

## **GSI W-24 Webinar Entitled: “Disposal of Coal Combustion Residuals”**

### Webinar Overview

With coal representing over 25% of energy sources, the disposal of coal combustion residuals is critical. They are placed in disposal areas either in a dry or wet state. The latter is by slurring behind earthen embankments and several have failed in recent years, e.g., in Spain, Hungary and the U.S. (one in North Carolina, the other in Tennessee). This webinar describes the current status including the detailed stability analysis of several sites. It also mentions that there are over six hundred of such facilities in the U.S. along with their approximate geographic locations.

The webinar then addresses, in detail, various geosynthetic related opportunities with disposal sites. All of the methodologies are within the state-of-the-practice of geosynthetic engineering design and construction but are largely unknown or under-utilized in the context of CCR disposal. Each of the nine scenarios is rather detailed and complete such that the webinar participant will be knowledgeably informed of their present status.

### Learning Objectives

Participants will gain detailed perspectives on the status of both dry and wet disposal of coal combustion residuals (CCRs). This includes amounts, types, locations and general design scenarios of the containment embankments. Detailed analyses of such embankments with several case history failures are presented. In light of this background, nine geosynthetic solutions involved in proper disposal will be detailed and illustrated. Ultimately, each participant of the webinar will become knowledgeable of the opportunities and practices that currently exist.

### Webinar Benefits

1. Understand where and how CCRs are generated
2. Understand the stability concerns between dry and wet disposal techniques
3. Appreciate the nature and details of past CCR impoundment failures
4. Understand details of geotechnical stability analyses of such failed embankments
5. Understand the nuances of various CCR liner systems
6. Understand how and why existing foundation soils can impact CCR impoundment failures
7. Understand the nuances of various CCR cover systems
8. Be exposed to new methods of disposal of slurried CCRs

### Intended Audiences

Public and private owners/operators of landfills, heap leach pads, shale gas cuttings, combustion coal residuals and related solid waste facilities; consultants and designers in the public and private sector; regulators and agency personnel at the federal, state and local levels; geosynthetic manufacturers and their representatives; geotechnical and geosynthetic testing organization personnel; contractors and installers of liner and cover systems; academic and research groups;

and others desiring technically related information on this important aspect of our constructed environment.

### Specific Topics Covered

1. Overview of Energy Sources
2. Coal Spoil Tips
3. Coal Combustion Residuals
  - 3.1 Dry Disposal
  - 3.2 Wet Disposal (Slurried)
4. Related Geosynthetic Solutions
5. Summary and Conclusions

### Webinar Instructor

Dr. Robert M. Koerner's (Professor Emeritus of Civil Engineering at Drexel University and Director Emeritus of the Geosynthetic Institute) interest in geosynthetics spans over forty years of teaching, research, writing and advising. He holds his Ph.D. in Geotechnical Engineering from Duke University. He is a registered Professional Engineer in Pennsylvania, a Distinguished Member of ASCE, a Diplomate of the GeoInstitute and a member of the National Academy of Engineering. Bob has authored and co-authored about 750 papers on geosynthetics and geotechnical topics in journals and at national and international conferences. His most widely used publication is the sixth edition of the textbook entitled "*Designing with Geosynthetics*". He is the founding director of the Geosynthetic Institute which is a nonprofit research and development organization dedicated to the proper use of geosynthetics in its myriad applications. The institute also provides laboratory accreditation and inspection certification programs.