

# Kentucky Research Consortium for Energy & the Environment

The KRCEE was created to support DOE efforts to complete the expeditious and economically viable environmental restoration of the Paducah Gaseous Diffusion Plant, WKWMA, and surrounding areas through:

- Application of technical expertise to assess and accelerate the implementation of cost-effective technologies and methodologies that will result in accelerated clean-up and risk reduction.
- Establishment of problem-specific Project Teams drawn from disciplines of expertise at participating universities that would work with and through DOE and its contractors to accelerate the implementation of project concepts and plans.
- Technical review of proposed remediation plans and any non-consensus technical issues associated with their implementation.
- Utilization of Project Teams to interface directly through DOE with DOE national laboratories, EPA, and state regulatory agencies to help forge consensus solutions to technical problems related to the clean-up and ongoing operations of the PGDP site.
- Accomplishment of targeted long-term and short-term projects tasks designed to support the accelerated clean-up plan for the PGDP.

The activities of the KRCEE are administered through the University of Kentucky's Kentucky Water Resources Research Institute. Annual workplans, deliverables, and associated project budgets are developed through consultation with DOE and address both short-term and long-term tasks to ensure relevancy to on-going remediation efforts.



## Current KRCEE Projects

### METAL RECOVERY PROJECTS

- Economic Analysis of Nickel Release
- Industrial Battery Applications for Depleted Uranium
- Purification and Recovery of Radiologically Contaminated Metals

### SEISMIC PROJECTS

- Development of a Conceptual Stratigraphic Model for the PGDP & Vicinity
- Field Determination of S & P Wave Velocities for Ground Motion Model Input at the PGDP
  - Enhancing Earthquake Monitoring & Assessing Seismic Hazard for the PGDP
  - Field Seismic & Groundwater Investigation to Identify Structural Features Relating to the Discharge of Contaminated Groundwater to Little Bayou Creek through Seeps
  - Field Study & Peer Review for Determination of Holocene Displacement at the C-746-U Landfill
    - Deep Hole Project

### GROUNDWATER PROJECTS

- Groundwater Modeling
- Groundwater Technology Assessment
- Groundwater Sensitivity Analysis
- Landfill Waste Characterization & Source Evaluation
- Assessment of Natural Attenuation of TCE

### SURFACE WATER PROJECTS

- Evaluation of Sediment Technologies for the PGDP
- Surface Water Assessment & Management of the PGDP Facility & the Surrounding Wildlife Management Area
  - Sediment/Surface Water Facilities Field Demonstration
  - TMDL Implementation for the PGDP Facility & the Surrounding Wildlife Management Area

### ECOLOGICAL PROJECTS

- Ecological Project

### TECHNOLOGY DEVELOPMENT PROJECTS

- Bench & Field Scale Demonstration Testing of Nano-structured Bimetallic Systems for the Remediation of Dissolved Phase Contaminated Groundwater at the PGDP
- Demonstration Project for the Application of Non Destructive Analyses for Cost Effective, Real-time Remediation of Surface Water, Sediment, & Soil at the PGDP

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