Field Study of Wastes from Fluidized-Bed Combustion Technologies*

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The U.S. Department of Energy (DOE) has undertaken a research project to monitor advanced coal process wastes placed in natural geologic settings. The overall objective of the study is to gather field data on the engineering and environmental performance of disposed solid waste from various advanced coal processes.

The coal ash from a fluidized-bed combustion unit is being studied as part of the DOE program. The unit is a 110-MW circulating fluidized bed (CFB) at Colorado Ute Electric Association's Nucla Steam Electric Station, which is being demonstrated with the support of the DOE Clean Coal Technology Program. The Electric Power Research Institute is cofunding the study. In June of 1989, a test cell approximately 100 feet square and 8 feet deep was constructed and filled with ash from the Colorado Ute CFB unit. The cell was instrumented with lysimeters and neutron probe access tubes to monitor water flow and leachate chemistry in the ash; groundwater wells and runoff collection devices were installed to determine the effects on groundwater and surface water quality, and a meteorological station was installed to determine the water balance. Additionally, tests are being performed to evaluate the chemical, physical, and mineralogical properties of the solid waste and geologic materials.

Results from the first year of monitoring are presented.