

TESTIMONY OF TOM KILGORE
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before the
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Subcommittee on Water Resources and Environment
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Chairwoman Johnson, Ranking Member Boozman, and members of the Committee, I appreciate this opportunity to provide an update to you on the progress we are making following last year's coal ash spill at the Tennessee Valley Authority's (TVA) Kingston Fossil Plant. As your hearing title notes, we are approaching the one year mark since the spill occurred on December 22, 2008.

Since my first appearance before this committee on March 31, 2009, I am pleased to report on our continued progress in the recovery at Kingston and to provide an update on our efforts with the Roane County community. In addition, I want to give you a progress report on our work at TVA's other coal ash impoundments. As I mentioned at this committee's second Kingston hearing on July 28, we are incorporating numerous lessons learned from Kingston in our work at our other fossil facilities.

Since the spill occurred, our commitment has not wavered – to clean up the spill, protect the public health and safety, and to restore the area. We have also continued to look for opportunities, working closely with the leaders and residents of Roane County, to make the area better than it was before the spill. We are deeply grateful to the community for their patience and support, and regaining the public's trust is important to all of us at TVA.

Now, at this one year mark, our focus is on the future – cleaning up the land and water, working with the community, providing health assessments, supporting independent scientific research, and setting TVA on a course to be an industry leader in ash management. In addition, we have placed a high priority on strengthening our internal accountabilities and organizational effectiveness. First, I would like to begin with an update on our progress at Kingston.

This Year's Recovery Progress and Plans

Since December 22, 2008, TVA crews and contractors have worked diligently at the site on recovery operations. The oversight of the U.S. Environmental Protection Agency (EPA), along with the Tennessee Department of Environment and Conservation (TDEC), has been crucial to this effort, and we are grateful for their involvement.

EPA and TVA deemed as 'time critical' the removal of three million cubic yards of ash from the main channel of the Emory River. Dredging operations, a plan approved by EPA and TDEC, began on March 19, 2009. We are on an aggressive schedule, and currently averaging the removal of around 15,000 cubic yards a day. At times this year, rain has impeded our progress, although after a three-year drought in the Tennessee Valley, the abundance of rain we've had over the last few months has been a welcome sight.

To date, about two-thirds of the time-critical ash – just over two million cubic yards – has been removed by dredging and excavation. This is a good milestone for us, and we are on track to have the ash removed from the river by the spring of 2010.

The ash recovered from the river is then loaded on trains for transport to the Arrowhead Landfill in Perry County, Alabama. The Arrowhead Landfill is a state-of-the-art, fully permitted, state-regulated, Subtitle D municipal solid waste landfill, operating since 2007. The Arrowhead Landfill meets and exceeds EPA's requirements for municipal landfills, as adopted by the Alabama Department of Environmental Management (ADEM). Both TVA's use of the Arrowhead Landfill and our rail transportation plan were approved by EPA.

As of November 30, 106 trains had left the site carrying over 970,000 tons of ash. Careful loading, handling, and transportation procedures, special rail-car liners, along with the right ash-moisture content, help to make sure that the ash dust does not leave the train cars along the rail route.

Once the ash is unloaded from the train at Arrowhead, the cars are thoroughly cleaned before leaving the property. TVA has two quality-control contractors at the landfill to provide oversight.

We have also come to know Perry County and the city of Uniontown in particular. TVA management visits Perry County on a regular basis, both to make sure the landfill operator is in compliance and to hear any concerns from the local community. We value a good working relationship with local officials and the county's residents, and meet often with local officials. EPA and ADEM officials are also in frequent contact with the Arrowhead Landfill, conducting their own inspections and staying in touch with local officials. About 57 Perry County residents have been hired by Arrowhead to assist in the management of fly ash disposal at full production.

As ash continues to be removed from the Emory River, we are planning the next important step, removing the non-time critical ash that remains in the northern slough and on land. The preparation of the Engineering Evaluation/Cost Analysis (EE/CA) work plan is underway, and will serve as the basis for our work going forward. The public comment period on the EE/CA closes later this month.

