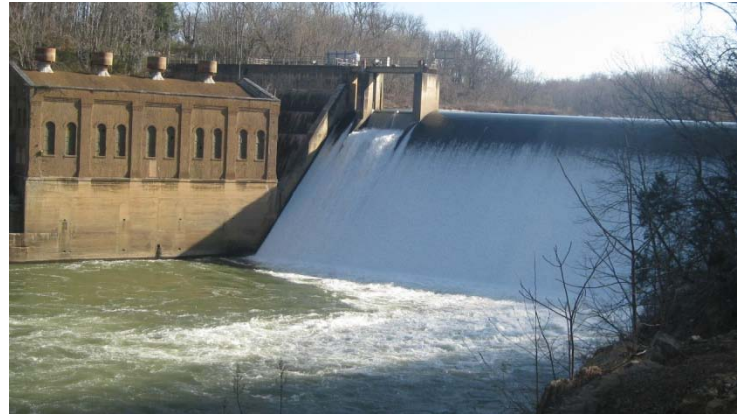


TITLE AND LOCATION (CITY AND STATE) NOLICHUCKY, REDBUD, PINE, AND LOST CREEK DAMS GREENE AND HENDERSON COUNTIES, TENNESSEE		YEAR COMPLETED	
		PROFESSIONAL SERVICES 2012	CONSTRUCTION (IF APPLICABLE) N/A
PROJECT OWNER'S INFORMATION			
PROJECT OWNER Tennessee Valley Authority (TVA)	POINT OF CONTACT NAME Husein Hasan	POINT OF CONTACT TELEPHONE NUMBER 865 632 4194	

RIZZO Associates performed stability analyses for Nolichucky, Redbud, Pine, and Lost Creek Dams in 2012. All of the analyses were done in accordance with current FERC Guidelines based on Tennessee Valley Authority (TVA's) revised dam safety policies. Nolichucky Dam is a 94 foot high, 482 foot long concrete gravity structure built on the Nolichucky River in 1913 and has been raised and modified three times over the life of the Project, including the addition of concrete on the downstream face.



Nolichucky Dam

Redbud Dam is a 31 foot high, 1,320 foot long rolled fill embankment structure constructed in 1965. Pine Dam is a 38.5 foot high, 557 foot long rolled fill embankment dam constructed in the early 1960's. Lost Creek Dam is an 18 foot high, 1,040 foot long rolled fill embankment dam constructed in 1963. All three earth embankment dams are part of the Beech River project located in Western Tennessee.



Pine Dam

The stability analyses included the development of a detailed Task Analysis Criteria Document (TACD) which was submitted to TVA for review and approval prior to beginning the work. The TACD contained detailed information on the material properties, load combinations, technical basis for assumptions, analysis methodology, and engineering software.

The stability analysis for Nolichucky Dam included sliding stability and bearing pressure calculations at the base of the Dam and at several levels within the body of the Dam for the Spillway and Powerhouse. A pseudo-dynamic analysis was also performed for each section.

The stability analyses for Redbud, Pine, and Lost Creek consisted of slope stability analyses for the following loading conditions: Construction, Operation (normal high water, median observed water level, and normal low water level), Probable Maximum Flood, Sudden Drawdown, Earthquake, and Post-Earthquake. A pseudo static analysis was performed for earthquake loading conditions.

Liquefaction potential analyses were also performed using the available subsurface information to determine if either the foundation or dam materials will liquefy under the Maximum Credible Earthquake. The approach developed by H. Bolton Seed as described in Youd et al. was used to perform the evaluation.

