have contributed to the Kingston Spill.
- TVA could have possibly prevented the Kingston Spill if it had taken recommended corrective actions. TVA was aware of "red flags" that were raised over a long period of time signaling the need for safety modifications to TVA ash ponds.
- AECOM overemphasized the "slimes" layer as a trigger for the Kingston Spill. Marshall Miller concluded that factors other than the "slimes" layer may have been of equal or greater significance.
- Despite internal knowledge of risks associated with ash ponds, TVA's formal Enterprise Risk Management process, which began in 1999, had not identified ash management as a risk. While over the years there was internal discussion about placing the ash ponds under the TVA's Dam Safety Program, ultimately, TVA did not place the ash ponds under its Dam Safety Program. Treating the ash ponds like dams would have required more rigorous inspections and engineering.
- Attitudes and conditions at TVA's fossil fuel plants that emanate from a legacy culture impacted the way TVA handled coal ash. Ash was relegated to the status of garbage at a landfill rather than treating it as a potential hazard to the public and environment.

In addition, this Office of the Inspector General report was presented to the TVA Board on July 14, 2009. After the OIG briefed the Board on its findings, a specially called Board meeting was held on July 21, 2009. A report prepared by McKenna Long and Aldridge that was commissioned by the Audit Committee of the Board in February of 2009 was released. TVA management acknowledged at the July 21, 2009, meeting many of the management failures that we identify in this report. These admissions reflect the type of transparency and accountability for TVA that the OIG has pressed for some time. We applaud the Board's leadership in this matter and TVA management's acknowledgement of TVA's role in the Kingston Spill.

TVA's CEO provided comments on a draft to this report. The CEO generally agreed with our recommendations and, in addition to identifying actions already taken, stated that actions in-process or planned include (1) implementing a cultural focusing initiative across the agency, incorporating lessons learned from the Kingston Spill, (2) using the detailed, technical explanation of what and how the Kingston dike failure occurred to ensure that it never happens again and to safely close the failed cell, (3) developing and implementing (a) more detailed and rigorous policies and procedures for storing, handling, and maintaining ash and ash disposal facilities and (b) a comprehensive program for future Coal Combustion Product remediation and conversion, and (4) implementing enterprise risk management improvements to better achieve the goals of the program.