

## Hydrology - SCWRC Report 173

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### **Impact of the Spartanburg Water System on the Hydropower Generation of Bluestone Energy Design, Inc. and Clifton Power Corporation Facilities**

**Pacolet River System  
Spartanburg County, South Carolina**

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#### **ABSTRACT**

A computer model was developed by the South Carolina Water Resources Commission to calculate daily losses or gains in the Pacolet River flow that generate hydropower due to the water withdrawal and the flow regulation by Spartanburg Water System (SWS) for the period from July 1981 to September 1991. The model findings indicate that the average annual losses at the Clifton Power Corporation and the Bluestone Energy Design, Inc. facilities were 4 percent of the maximum Pacolet River flow that could be used to generate hydropower energy, and 3 percent of the total river flow. It was found that more than fifty percent of the water losses in the Pacolet River system were mitigated by the lakes in the system. The model testing results indicate that the model is accurate in describing the flow regime in the Pacolet River system and can be applied to similar flow regimes anywhere in the state. More work is needed to verify some of the model input data and test the model in other basins in the state.

Copies of this report are available in the SCDNR's Columbia office.