United States Nuclear Regulatory Commission
Office of Public Affairs
Washington, DC 20555
Phone 301-415-8200 Fax 301-415-2234
Internet:opa@nrc.gov

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NRC PREPARES TO REVIEW APPLICATION FOR TRITIUM PRODUCTION

The Nuclear Regulatory Commission is prepared to review a license application from the Tennessee Valley Authority (TVA) to produce a future supply of tritium at TVA's Watts Bar and Sequoyah commercial nuclear power reactors.

The Department of Energy has been weighing a number of options to produce tritium in support of DOE's national security mission. Secretary of Energy Bill Richardson yesterday announced the selection of TVA's Watts Bar and Sequoyah plants as the lowest cost and most efficient alternative to ensure the continued safety, security, and reliability of the nation's nuclear weapons stockpile.

Upon hearing the Secretary's announcement, NRC Chairman Shirley Jackson said, "Knowing how important this is to our nation's security, the NRC will review TVA's submittals and related DOE assessments, as expeditiously as possible, to ensure that this alternative meets all licensing requirements in order to protect public health and safety and the common defense and security."

Tritium is a radioactive isotope of hydrogen that is essential for the effective functioning of nuclear weapons in the U.S. arsenal. The United States has not produced tritium since 1988. Because tritium decays at the rate of about 5% per year, DOE concluded that the U.S. will need new production by 2005. Current, short-term tritium needs are being met by recycling tritium from dismantled nuclear weapons.

TVA's Watts Bar and Sequoyah nuclear power reactors are licensed by the NRC under the Atomic Energy Act. Consequently, under existing law, the production of tritium in these reactors can only occur if authorized by the NRC. DOE's selection of commercial reactors operated by TVA for tritium production would be accomplished without any conflict between public safety and national security considerations. In the event safety concerns arise that would force shutdown of the one or more of the reactors, TVA will have the flexibility of continuing tritium production in accordance with applicable licenses in at least one other reactor. Authorization to produce the tritium could be granted by NRC only after conducting a comprehensive safety review and granting specific license amendments. Because of the importance of this program to U.S. national security, the Commission will assign high priority to the license amendments for the Watts Bar and Sequoyah units when NRC receives applications from TVA, and will follow the normal process for considering such amendments, which includes the opportunity for a formal on the record hearing.

TVA has already been involved in a small scale test of tritium production at the Watts Bar Unit 1 reactor. In September 1997, NRC amended TVA's license for the Watts Bar reactor

to allow a limited amount of tritium to be produced for DOE to test the concept of using a commercial light water reactor for tritium production. In the case of this amendment at Watts Bar, a no significant hazards determination was made and no member of the public requested a formal hearing, although the NRC staff did hold a local public meeting in Sweetwater, Tennessee, on August 7, 1997 prior to issuing the amendment on September 15, 1997. Under the terms of that license amendment, four special assemblies, each holding eight rods containing lithium, were loaded in the reactor near Spring City, TN in October 1997. The test assemblies are currently being irradiated in the reactor. These assemblies will be removed from the Watts Bar reactor in March 1999 and evaluated by TVA and DOE. The Sequoyah reactors are located nearby in the vicinity of Chattanooga, TN.

NRC staff is currently evaluating safety assessments prepared by DOE under a joint DOE/NRC Memorandum of Understanding, signed on May 22, 1996. Under terms of that agreement, NRC is providing assistance to DOE in assessing and resolving technical and licensing issues involved in using commercial reactors for tritium production. The NRC staff anticipates completing a technical review of a topical report submitted by DOE in March. License amendments seeking authorization to produce tritium at Watts Bar and Sequoyah are anticipated from TVA in late 1999 or early 2000.

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