CENTRAL FILES

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August 24, 1979

Mr. Boyce H. Grier, Director
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, PA 19406

Subject: I & E Bulletin 79-17 Thirty (30) Day Response
R. E. Ginna Nuclear Power Plant, Unit 1
Docket No. 50-244

Dear Mr. Grier:

In accordance with the requirements of I & E Bulletin 79-17, we have prepared a thirty (30) day response on the stagnant borated water systems at R. E. Ginna Nuclear Power Plant, Unit 1. Stagnant portions of systems that are accessible during normal reactor operation, where surface and volumetric examinations have not been previously performed, shall be examined within the next sixty (60) days in accordance with the requirements of Item 2 of the Bulletin.

If you have any further questions do not hesitate in contacting us.

Very truly yours,

L. D. White, Jr.

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AEC:dmaF4

xc: Director
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R. E. Ginna Nuclear Power Plant, Unit 1
Docket No. 50-244
Thirty (30) Day Response to I & E Bulletin 79-17
Pipe Cracks in Stagnant Borated Water Systems at PWR Plant
August 24, 1979

1. The following safety related stainless steel piping systems as delineated by the Rochester Gas & Electric Corporation Quality Assurance Manual contain stagnant oxygenated borated water.

   a. Safety Injection System - This includes the Safety Injection (SI) Pump suction from the Boric Acid Storage Tanks and the SI Pumps discharge from valves 888A&B and 871A&B to the Reactor Coolant System Loops A & B Hot and Cold Legs.

   b. Containment Spray System - This includes the Containment Spray Pumps discharge from valves 868A&B to the spray piping inside containment at the elevation of the Charcoal Dousing System check valves.

   c. Residual Heat Removal System - This includes the Residual Heat Removal Pumps suction from the Reactor Coolant System Loop A Hot Leg and Containment Sump B and the RHR pumps discharge after the RHR Heat Exchangers to the suction of the SI Pumps, from Penetration P-111 to the Reactor Coolant System Loop B Cold Leg and the Safety Injection Nozzles on the Reactor Vessel. Also from the discharge piping are branch connections for the Residual Heat Removal sample and to the Letdown system.

   d. Chemical & Volume Control System - This includes the portion of this system which provide flow paths for boric acid from the Boric Acid Storage Tanks to the Charging Pump suction through valves V-350 and V-356.

   e. Refueling Water Circulating System - This includes piping from the Letdown System to valves V-820 and V-821.

   f. Reactor Coolant System - This includes only the Pressurizer Code Safety Valve loop seals.

1a. System pressure tests (hydro) and visual examinations in accordance with the ASME B&PV Code 1974 Edition Section XI Article IWA-5000 have been performed for all systems identified above. The following is a listing of these systems and the date of the tests.

   a. Safety Injection System: *

Suction piping	5/13/77
Discharge piping	5/6/77

b. Containment Spray System:

Suction piping (including NaOH)	5/13/77
Discharge piping	5/16/77

c. Residual Heat Removal: *

Suction piping	3/5/79
Discharge piping (including sample piping)	3/5/79
Tie-in to the Letdown System	5/7/77

d. Chemical & Volume Control System:

Immediate borate paths V-350 and V-356	3/18/76

e. Refueling Water Circulating System:

Suction (letdown to V-820)	5/7/77
Discharge (V-821 to letdown)	5/7/77

f. Reactor Coolant System:

Pressurizer Safety Valve Loop Seals	4/29/78

* NOTE - Those portions of these systems which tie in to the Reactor Coolant System (RCS) were isolated from the RCS during their hydrotest. The remaining piping to the RCS was hydrotested during the RCS hydrotest on 4/29/78.

In accordance with the Inservice Inspection Program found in Rochester Gas and Electric's Quality Assurance Manual, Appendix B, which meets the requirements of 10CFR50.55a(g), surface and volumetric examinations have been performed on the Safety Injection System, Residual Heat Removal System and the Pressurizer Safety Valve loop seals. Surface and volumetric examinations are not performed on the Containment Spray System, Chemical and Volume Control Systems, the Refueling Water Circulating System and portions of the Safety Injection System for the following reasons:

a. Containment Spray Systems - This portion of the system are exempted components as allowed by the ASME B&PV Code 1974 Edition Section XI Articles IWC-1220.

b. Chemical & Volume Control System - The portions of this system are exempted components as allowed by the ASME B&PV Code 1974 Edition Section XI Articles IWC-1220 and are not within the scope of Article IWD-2600.

c. Refueling Water Circulating System - The portions of this system are not within the scope of the ASME B&PV Code 1974 Edition Section XI Article IWD-2600.

d. Safety Injection System - The portions include the 3" and 4" discharge piping which are exempted components by the ASME B&PV Code 1974 Edition Section XI Article IWC-1220.