Our plan is to complete the EE/CA process by spring 2010 so there is no gap between completing the time critical ash removal and subsequently moving to non-time critical ash removal. In other words, our goal is keep a seamless process in place as we move from one aspect of the recovery operation to another.

All of the options currently being evaluated in the EE/CA include the removal of all ash from the river, northern slough and the land, in keeping with our commitment to restore the area to its natural state as it was before the spill. TVA currently estimates the removal of non-time critical ash will be complete in 2013.

In addition to the recovery operation, there is a great deal of other activity at the Kingston site as our new scrubber is set to come on-line in the near future. This state-of-the-art air emission control is part of TVA's on-going commitment to clean air improvements, and will lower sulfur-dioxide emissions at Kingston by more than 95 percent. We are also in the process of planning for conversion to dry fly-ash storage at the site.

Commitment to Our Neighbors in Roane County

TVA has been part of the Kingston community for over 50 years, and we value our neighbors. We have worked hard to rebuild public trust in the wake of the spill and hope that our actions throughout this past year have demonstrated a genuine commitment to Roane County.

Most of all, we appreciate the community working with us over the past year. We've learned many valuable lessons from our neighbors, and we welcome their input and involvement. For those who live in the immediate vicinity of the site, we have worked to mitigate as many of the inconveniences as possible with a recovery operation of such a large scale and scope. The cooperation and support of our neighbors has meant a great deal to us.

Within the first month following the spill, TVA began purchasing affected properties, using appraisals by state-certified residential and general appraisers. Offers were made based on the higher of two independent appraisals, and based on property values as of December 21, 2008, prior to the spill. TVA's property purchases are nearing completion, with 150 pieces of property purchased, a total of about 601 acres.

Some area residents, and even some people well outside of Roane County, have decided that legal action is how they should deal with TVA and the ash spill. TVA will continue to defend itself against these lawsuits. We have an important balance to maintain here. We must, and will, continue to clean up the spill and ultimately restore the area. At the same time, we must be responsible to all TVA ratepayers in defending against lawsuits. With that balance, we can do the right thing for those impacted and defend against those who would take advantage of the situation.

We've held public meetings throughout the year to keep Roane County residents informed and to address their questions and concerns. Our most recent open house was held on October 1. A Community Advisory Group (CAG), formed in August, is active and meeting on a regular basis with EPA and TVA officials. At the suggestion of those who live in the vicinity of the site, we've added a joint monthly availability session for the public, which includes representatives from EPA, TDEC and TVA. The first joint availability session was held on November 10, and the second is scheduled for December 8.

TVA officials provide updates to the Roane County Long Term Recovery Committee along with county commission and city council meetings in Kingston and Harriman. The public may access the Administrative Record of the ash spill recovery documents at TVA's Outreach Center and the local libraries in Kingston and Harriman. The public has been invited and encouraged to comment on the draft Community Involvement Plan which outlines TVA's plan for working with local residents on recovery activities. TVA's website is continuously updated with Kingston information, and we are currently issuing our second "Report to the Community," which will be mailed to every household in Roane County.

There have been times when we have changed course as a result of the community's feedback. Most recently, we heard concern expressed about TVA's plans to build an overlook on Swan Pond Road where members of the public might safely view the Kingston site. Unfortunately, we caught nearby residents by surprise on these plans, and TVA listened hard to their concerns and objections. As a result, we have modified our plan for the overlook. It will have a locked gate and be used only for operational purposes and scheduled visits, minimizing traffic or other potential disruptions to the neighborhood. We have received positive feedback about this approach.

We have also received questions from our neighbors about other operational activity at the site. Local residents took note when TVA conducted a test burn of coal on September 18 at the Kingston Fossil Plant. The test, which was within our regulatory permits, involved using a different type of coal in preparation for the new scrubber coming on line at the plant. That day, residents saw large snow-like flakes in the air and were concerned about what was coming from the plant. While we worked quickly to respond and provide answers, coordination and communication from the plant would have eliminated alarm and confusion.

