

## TVA at a Glance

The Tennessee Valley Authority (TVA) was established by an Act of Congress in 1933 (16 U.S.C. 831-831dd) as a Federal corporation to improve the navigability of and provide flood control for the Tennessee River; to provide reforestation and ensure the proper use of marginal lands in the Tennessee Valley; to provide agricultural and industrial development of the Tennessee Valley; to provide for the national defense; and for other purposes. Today, TVA is the largest public power producer in the United States, generating 174 billion kilowatt-hours of electricity to communities and businesses across the TVA region.

TVA's power system, which is self-financed, consists of:

- 11 fossil plants (56 active units, 3 idle)
- 3 nuclear plants (6 units)
- 29 hydro-electric plants (109 units)
- 1 pumped-storage plant (4 units)
- 9 combustion-turbine sites (87 units)
- 3 combined-cycle sites (7 units)
- 2 diesel-generator sites (9 units)
- 14 solar energy sites, 1 wind-energy site
- 1 digester-gas site
- 1 biomass-co-firing site.

The fossil plants account for 51 percent of electricity generation, nuclear plants account for 36 percent, hydro-electric plants account for 8 percent, and the other sources account for the remaining 5 percent. TVA employs approximately 12,500 people.

### NUCLEAR ASSETS

TVA began building nuclear power plants in the 1960s, responding to the growing prosperity of the Tennessee Valley and the rising demand for power. Today, TVA's three nuclear plants—Browns Ferry, Sequoyah, and Watts Bar—provide about 30 percent of TVA's power supply. The six operating reactors provide more than 6,900 megawatts of clean, safe, and affordable electricity—enough to serve more than three and a half million homes in the Tennessee Valley.

The Watts Bar and Sequoyah nuclear plants, which are described below, are authorized to produce tritium for the National Nuclear Security Administration (NNSA). The production of tritium in a TVA reactor is consistent with the Congressional purposes that established TVA—namely, to provide for the industrial development of the Tennessee Valley and for national defense. Producing tritium for NNSA has also enabled TVA to maximize the utilization of its resources and potentially increase its electricity-generating capacity.

#### Watts Bar Nuclear Plant

TVA Watts Bar, a two-unit pressurized water reactor nuclear plant, is located on the Chickamauga Reservoir in Spring City, Tennessee. TVA received a construction permit from the Nuclear Regulatory Commission (NRC) for each unit in 1973 and Watts Bar 1 began commercial power operation in May 1996, the last commercial nuclear unit in the United States to come online in the 20th century. Watts Bar 2 construction was suspended in 1985, with major structures in place and equipment such as reactor coolant system piping installed. In August

2007, following detailed studies of energy needs, schedule, costs, environmental impacts, and financial risks, the TVA Board decided to complete construction of Watts Bar Unit 2 to help meet the Tennessee Valley's growing demand for power. When completed by 2013, Watts Bar Unit 2 will add 1,180 megawatts to the TVA power system. TVA will apply for an operating license from the NRC under the licensing process used for permitting the existing nuclear plants.

TVA has been producing tritium for NNSA at Watts Bar Unit 1 since 2004. After several years of tritium production experience at TVA's Watts Bar Unit 1, NNSA has determined that tritium is permeating into the reactor cooling water at a higher rate than previously projected. Consequently, TVA has reduced the number of tritium-producing burnable absorber rods (TPBARs) irradiated in Watts Bar Unit 1. The proposed Supplemental Environmental Impact Statement will analyze the potential environmental impacts associated with irradiating a greater number of TPBARs at this higher permeation rate and proposed changes to TVA facilities that may be used for future tritium production.

### Sequoyah Nuclear Plant

Sequoyah is a two-unit pressurized water reactor nuclear plant located on Chickamauga Reservoir near Chattanooga, Tennessee. Unit 1 began commercial operation in 1981 and Unit 2 in 1982. Although Sequoyah has been approved to produce tritium for NNSA, no tritium has ever been produced at the Sequoyah nuclear plants for NNSA. However, the SEIS will include Sequoyah in the analysis of reasonable alternatives for the production of tritium.

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