

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 27, 1987

Mr. Lester S. Rubenstein
PWR Project Directorate No. 2
Division of PWR Licensing-A
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Rubenstein:

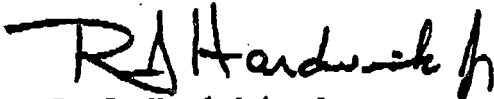
Per our conversation on January 15, 1987, attached are the responses to your questions regarding the piping inspections and replacement at each of our nuclear power stations.

Questions

- A. How many points did we inspect?
- B. Where were the inspections?
- C. How were they inspected?
- D. How many pipe sections did we replace?

If you have any further questions, please contact us.

Very truly yours,



R. J. Hardwick, Jr.

~~87-242-729~~

Surry Unit 1

- A. Over 550 components have been inspected. Each segment of pipe between fittings, and each elbow, wye, tee, and reducer is considered a component.

A typical pipe tee has over 500 inspection points around the circumference and along the length of the joint. Elbows have nearly 100 inspection points each. Straight piping runs are inspected at 3, 6, 9, and 12 o'clock at several locations along their lengths.

Subsequently, over 100,000 inspections have been made on Surry Unit 1 piping.

- B. Inspections included the majority of the condensate and feedwater piping components from the 4th point feedwater heaters to the main feedwater regulating valves, the feedwater recirculation lines, 1 of the 3 main feedwater lines to the containment penetration, and another main feedwater line to the steam generator. Also inspected were selected components of the:

Condensate piping between the 6th point and 4th point feedwater heaters.

Extraction steam and main steam piping.

Steam generator blowdown piping to the pressure control valves and, "B" train inside containment and outside containment to the coolers.

Auxiliary feedwater piping, the 3A pump discharge piping to the header and the pump recirculation line to the orifice area.

Charging pump (stainless steel) piping, the discharge header to the flow control valve.

Possible additional inspections may be made on selected components of the charging letdown piping to the orifice off the regenerative heat exchanger and additional components in the steam generator blowdown piping.

- C. Pipe wall thickness on Unit 1 piping was determined by the ultrasonic method of non-destructive testing.
- D. Approximately 5% of the total piping components inspected were below our acceptance criteria for minimum wall.

In some cases, the components which required replacement due to pipe wall thinning were separated by short runs of pipe or by piping components that would require replacement next refueling. So, in those cases the separating components would also be replaced for construction convenience.

Of the 550 components inspected, approximately 50 components (less than 10%) are being replaced.

Surry Unit 2

- A. Similar to the inspections performed on Surry Unit 1, over 550 components are scheduled to be inspected on Unit 2. Thus far, approximately 200 of those components have been inspected. Not counting the points examined on the ruptured pipe, over 35,000 inspections have been made on Unit 2 piping.
- B. The scope of piping to be inspected is the same as that listed for Surry Unit 1.
- C. Pipe wall thickness was determined by the ultrasonic method of non-destructive testing.
- D. Of the 200 components thus far inspected, approximately 33 components are being replaced.

North Anna Unit 1

- A. Approximately 4,900 inspection points were examined, and all locations were above the minimum pipe wall thickness required. Additional piping inspections will be performed during upcoming outages.
- B. These inspections were performed on the main feedwater pump suction piping and header and on the high pressure heater drain pump discharge piping.
- C. The piping was inspected by using the ultrasonic method of non-destructive testing.
- D. The piping was determined not to need replacement.

Worth Anna Unit 2

- A. Because Unit 2 has operated fewer hours than Unit 1 and because of the favorable results of the Unit 1 inspections, it was determined no inspections were required on Unit 2 until the next refueling outage.
- B. N/A
- C. N/A
- D. N/A