

2012 WPI MQP Subjects/Projects

Stantec Consulting Services Inc. (Lexington, KY)

Seismic Risk Reduction for a CCR Landfill Embankment Facility

A power utility company is planning ground improvements along the perimeter of its CCR landfill embankment facility to address potential failure modes resulting from the design earthquake. These improvements include constructing cement-bentonite panels from the ground surface to a specified depth below the top of bedrock. The project includes a variety of structural and geotechnical analyses to verify that the design is both constructable and stable under earthquake loading. The design has been divided into a number of segments to facilitate accelerated construction schedules. During the spring of 2012 some segments will be designed and under construction, some will be designed but not yet under construction, and some will still be in the design process. The student will gain experience in various structural and geotechnical aspects of the project, as well as other issues surrounding the design and construction efforts.