NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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NRC RECEIVES APPLICATION FROM TVA TO PRODUCE TRITIUM AT WATTS BAR NUCLEAR POWER PLANT IN TENNESSEE

The Nuclear Regulatory Commission has received an application from the Tennessee Valley Authority (TVA) to produce tritium at its Watts Bar nuclear power plant for use by the Department of Energy (DOE).

The application specifically requests that TVA be permitted to install tritium-producing burnable absorber rods at the Watts Bar facility, located near Spring City, Tenn. The DOE has developed technology that would produce tritium using lithium, rather than boron, in burnable absorber rods to be installed in commercial pressurized-water nuclear reactors, such as Watts Bar. The irradiated rods would be removed from the power plant and shipped to the Savannah River Site, near Aiken, S.C., where DOE would extract the tritium.

The license amendment would allow, for the first time, tritium production by a commercial nuclear reactor to ensure future tritium stockpiling for military use. The United States has not produced tritium -- a radioactive form of hydrogen used in the fusion stage of nuclear weapons -- since 1988, when DOE closed a special production facility at its Savannah River Site. Current short-term tritium needs are being met by recycling tritium from dismantled nuclear weapons. The Department of Energy is responsible for establishing the capability to produce tritium by the end of 2005, in accordance with a Presidential directive.

The NRC staff held a public meeting on the issue in Rockville, Md., in February 1997, and in Sweetwater, Tenn., in August 1997 to provide an opportunity for public comment. The NRC staff determined in September 1997 that TVA could place 32 of the burnable absorber rods in the Watts Bar reactor core to test the technology. TVA irradiated the rods until the spring of 1999 and removed them from the reactor. The DOE shipped the rods to the Savannah River Site, examined them and confirmed that the technology worked.

TVA's license amendment, if approved, would permit it to install 2,304 of the rods into the Watts Bar reactor and irradiate them for one fuel cycle, which lasts about 18 months. There will be an opportunity for interested persons to request a hearing on the amendment. TVA would remove the irradiated rods and the DOE would ship them to its tritium extraction facility at the Savannah River

Site. TVA would subsequently install new rods in the reactor and continue the process for the life of the plant.

A public meeting to discuss the tritium production and the NRC's process for reviewing the TVA license amendment request will be held in Evensville, TN., on the evening of October 2. A separate meeting notice will be issued. Another public meeting will be scheduled prior to completion of the agency's review of the application.

The TVA Watts Bar application will be publicly accessible from the NRC's Agencywide Documents Access and Management Systems (ADAMS) Public Electronic Room, and is expected to be available on NRC's web site sometime in September. Help in using ADAMS is available from the NRC Public Document Room at 301-415-4737 or 800-397-4209.

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