



MAINE YANKEE ATOMIC POWER COMPANY •
ENGINEERING OFFICE

TURNPIKE ROAD (RT. 9)
WESTBORO, MASSACHUSETTS 01581
617-366-9011

B.4.2.1
WYM 79-82

August 22, 1979

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Mr. Boyce H. Grier, Director

- References:
- (a) License No. DPR-36 (Docket No. 50-309)
 - (b) USNRC IE Circular 76-06 dated November 24, 1976
 - (c) MYAPC letter to USNRC dated December 22, 1976
(WYM 76-140)
 - (d) USNRC letter to MYAPC dated July 26, 1979
I&E Bulletin 79-17

Dear Sir:

Subject: Response to I&E Bulletin 79-17

The following information is being submitted in response to USNRC I&E Bulletin 79-17. The responses are numbered corresponding to the bulletin paragraph numbers.

1. The safety related stainless steel piping systems at Maine Yankee which contain stagnant oxygenated borated water are low pressure safety injection, high pressure safety injection, containment spray, residual heat removal, and reactor coolant loop fill and drain system.
 - 1.a The following is a break down of the visual, volumetric, examinations, and hydrotests performed as a response to Circular 76-06.
 - 1.a.1 Hydrotests were performed on the following systems to Plant Procedure No. 4-38. This procedure includes a hydrotest pressure equal to operating pressure and in compliance with IWA-5000 of ASME Section XI.

LPSI - The hydrotest included the lines from the RWST to the suction of the LPSI pumps, including the vent lines off the pumps and the discharge and recirculation lines up to the safety injection isolation valves.

HPSI - The hydrotest included the lines from the RWST and Boric Acid transfer pumps to the suction

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of the HPSI pumps, exclusive of the VCT system and the HPSI charging pump discharge to the HPSI isolation valves, exclusive of the VCT system.

CONTAINMENT SPRAY - The hydrotest included the lines from the RWST to the CS pumps including the vents, and the discharge and recirculation lines through the RHR heat exchanger up to the CS spray isolation valves.

RHR - The RHR system hydrotest is part of the shutdown procedures of the plant. The RHR system was operated at RHR system pressure and visually examined prior to the 1977 Refueling Outage.

In all cases no evidence of leak was detected. The details of these examinations are on file at the plant site.

The following welds were examined volumetrically. The welds sampled were selected on the basis of highest stresses per the Stone & Webster stress analysis drawings.

<u>Line</u>	<u>Method</u>	<u>Node Pt. Corresponding to Weld</u>
10"-SIH-42-1504	UT	pt. 35
10"-RH-11-302	UT	pts. 59, 60, 48, 49 (50)
10"-CS-23-152	UT	pt. 160
10"-CS-22-152	UT	pt. 266
14"-RH-1-302	UT	pts. 28, 30
10"-RH-28-302	UT	pt. 619 (618)
10"-RH-27-302	UT	pt. 519 (518)
16"-CS-40-152	UT	pt. 168
16"-CS-13-152	UT	pt. 199
9 lines		15 welds

The volumetric examinations were performed using Yankee Atomic Procedure YA-UT-10. This procedure complies with Appendix III of the Summer 76 addenda to ASME Section XI 1974 Edition. Acceptance criteria are based on the acceptance criteria of BF, BJ IWB 3000, of the same edition and addenda. The exceptions to this procedure were a scan area of 6 "T" on either side of the weld where accessible. The examination results showed no evidence of unacceptable indications. There was no corrective

action taken.

- 1.b. Borated water used in various plant systems is made up using Primary Grade demineralized water. This water is required to meet the following chemistry specifications:

pH.5.5 to 8.5
Conductivity.	0.5 umho/cm
Cl ⁻	0.05 ppm
Fl ⁻	0.1 ppm
Silica.	0.05 ppm
TDS	0.5 ppm

Additional samples to determine actual boron concentrations are performed periodically on various systems dependent upon the operational requirements of the specific system.

Present plant procedures require the recirculation and sampling of a number of line sections or systems (e. g. LPSI and HPSI) containing potentially stagnated borated water to verify the existing boron concentration prior to establishing safeguards requirements. Additionally, prior to placing the RHR system into operation, the system is recirculated and its boron concentration verified to assure it is equal to or greater than the existing RCS concentrations. No additional flushing, recirculation or sampling of these line sections or systems is currently performed.