Another visible emission occurred a few weeks later when TVA tested the scrubber equipment. Although the scrubber was not operating, there were water-vapor emissions that day, which is not unusual in these operations. Once again, some residents were concerned by what they saw. The emissions were not harmful, but the incident underscored the need to keep both our neighbors and our regulators informed on both our recovery efforts and other operational activity at Kingston.

TVA's restoration effort in Roane County addresses not only the physical clean-up at the Kingston site, but also the economic development needs of the community. TVA's support for economic development priorities in the county and its communities is an important part of our commitment to the area's long-term development.

On September 14, TVA and Roane County's elected leaders announced the establishment of the Roane County Economic Development Foundation. As part of our response to the spill, TVA has committed just over \$40 million to the foundation for locally identified projects. The Foundation's Board is comprised of four local elected officials along with four representatives from TVA.

To date, the Foundation has approved funding for infrastructure capital projects, with a significant commitment for school improvements to strengthen the county's public education system. Other improvements in water and sewer systems will enhance the quality of city services, and support for a capital project in downtown Harriman will help to revitalize the community's downtown.

On November 20, we hosted a day-long event for suppliers and vendors within a 50 mile range of Kingston. Co-hosted by TVA's Supply Chain and Economic Development organizations, the day's sessions brought together representatives from 29 different businesses and industry to learn more about opportunities to do business with TVA. This event was part of TVA's commitment to provide additional economic development opportunities to Roane County and the surrounding area. TVA has made every effort, where possible, to utilize the goods and services of local vendors during the recovery project. Roughly half of what we had spent on recovery efforts at the end of this past fiscal year had been paid to suppliers located in Tennessee.

Important Initiatives in Public Health and Safety

The health and safety of the people living near the Kingston site and for our employees working at the site are the highest priority to TVA. In March, I reported to the committee that TVA was contracting with Oak Ridge Associated Universities (ORAU) to provide community members and the local medical community with access to medical and toxicology experts.

Although state health authorities and the EPA have said that they have not seen evidence that the ash spill is posing health problems for nearby residents, TVA is providing independent, confidential medical evaluations as a precaution for Kingston-area residents who believe their health may have been affected in some way as a result of the ash spill.

ORAU, working with physicians from Vanderbilt University Medical Center, has received health screening requests from more than 260 area residents. A medical toxicologist from Vanderbilt has briefed Roane County physicians who are performing the initial data collection using X-rays, blood work and pulmonary function tests. A Vanderbilt toxicologist began examining residents and reviewing laboratory data in September.

ORAU has developed educational materials for the medical community and the public, which may be accessed at their website, www.oraugov.org/kingstonproject. Area healthcare providers have received a notebook, "Kingston Project: Background for Healthcare Providers," compiled by ORAU with input from the Tennessee Department of Health and Vanderbilt Medical Center. This document is also on the ORAU Kingston Project website.

In addition, TVA is providing ORAU \$1 million a year over three years to encourage independent, peer-reviewed research that will help everyone better understand the properties of coal combustion by-products and develop technology for using them. This includes identifying alternative ways to contain, handle, and process by-products, characterizing their properties so that more by-products can be reused, and better understanding the effects of coal fly ash releases into the environment. Eligibility for this funding has been open to colleges and universities, research institutions, private companies and qualified individual researchers.

ORAU has managed the independent proposal review, and has completed the initial screening of proposals. 173 pre-proposals were received; 83 were selected to provide a full proposal which was due on November 30. ORAU tells us they hope to announce selections in mid-January. A second RFP will also be issued through ORAU in the coming weeks for demonstration technologies of ash utilization.

The safety of our employees is paramount for us. A partnership between TVA, the Tennessee Valley Trades, and TVA contractor partners has been formed at the Kingston site, known as the Tri-Lateral Safety Alliance. The alliance's goal is to create a work environment in which all employees take ownership of safety to eliminate at-risk behaviors and achieve zero-accident performance without fear of retribution.

Critical programs that support safe work practices are tiered from a Site-Wide Health and Safety Plan. For each task, a Job Safety Analysis is performed to identify potential hazards and the controls necessary to minimize them. Workers are trained to identify any unsafe working conditions or unsafe acts they might observe. Although our operations are large in size and scope, nothing is more important than a continuous emphasis on the need for safety as we approach each and every task on the Kingston recovery project.

