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NRC STAFF SAFETY EVALUATION OF DEPARTMENT OF ENERGY PLAN FOR
TRITIUM
PRODUCTION INDICATES LICENSE AMENDMENT TO BE REQUIRED

Commercial light-water reactors that want to produce tritium for the U.S. Department of Energy will need to submit a license amendment request to the Nuclear Regulatory Commission for review and approval prior to undertaking such action.

The United States has not produced tritium, a radioactive gas used as a trigger for the fusion stage of nuclear weapons, since 1988, when DOE's production facility at Savannah River closed. Current, short-term tritium needs are being met by recycling tritium from dismantled U.S. nuclear weapons, but resumption of tritium production will be essential for maintaining the U.S. nuclear weapons stockpile and the U.S. nuclear deterrent.

DOE proposes to produce tritium in commercial light-water reactors, either by purchasing a reactor for its use that would require a NRC license, or by contracting with private industry at an existing NRC-licensed facility.

In February, the Tennessee Valley Authority announced that it planned to use its Watts Bar nuclear power plant near Spring City, Tennessee, to test a concept for tritium production devised by DOE, which is also expected to invite other commercial light-water reactors to participate in its program.

Under the terms of a Joint DOE/NRC memorandum of Understanding of May 22, 1996, NRC is providing review and consultation services to assist DOE in assessing and resolving technical and licensing issues associated with the tritium production program. Earlier this year, DOE submitted a report to the NRC that the staff reviewed to determine whether the use of a commercial light-water reactor to irradiate a limited number of tritium-producing absorber rods raises issues requiring NRC review and approval.

As a result of its review of the DOE report, the NRC staff has determined that further study is required regarding the consequences of off-site radiological releases during some accident scenarios. These consequences are not believed to be significant. Also, the staff has determined that there are plant specific issues that must be addressed by TVA and any other NRC licensee wishing to participate in the DOE program by submitting a license ammendment request to the NRC. Watts Bar currently has a license ammendment request before the Commission and the NRC will meet with TVA officials today to discuss this.

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