**Understanding Ash Pond Closure and Beneficial Reuse**

Ken Daly, PE, Wood Environment & Infrastructure Solutions, Inc. (Wood),

Dr. Michael J. McCarthy, University of Dundee

Selecting an appropriate coal combustion residual (ash) pond closure approach is a complex, important, dynamic and controversial decision. Historically, ash was managed by sluicing into ash ponds; however, power generators have been closing ash ponds and transitioning to dry ash handling in response to environmental, regulatory and business drivers. At the same time, issues with fly ash availability and supply for construction mean that pond ash may also provide opportunities for beneficial reuse. To enable understanding of these ash pond complexities, the Authors will present a general context by summarizing ash pond backgrounds, reviewing common closure approaches, outlining closure frameworks and sharing closure design and construction considerations. A review of ash pond closure considering near-term or future reclamation will follow. Discussion will then transition to potential use of fly ash from ash ponds in construction applications. The effects that wet conditions have on the physical, chemical and reaction properties of ash and the differences that may be found in material between ash ponds will be reviewed. Recent research at laboratory and pilot-scales investigating approaches to beneficiation, including carbon removal and particle separation/size reduction will be discussed. The Authors will compare the effects of using as received versus beneficiated fly ash on concrete, including various aspects of performance. Overall, the topics covered will highlight the challenges and options for ash ponds and the materials they contain, while emphasizing the role of beneficial reuse.