Consistent Environmental Monitoring Results

TVA, in cooperation with EPA and TDEC, continues to monitor air and water in the Kingston area, and we're pleased to report that results remain good and consistent.

There are five fixed location monitoring stations around the perimeter of the plant and spill site, and one off-site monitor collects background levels. All of the air samples collected through

EPA-approved methods indicate that air quality is better than the National Ambient Air Quality Standards (NAAQS). Importantly, samples that have been sent for chemical analysis in order to detect potentially harmful and damaging materials known to be in coal ash, such as arsenic, have shown no harmful levels.

TVA began air monitoring within a few days of the spill last December with portable hand-held instruments, measuring particulates smaller than 10 microns. Up to 400 readings have been collected daily, and more than 140,000 measurements have been collected within five miles of the site. While there is no standard for comparison for these 'instantaneous' readings, TVA typically compares the results of these readings to NAAQS, which is a 24 hour average. All of the daily averages have also shown air quality better than NAAQS.

EPA, TDEC and TVA continue to collect and assess water samples from public drinking-water supplies, private wells, surface water, multiple locations downstream, and local springs. All sample results for four area water systems – Rockwood, Harriman, Cumberland, and Kingston – continue to meet drinking-water standards. The public water intake at Kingston is sampled and analyzed daily by the city and twice each week by TDEC. TDEC also samples the Rockwood treatment plant intake twice each week. Private drinking water wells within a four-mile radius of the spill have been tested by TDEC. Nearly 100 wells have been tested, and results to date have not indicated any exceedances of the primary drinking water standards for metals.

TVA is also conducting a variety of biological sampling in the vicinity of the spill. These studies are designed to measure potential exposures and effects of ash-related constituents, with both field surveys and laboratory bioassays. Animals that have been sampled include a variety of fish, frogs and toads, muskrats and raccoons, snapping turtles, and eggs of birds that consume fish, insects, and vegetation.

In order to review the initial results of various scientific studies underway as a result of the Kingston spill, TVA requested a poster session be added to the Society for Environmental Toxicology and Chemistry (SETAC) annual conference, held last month. 13 poster papers were presented at this session, including the work of recognized authorities from EPA, U.S. Geological Survey, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Oak Ridge National Laboratory, Duke University and Appalachian State University, to name a few.

Consistently, the results reported from the studies thus far show no preliminary indications of any significant impacts on either water quality in the rivers, or on the fish, birds and other organism's living in the vicinity of the spill. Elevated levels of a few contaminants have been observed where standing water is in contact with the ash.

These results are promising, and TVA will continue to investigate ecological pathways for any possible effects of fly ash contaminants, including longer-term effects from possible bioaccumulation. Several of the studies reported at the SETAC conference will serve as key components of this ongoing work. In March 2010, TVA will host a research symposium at Roane State Community College to focus on research being conducted or planned at the Kingston site. The symposium will identify research priorities and gaps, facilitate exchanges between researchers, and inform the public about these studies on the area's aquatic and biological health.

Steady Progress on Impoundment Improvements

The events of last December forced TVA to take a long, hard look at ourselves. The TVA Board tasked us with important work at their July meeting, and their vision has been instrumental in charting our course for the future. I told our employees back in July, we have some tough medicine to take, but by taking it, we will make ourselves better. That's exactly what we're doing, starting with a commitment to be an industry leader in ash management.

In early January, we contracted with Stantec of Lexington, Kentucky to conduct a third party assessment of our facilities. The initial two phases of Stantec's work were designed to inspect, test and make recommendations on ash and gypsum disposal facilities at all of our fossil plants. Since that time, we have worked aggressively to implement Stantec's recommended maintenance and engineering changes.

We also created a new organization to heighten our management focus on storage facilities. Responsibility for all storage impoundments and the Kingston recovery project is now consolidated in a specific organization, Clean Strategies & Project Development, reporting directly to our Chief Operating Officer.

