## Gibson Pond Dam - Using the latest Trends in RCC for Gravity Dams

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Gibson Pond Dam is located in Lexington, South Carolina. The historic masonry dam failed during the flooding effects of Hurricane Joaquin in October 2015. The Owner of the dam, Town of Lexington, has elected to rebuild the dam within the same general footprint as the old dam. Schnabel Engineering (Schnabel) was retained by the Town to develop the design documents for its reconstruction. Because of the large drainage area (31 sq. miles), the dam performs similar to a run of the river type structure requiring most of the length of the dam to serve as the spillway. Schnabel selected an RCC gravity dam/spillway for the replacement dam. Since the early 1980's, the use of RCC has continually been refined to both improve the material properties and to simplify construction techniques for improved productivity. The new Gibson Pond Dam will utilize a high paste, air entrained, and set retarded RCC mix. The Vebe time of the proposed mix will be in the range of 8 to 12 seconds. The intent of the low Vebe time mixture proportion is to reduce cold joints at lift lines, therefore improving the in-situ properties of the RCC. The high paste, low Vebe time mix also allows for the exterior faces to use what is call IVRCC (Immersion Vibrated RCC) to create an impermeable zone of RCC. This will be the first application of IVRCC in the United States. Portions of the exposed RCC surfaces will use a form liner to give a stone veneer surface appearance. Grout enriched RCC will be use in the areas to receive a form liner finish. The presentation will present the development of the RCC mix, the application of the IVRC and GERCC processes, and the means and methods of constructing the gravity dam.