- 1.c. Maine Yankee has never performed perservice of NDE of any class 2 or 3 systems. However, we will incorporate class 2 and 3 systems in the ISI program beginning at the next refueling outage after September 1, 1979.

Construction of the piping systems was to ANSI B31.1.0 Code for Power Piping. Special requirements for NDE were defined in Stone & Webster Specifications MYS-442. Appropriate excerpts are included below.

1.c.1 Piping Groups

All piping systems selected for special quality assurance requirements are contained in the following designated groups, as dictated by the service and operating condition:

<u>Group</u>	<u>Designation</u>
R1	Austenitic stainless steel primary

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plant piping for 600 psi and higher operating pressure, and both stainless steel and carbon steel low pressure piping for radioactive gas.

- R2 Austenitic stainless steel primary plant piping for less than 600 psi operating pressure
- R3 Specially selected and designated portions of ferritic piping for safeguard systems, such as component cooling.

1.c.2 Nondestructive Testing

The requirements for nondestructive testing for each piping group are shown in the following table:

	<u>Group R1,</u> <u>Percent</u>	<u>Group R2,</u> <u>Percent</u>	<u>Group R3,</u> <u>Percent</u> (See Note 3)
<u>Radiography</u>			
2½" and larger girth welds (See Note 1)	100	20	20
2½" and larger branch connection nozzle welds (See note 2)	100	20	20
Longitudinal weld of welded pipe and fittings	100	100	100
<u>Dye Penetrant Check</u>			
2½" and larger finished girth welds and root beads	100	100	100
Socket weld	100	100	100

2½" and larger Weldolet or nozzle weld	100	100	100
Socket attachment weld	100	100	100
Finished longitudinal weld of welded pipe and fittings	100	100	100

1.c.3 Radiographic Acceptance Standards

Radiographic acceptance standards for welds shall be those of Paragraph PW51.11 of Section I of the ASME Boiler and Pressure Vessel Code.

Sampling Procedure for the Partial Radiography in Groups R2 and R3

A number of welds shall be selected by the fabricator's or erector's inspector and designated as a "unit". The unit may consist of the welds in a complete system, a piping run, several fabricated pieces, or other subdivision of a piping system. The unit shall preferably be small and consist of (say) 10 to 15 welds. Twenty percent of each unit of welds shall be radiographed. If no defects are found requiring repair, the unit can be accepted. If repairs are required, a second 20 percent of the welds in this unit shall be radiographed. If the second 20 percent require no repair, the unit can be accepted. Continuing in this manner, if a third 20 percent are rejected, 100 percent radiography of the welds in the unit is required.

If, during the above sequence, 20 percent of the welds in a unit are found to require repair, 100 percent radiography is required for the unit.

Sampling shall cover the work of different welders. If more than one welder has worked on a "unit", the successive sampling required above in the case of defective welds shall apply only to the product of the welder responsible for the nonacceptable welds.

- 1.d No cracking has been experienced by Maine Yankee. This report is submitted in compliance with item 5 of Bulletin 79-17.

Additional information is also being submitted concerning paragraph 2 of the subject Bulletin and is as follows:

2. Beginning on September 1, 1979, Maine Yankee will shutdown for a one (1) month maintenance outage. During this time, Maine Yankee will perform the work described in paragraph 2 and will perform the visual examinations as required by paragraph 2.a. In addition, ultrasonic examinations as required by and to the extent of paragraph 2.b. will be conducted. The examinations will be performed using a procedure developed for detection of IGSCC. This procedure uses as its basis the EPRI/SwRI procedures for detection of IGSCC including dual element, zone discriminating search units. The procedure also complies with ASME Section XI Appendix III.

Maine Yankee will perform liquid penetrant exams of socket welds or welds which cannot be scanned ultrasonically using at least a 1 and $\frac{1}{2}$ vee path. This scan must include the base metal $\frac{1}{2}$ " from the pipe I.D. A 2 "vee" path shall be considered acceptable from one side of a pipe to fitting weld when it can be shown the exam area is covered.

If you have any questions, please contact Jack Lance at Yankee Atomic Electric Company, Westboro, Massachusetts (617) 366-9011 extension 3186.

Very truly yours,

MAINE YANKEE ATOMIC POWER COMPANY

E. Jackson for
D. E. Moody
Manager of Operations

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