

N381. Possible Westinghouse Tube Plug Cracks Could Lead To Replacement Order

The discovery of possible cracks-as much as a decade before predicted-in a particular heat of Westinghouse mechanical steam generator tube plugs could lead to utilities having to repair or replace thousands of "the most resistant heat" of alloy 600 plugs much sooner than anticipated. But the discovery of the possible cracks at Florida Power & Light Co.'s St.Lucie-1 during its recent refueling outage raised questions about Westinghouse calculations on estimation of the tube plug life. A plug failure at Virginia Power's North Anna-1 ruptured a tube in 1989 and prompted NRC to issue a bulletin requiring licensees to repair or replace about 6,300 alloy 600 plugs of a similar type. In 1991, NRC issued a bulletin supplement requiring licensees to stop using all Westinghouse alloy 600 tube plugs and to repair and replace those already in use as their estimated lifetimes approached an end. If the St. Lucie-1 discovery is confirmed to be stress corrosion cracking of the plugs, it means Westinghouse's calculation for plug life was off by a decade of more on the alloy 600 plugs considered the most resistant to cracking. Florida power & Light Co. reported finding 15 leaky alloy 600 steam generator tube plugs. The plugs are made of "the most resistant heat" of alloy 600 and were expected to last into the next century. The implication is that alloy 600 plugs have a substantially shorter-than-predicted life and that replacement will require an accelerated schedule for all similar plugs. will require an accelerated schedule for all similar plugs, regardless of heat number.

Taken from, "Possible Westinghouse Tube Plug Could Lead to Replacement Order," pp.6-7, Inside NRC, December 1994.