The following is a summary of inservice inspection, visual, surface and volumetric examinations performed on the Safety Injection System, Residual Heat Removal System and the Pressurizer Safety Valve Loop Seals within the 10 year period from 1970 to 1979. These examinations have been categorized by low pressure/high pressure (suction/discharge) and by pipe size.

a. Safety Injection

	Visual	Surface and Volumetric
Low Pressure:		
8"	20 welds	65 RT's, 85 welds UT's
10"	1 weld	9 welds
High Pressure:		
2"	13 welds	1 weld

b. Residual Heat Removal:

	Visual	Surface and Volumetric
Low Pressure:		
6"	0	2 welds
8"	1 weld	3 welds
10"	14 welds	28 welds
High Pressure:		
4"	0	2 welds
6"	4 welds	15 welds
8"	1 weld	11 welds
10"	3 welds	12 welds

c. Pressurizer Safety Valve Loop Seals:

Safety Line	Visual	Surface and Volumetric
4"	3 welds	5 welds

These inservice examinations were conducted in accordance with the ASME Boiler and Pressure Vessel Code July 1, 1974, Editions of Sections V and XI through the Summer 1975 Addenda. This would include the procedure qualification requirements and acceptance criteria. However, on October 8, 1976 a leak was detected in a section of 8" Schedule 10 stainless steel pipe as reported in LER 76-24 on October 11, 1976. This leak resulted in ultrasonic examination being performed on 75 welds in the affected system. The procedures and techniques used were qualified and verified on cracked piping which had been removed from service and utilized as a test mock-up. Several other welds in related systems were also examined with no further problems found.

Corrective action on the cracks found both from leakage and ultrasonic examinations were listed in LER 76-24 on October 11, 1976 and supplemented reports on October 22, 1979, December 21, 1976, February 10, 1977 and June 8, 1977.

1b. Certain portions of those system identified above are intermittently stagnant and are recirculated on a monthly basis or have flow occuring on a quarterly basis with water from the Refueling Water Storage Tank. These systems are as follows:

a. Safety Injection System - This includes the suction from the Refueling Water Storage Tank through the SI Pumps to the Refueling Water Storage Tank, which is recirculated on a monthly basis.

b. Containment Spray System - This includes the suction from the Refueling Water Storage Tank through the CS Pumps to the Refueling Water Storage Tank, which is recirculated on a monthly basis.

c. Residual Heat Removal System - This includes the suction from the Refueling Water Storage Tank through the RHR Pumps and RHR Heat Exchangers to the Refueling Water Storage Tank, which is recirculated on a monthly basis.

d. Chemical & Volume Control System - This includes the piping from the Refueling Water Storage Tank through valve AOV-112B to the suction of the Charging Pumps. which receives flow during the quarterly testing of AOV-112B.

Chemistry controls for the Refueling Water Storage Tank and the Boric Acid Storage Tanks follows:

a. Refueling Water Storage Tank (RWST):

The chemistry of the RWST is controlled by use of the spent fuel pit demineralizer. Prior to and after each refueling the RWST is normally recirculated to bring the C1 & F within specification. The Westinghouse specifications were 0.5 ppm C1 and 0.15 ppm F. The new limits are 0.15 ppm for both C1 & F. We have normally been within limits for F but occasionally the 0.5 ppm limit for chloride has been exceeded. Oxygen in the RWST is not sampled and there are no concentration requirements. The RWST is open to atmosphere and therefore will absorb oxygen, so a concentration specification is meaningless. Boron is maintained between 2000 - 3000 ppm and sampled monthly.

b. Boric Acid Storage Tanks:

Chloride, Flouride, Oxygen and pH are not normally sampled for on the storage tanks. The only control for these impurities is by demineralization of all processed boric acid (mixed bed and cation D.I.'s). Boron concentration is checked three times per week. Modifications previously completed to increase recirculation of these tanks has been forwarded to the NRC under LER 76-24. Reference item 1d of this bulletin response.

1c. Preservice nondestructive examinations performed on the weld joints of these piping systems was volumetric utilizing radiographic examinations. These examinations were performed by the M. W. Kellogg Co. during spool piece shop fabrication and by Pittsburgh Testing Laboratories during field installation. All radiography was performed in accordance with the American National Standard Code for Pressure Piping ANSI B-31.1.

1d. Rochester Gas and Electric Corporation reported to the USNRC on October 8, 1976 by Licensee Event Report 76-24, information regarding cracks in the Safety Injection Piping between the Boric Acid Storage Tanks and and the Safety Injection Pump. Supplemental reports were forwarded to the NRC on 11/11/76, 11/22/76, 2/10/77 and 6/8/77 regarding LER 76-24. Also on 12/21/76, RG&E provided the NRC with response to I&E Circular 76-06. All corrective actions performed as a result of LER 76-24 and I&E Circular 76-06 are included in these correspondences.