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TVA Dealing with One of the Driest Periods in its History

Gene Gibson, manager of water supply and special projects for TVA, recently told the Chattanooga Engineers Club how TVA is managing during the current drought in the Tennessee Valley. Mr. Gibson said that the six-month period from January through June has been one of the driest in the history of TVA. July and August proved to just as dry and both months brought extended periods of record breaking high temperatures.

TVA has been conserving reservoir water since February and the only releases of water have been for navigation and water supply purposes. By just maintaining minimum flows, TVA releases 12 billion gallons of water daily through Kentucky Dam into the Ohio River.

Gibson said that rainfall and runoff this year is 50% to 60% below normal. The tributary dams currently have just 78% of the normal amount of water stored behind them. The reservoirs on the Tennessee River from Knoxville to the confluence of the Ohio River are near normal, simply because these are navigable reservoirs and TVA is required to maintain flows for navigation, water supply and water quality. TVA is maintaining a nine-foot navigation depth in the main river, which is the required minimum. Normally, TVA tries to keep an 11-foot navigation depth or greater. Barge companies have been warned that any barge drifting more than nine feet may drag the bottom.

TVA's power generation has also been impacted by the drought, they have reduced hydro generation to conserve water and the coal-fired and nuclear plants have had to increase usage of the cooling towers to avoid thermal derates at these plants. Over four million people depend on the TVA water system for their water needs. Unfortunately, in a drought period water usage increases because people start watering their yards and washing their cars more, Gibson said.

Gibson further stated he has two big concerns about the future of the water supply in the Tennessee Valley. First, is the Tennessee-Tombigbee Waterway. Over 200 million gallons per day flow from the Tennessee River into the waterway, for navigation purposes on the waterway. The Tennessee-Tombigbee is not authorized for water supply and any legislation that authorizes it as a water supply source, could dramatically change the amount of water being drained away from the Tennessee Valley.

Secondly, Gibson cited a study by Auburn University that recommends a massive irrigation project for northern Alabama to grow fruit and vegetables. The study says that large crops in California, where water supply is scarce, could be displaced to northern Alabama if adequate irrigation could be supplied.

Both of these scenarios are what he calls inter-basin transfers (IBT). There are currently 22 small IBTs in the TVA service area. Collectively, they result in just 11 million gallons per day leaving the TVA region and flowing to another. That number is small and can be put into context when compared to just one lock-through at a TVA dam. One lock-through uses between 10 and 20 million gallons, depending on which lock is being used. Small IBTs are not a problem, but big IBTs are. There are no official applications for large IBTs, Gibson said, but informal discussions are on going.

Despite what the general public thinks, TVA's water system is not used primarily for the generation of electricity. The system was designed for navigation and flood control. Power generation is a by-product. Other uses of the TVA water system includes water supply, water quality and recreation.