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NRC STAFF ASKS PRESSURIZED WATER REACTOR  
OPERATORS TO PROVIDE STEAM GENERATOR TUBE DATA

The Nuclear Regulatory Commission staff has requested operators of pressurized water nuclear reactors to submit information on steam generator tube experience that justifies continued operation until their next scheduled inspection.

Within 60 days, plant operators have been asked to:

- 1) Evaluate recent steam generator tube inspection findings at the Maine Yankee nuclear power plant dealing with detecting and sizing circumferential cracks and determine whether the experience applies to their plant;
- 2) Develop a safety assessment of past inspection results on susceptibility to circumferential cracking, detection and expected or inferred crack growth rates to justify continued operation; and
- 3) Develop and describe plans for the next inspection of steam generator tubes for detecting any circumferential cracking.

The action by the NRC staff comes after a series of steam generator tube tests at the Maine Yankee plant near Wiscasset, Maine. The operator, Maine Yankee Atomic Power Company, shut down the plant in July last year to conduct tube tests for leakage and degradation by using a special motorized rotating probe to look inside a tube for cracks. The probe found circumferential cracks in approximately 300 tubes.

After about six months of operation, the licensee conducted a second inspection of the steam generators and detected many more tubes with circumferential cracking. Further examination of three tubes that had been removed confirmed that they had circumferential cracks with maximum depths of 37 percent, 45 percent and 57 percent respectively.

Tubes with circumferential cracks are typically removed from service by plugging or repaired by sleeving. Sleeving involves placing a smaller tube into a flawed tube to span the defect. The sleeve ends are then attached to the wall of the parent tube.

While a pressurized water reactor is in operation, thousands of tubes in a steam generator receive heated water under pressure from the reactor so that it does not boil. A second system of water entering the steam generator flows over those heated tubes and, in turn, becomes steam which is carried away by pipes to spin the turbine generator blades to make electricity.

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