Stantec has completed intrusive investigations at our sites. The initial geotechnical drilling and instrumentation installation of 625 subsurface borings represents over 37,000 linear feet of total footage bored. We have installed 342 piezometers (to measure water levels) and slope inclinometers (to detect any slope movement) at 10 sites, with one remaining site to be complete by the end of February, 2010.

Forty-five work plans have been issued that remediate or improve stability of the impoundments. Of those, 31 have been implemented, and the remainder is in progress. In implementing these plans, 244,000 tons of rock have been applied to increase road and slope stability. Over 27,000 cubic yards of trees and vegetation have been removed to allow for better visual inspections of dike crest and slope conditions. Stability analysis is complete for nine impoundments, and the remaining analysis will be done by May 30, 2010.

TVA personnel who operate, inspect, and maintain the impoundments have completed a comprehensive training program designed to increase awareness of dam failure modes, provide an understanding of what to look for in their daily work, and to recognize structural distress. This training module for about 300 employees was completed in September. As public safety officers, the TVA Police also received this training.

From the committee's July hearing, you will recall that we reassessed the potential hazard classifications of our wet storage impoundments using National Dam Safety Guidelines. We then preliminarily reclassified impoundments at four of our plant sites as having "High" hazard potential, and an initial breach analysis has been completed at those four sites. (It is important to note that a "High" hazard classification is based on the possible consequences if an impoundment fails and is not an assessment of the structural integrity of an impoundment or the likelihood that the impoundment will fail).

Along with Stantec's ongoing work, TVA personnel inspect all of our active ash disposal areas on a daily, weekly, monthly and quarterly basis. Annual inspections for all impoundments will be performed by Stantec in 2010 and TVA's Dam Safety experts will conduct the annual inspections beginning in 2011.

Another step in our commitment to be an industry leader in the management of coal combustion by-products came in August, with TVA's proposal to convert our six coal-burning plants currently using wet fly-ash handling systems to dry systems. (The remaining five in our fleet of 11 coal-burning plants already have dry fly-ash handling systems). All 11 of TVA's coal-burning plants use wet bottom-ash systems, and those will also be converted to dry storage. This proposed program would build four gypsum dewatering facilities and close 18 existing ash and gypsum ponds. All of the plans are subject to completion of required environmental reviews and obtaining needed regulatory approvals. Importantly, this plan will enable us to eliminate the classification of any TVA impoundment as a high-hazard risk.

This capital program also resides under the supervision of the Clean Strategies & Project Development organization. The projected cost of the plan over 8 to 10 years is \$1.5 billion to \$2 billion. In Fiscal Year 2010, TVA has budgeted \$181 million to begin work. At Kingston, dry fly-ash conversion work is underway. An underground survey of the site, along with soil borings, has been completed, and long lead-time procurement has been initiated. Construction is expected to begin in spring 2010, with dry fly-ash storage operational in late 2011.

Improving Our Performance across TVA

In addition to these initiatives related to ash management, the TVA Board tasked us with other important initiatives in their July Board resolution, and I would like to briefly update you on each of those, and highlight our Organizational Effectiveness Initiative (OEI).

The TVA Board specifically tasked us with the development of an Enterprise Risk Management (ERM) system that identifies top financial and non-financial risks. Our ERM system, already in place prior to the spill, has now been strengthened even further. Plans will be reviewed with ERM to cover environmental, health and safety compliance and to ensure design functions, operational procedures and maintenance practices help prevent undetected risks.

The Board also directed us to set up a Situation Alert Process to inform the TVA Board, executives and other management of incidents that could have a significant impact on TVA. This process is now in place to complement our existing public notification processes. We also have an internal initiative underway to integrate TVA's emergency response plans and make them NIMS compliant. Training modules are available to employees who would be responsible for various aspects of emergency responses.

A Corporate Governance & Compliance organization has been created, as a complement to the Office of the Inspector General's audit function, to ensure that TVA's programs, activities and functions use best practices or established standards.

And finally, we now have underway an agency-wide organizational effectiveness plan, focused on change management, performance, and compliance. I have told our employees that we must improve our performance at every level in TVA. This will continue to be a high priority for us as we rebuild and refocus our internal culture committed to systems, controls, standards and accountability, and begin an overall effort to address legacy culture challenges.

