

TVA Recognized for Nuclear Fuel Inspection Program

The Nuclear Energy Institute has presented TVA with a special recognition award for the “vision and leadership demonstrated” in its inspection program for nuclear fuel assembly. “The inspection program has contributed to improvements in fuel reliability in our reactors,” says TVA Chief Nuclear Officer Bill Campbell. “This is a good example of our employees using their creativity and teamwork to improve the performance of TVA’s nuclear-power plants with better processes and programs. This application was also recognized as one of TVA’s strengths by the Institute of Nuclear Power Operations in its most recent review of nuclear reliability at TVA.”

A program developed by a team of TVA employees for inspecting fuel assemblies to identify potential problems before their reuse in a nuclear reactor resulted in the NEI recognition. Each fuel assembly in a nuclear reactor is used for up to three operating cycles before it is depleted of useful energy. After moving fuel assemblies from the reactors to a storage pool, nuclear engineers visually inspect used fuel assemblies before reloading them into the reactor. They use a high-resolution underwater camera system to inspect the fuel.

Each assembly is evaluated for unacceptable conditions, such as the presence of structural defects, presence of foreign material or other unusual conditions. This fuel-inspection program is the most comprehensive program used in the nuclear industry today. Four TVA nuclear engineers developed the fuel-inspection program. Watts Bar Nuclear Plant’s Dale Greer of Knoxville; Browns Ferry Nuclear Plant’s Mike Keck of Decatur, AL and Nuclear Corporate employees Jim Lemons and Greg Kniedler, both of Chattanooga, worked as a team to develop the inspection program. They sought to develop an efficient program to inspect these fuel assemblies to identify and correct these defects. “Using technology and improved processes such as these are enhancing safety and potentially saving millions of dollars by helping avoid unscheduled outages due to fuel problems,” says Campbell.