

Oak Ridge Case Study – Coal-ash Spill, Hazards to Human Health Study

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On December 22, 2008, a coal-ash retaining pond failed at the Tennessee Valley Authority's (TVA) Kingston Fossil Plant in Roane County, TN, releasing over 4 million cubic meters of coal-ash that covered more than 300 acres of water and land. Coal-ash spilled into the Emory River and some of its tributaries. Residents within 1.5 miles of the spill were affected the most, and several came into direct contact with the coal-ash. Several components of the ash are known to be hazardous to human health in large amounts. Samples taken by state and federal agencies were compared to background soil samples to determine toxicity. Some elements, notably a few heavy metals, were found to be of interest for further investigation. A contract was negotiated between TVA and Oak Ridge Associated Universities (ORAU) to set up a medical screening program for residents in the area to determine possible exposure to hazardous substances found in the coal-ash. ORAU has partnered with Vanderbilt University Medical Center (VUMC) to provide expert analysis and review by board-certified toxicologists.

After providing informed consent, participants will receive laboratory analysis of blood and urine samples to determine levels of heavy metals, spirometry to assess pulmonary function, and a chest x-ray to determine any anatomical or physiological abnormalities of the thorax. The results of these medical exams will be reviewed by toxicologists from VUMC. Participants will then be given an appointment time for a physical exam and to discuss the results of their tests. No personal health information will be released to anyone other than those directly involved in the participants' medical care and treatment. De-identified information may be reported to stakeholders only to inform them of screening outcomes.