

Nebraska Public Power District

GENERAL OFFICE
P.O. BOX 499, COLUMBUS, NEBRASKA 68601-0499
TELEPHONE (402) 564-8561

NLS8400159

June 4, 1984

Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Eisenhut:

Subject: Response to Generic Letter 84-11 (Inspection of BWR Stainless Steel Piping)

- Reference:
- 1) Generic Letter 84-11 dated April 19, 1984.
 - 2) Letter D. B. Vassallo to L. G. Kuncel dated September 1, 1983, with enclosures of Safety Evaluation and Confirmatory Order.

This letter is in response to Reference 1, which requested all BWR operating reactor licensees to furnish their plans relative to inspections for IGSCC and interim leakage detection. Reference 2 issued a confirmatory order modifying the limiting conditions for operation and surveillance requirements for monitoring coolant leakage in the Technical Specifications. The confirmatory order stated these enhanced surveillance measures will provide adequate assurance that possible cracks in pipes will be detected before growing to a size that will compromise the safety of the plant. Nebraska Public Power District (NPPD) believes the requirements imposed by the confirmatory order meets the intent of leak detection and leakage limits stated in Reference 1 and that no additional actions are required at this time.

NPPD is planning to replace the recirculation and various other system pressure boundary piping during the refueling outage planned for October, 1984, and believes this supercedes the requirement for reinspection of IGSCC in the piping that will be replaced. The confirmatory order of Reference 2 required that the District submit "plans for corrective actions and/or modifications, including replacement of the recirculation and other reactor cooling pressure boundary during the next refueling outage." The District will replace the following stainless steel piping, safe ends, and piping components:

- A. Reactor Recirculation Piping System within the Drywell including inlet and outlet safe ends and inlet nozzle thermal sleeves.

- B. Reactor Water Cleanup System Piping from the Residual Heat Removal Suction Piping to the first valve outside containment (RWCU-MOV-18MV), including penetration steel.
- C. Both Core Spray lines from the reactor vessel nozzle to the first isolation valve in containment (CS-V-14A, CS-V-14B). This includes the Core Spray safe ends and thermal sleeves.
- D. Residual Heat Removal suction and discharge piping inside the Drywell from the Reactor Recirculation system to the first isolation valves. (Suction valve: RHR-V-88 and Discharge valves: RHR-V-81A and RHR-V-81B.)
- E. Two Reactor Recirculation Jet Pump Instrumentation Seals and Safe Ends.
- F. One Core Delta P/Stand-by Liquid Control Reactor Vessel Nozzle safe end.
- G. Select Small Bore Piping in the Drywell.

To facilitate this modification, the Drywell air handling units and a number of interferences will be removed and reinstalled as required during the pipe replacement activities. The insulation will be removed and replaced or reinstalled as required for these piping systems.

The existing piping was redesigned to eliminate as many fittings as possible by utilizing bent pipe in order to reduce the number of welds and decrease the number of Inservice Inspections (ISI). In addition, the number of pipe supports were reduced, the Reactor Recirculation four-inch bypass lines will be removed, and the existing Reactor Recirculation nozzle flow elements will be replaced with venturi flow elements.

The replacement piping will be Type 316 nuclear grade stainless steel material with 0.02 percent carbon and nitrogen added to meet the strength requirements of Type 316. This material is an acceptable replacement material as stated in NUREG-0313 Revision 1. All of the piping material (including shop welds) will be solution heat treated to further minimize the possibility of IGSCC. The piping end preparations for the field welds have been closely evaluated and the heat input will be closely controlled to again minimize the possibility of IGSCC.

Major consideration has been given to reducing the radiation exposure to workers to as low as reasonably achievable (ALARA) levels in the piping replacement program. This includes the following:

- A. Chemical decontamination of the existing piping. The pumps and the valves will be hydrolazed as required.

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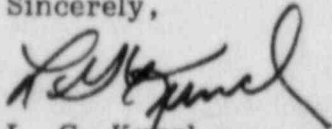
- B. In vessel work will consist of removing appropriate control rods, installing drains and standpipes, and monitoring the water level with appropriate instrumentation. Shielded plugs internal to the vessel will be used in the Reactor Recirculation outlet nozzles.
- C. Shielding external to the vessel will be used in appropriate areas such as in the openings of the biological shield walls, around pumps and valves, etc.
- D. Mockups will be performed with shielding in place.
- E. Work areas will be well marked and the work sequence will be optimized to reduce exposure time.
- F. Appropriate ventilation of the Reactor Pressure Vessel and Drywell area will be maintained.
- G. The piping redesign will also lower the radiation exposure since the improvements will reduce the time required to remove and install the hardware.
- H. An equipment pool gate will be installed. The pool will be flooded when the equipment is removed to lower the radiation exposure on the 1001' level of the Reactor Building.

A detailed ALARA program will be submitted to the NRC approximately July 15, 1984, in accordance with Generic Letter 84-07 dated March 14, 1984.

The new piping and piping components are being purchased in accordance with the 1983 Edition of ASME Section III including Summer Addenda. The existing pumps and valves will be reused. A baseline ISI program will be implemented and the new system will be hydrostatically tested in accordance with the requirements of ASME Section XI.

Should you have any further questions regarding this issue, please contact me. Our NRC Project Manager has tentatively scheduled the week of July 9, 1984, in order for the District to meet with the staff and discuss our replacement program.

Sincerely,



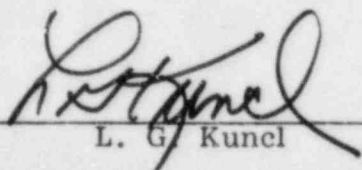
L. G. Kunch

Assistant General Manager - Nuclear

LGK/jdw:kr4/4(LQAC4)

STATE OF NEBRASKA)
) ss
PLATTE COUNTY)

L. G. Kuncel, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this information on behalf of Nebraska Public Power District; and that the statements contained herein are true to the best of his knowledge and belief.



L. G. Kuncel

Subscribed in my presence and sworn to before me this 4th day of
June, 1984.



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