The Organizational Effectiveness Initiative is led by the Corporate Governance & Compliance organization, and we have engaged McKinsey & Company to provide additional industry expertise. As priorities, the OEI will specifically address seven organizational elements:

1/ Governance and accountability, 2/ Organizational structure, 3/ Operating policies and procedures, 4/ Skill sets and institutional capabilities, 5/ Rewards and recognition, 6/ Change-management effectiveness and 7/ Ongoing communications.

We anticipate that the design process will take about five months, and improvement initiatives will begin soon with pilot projects in both the Fossil and Nuclear organizations. While the OEI is likely to last 18 to 24 months, the real key for us will be to learn from this experience, and build a culture of accountability and high performance, ready to meet challenges head on and prepare for future business needs.

This initiative also gives us the opportunity to rebuild trust with the people we serve -- one step at a time. I want to challenge the culture at TVA, so that we will never again miss the warning signs that occurred over the years at Kingston. Simply put, our goal is to be recognized by our customers, employees and Valley stakeholders as a great company.

Commitment to TVA's Mission and the Future of the Tennessee Valley

In the days following the Kingston spill, I said that TVA would fix Kingston and we would fix it right. I hope that our progress to date and our plans for the coming months demonstrate that commitment. Clearly, the Kingston spill and a tough economy combined have overshadowed other happenings at TVA this year. Much of our focus, and rightfully so, has been on recovery operations and community efforts surrounding the spill. But it's important to note that TVA has continued, even in this difficult year, to plan for the future as we strive to have fifty percent of our generation portfolio be clean energy, zero or near-zero carbon emission sources, by 2020.

We are currently looking at future power resource options with an Integrated Resource Plan underway entitled, "TVA's Environmental and Energy Future." The planning process includes an active stakeholder group and numerous opportunities for public input.

We have recently contracted for 450 megawatts of wind power from North and South Dakota, and we will continue to seek other cost-competitive renewable generation options. At our Watts Bar Nuclear Plant, a second nuclear unit is under construction – the only one in the country – and scheduled to be on-line in late 2012.

TVA continues its commitment to one of the nation's most aggressive clean-air programs, with an investment to date of over \$6 billion to reduce emissions and improve the region's air. We have numerous initiatives underway with various partners that involve other technological innovation – from electric cars and solar charging stations to smart grid implementation.

Our energy efficiency and demand response programs, conducted with TVA's distributors, exceeded their goal this year. Summer peak power demand was reduced by 208 megawatts in 2009, surpassing the program's goal of 189 megawatts for the year. This is a significant step as TVA continues to work toward achieving its long-term goal of a peak demand reduction of 1,400 megawatts by 2012. We will continue to work closely with the distributors of TVA power to expand and develop programs that will help people in the Tennessee Valley save energy and money.

TVA is testing building techniques, technologies and household appliances at three experimental houses over the next three years to learn more about how cutting-edge residential construction impacts energy efficiency. The three houses, located in Knoxville, Tennessee, are

the equivalent of a test laboratory, and our partners in this project come from both the public and private sectors.

Like the rest of the country, the Tennessee Valley is not immune to the current tough economic conditions. Working with our partners in the seven states we serve, TVA's economic development efforts in 2008 helped to attract or retain 42,000 jobs with \$5.5 billion in capital investment. *Site Selection* magazine named TVA one of the nation's top utilities for the fourth year in a row, and we are especially pleased that *Site Selection* noted that TVA has helped to attract 'high impact projects' for a 'low carbon economy.' In these difficult times, we will continue to work with local governments and industry to attract and retain jobs and grow economic opportunity in the Valley.

We appreciate the oversight of this committee and the opportunity to provide this report on our progress both at Kingston and across TVA. All of us at TVA deeply regret what occurred last December 22, but you have our continued commitment to clean up the spill, do it right, and take heed of the lessons learned as we move forward. We have made considerable progress this year on many fronts, and our focus is unwavering as we work to rebuild the public's trust and build a better TVA for the people of the Tennessee Valley.

Thank you, and I look forward to your questions.