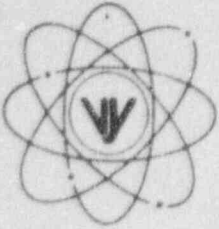


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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REPLY TO  
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December 1, 1995  
BVY 95-126

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

- References:
- a. License No. DPR-28 (Docket No. 50-271)
  - b. USNRC Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2 and 3 Piping", NVCY 90-119, dated 6/15/90

Subject: Temporary Non-Code Repair of Service Water Piping

In accordance with Generic Letter 90-05 and 10CFR50.55a(g)(6)(i) this letter is being submitted to document actions taken by Vermont Yankee to evaluate a small leak in the Service Water piping at the Vermont Yankee Nuclear Power Station, and to request relief from the requirement to perform an immediate code repair.

On November 2, 1995, during a routine tour of the plant, the Operations Department reported minor leakage from a 1.5 inch service water line located in the Intake Structure. The leak rate is approximately 1 drop every 10 minutes. The leak is located in a 1.5 inch diameter, 2.5 inch long spool piece upstream of valve V70-27 in the Safety Class 3 portion of the piping which is used to maintain a static pressure in the fire water system when the fire water system is in standby. Attempts to isolate and repair the leak were unsuccessful due to a small amount of leakage past the isolation boundary valves. See Figure 1 (attached) for identification of the leak location.

The leak is in a moderate energy, Safety Class 3 pipe which has a design pressure of 125 psig and design temperature of 32°F to 85°F. The piping is 1.5 inch, schedule 80 carbon steel with a nominal thickness of 0.2 inches. The code-required minimum wall thickness for this piping is 0.008 inch.

Ultrasonic examination (UT) of 100% of the surface of the 2.5 inch length of pipe between fittings containing the leak was performed. The inspection data indicate pipe wall thinning with a remaining wall thickness ranging from 0.045 inch to 0.075 inch over approximately a 0.5 inch radius around the leak. The data characterizes the leak as a localized "pitting" type flaw which appears to be indicative of microbiologically induced corrosion (MIC). Vermont Yankee

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recently implemented a service water chemical treatment program to mitigate the effects of this corrosion mechanism.

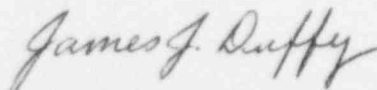
The inspection data for the remaining 2.5 inch long pipe surface indicate that the pipe wall thickness ranges from 0.1 inch to 0.19 inch with the exception of an additional localized flaw with a remaining wall thickness ranging from 0.069 inch to 0.072 inch. This additional localized flaw was of sufficient distance from the leak location so as not to require connecting them for analytical purposes.

A local flaw evaluation was performed in accordance with reference (b). The through-wall flaw evaluation approach was used to calculate the allowable flaw size. This evaluation resulted in a single allowable flaw size of 0.375 inch in diameter, which bounds the UT data described above. In addition, a piping analysis was performed which conservatively modeled the remaining safety class portion of this line using a reduced wall thickness of 0.1 inch. The piping stresses met acceptance criteria.

The effect of the leak on service water system performance was assessed. Given the low leak rate, the leak will not affect the ability of the service water system to provide adequate flow to essential components during all modes of system operation. In addition, the leak is not within the alternate cooling system boundary and therefore does not impact the operability of the alternate cooling system. Therefore, the effects of the leak on service water system performance are deemed acceptable.

In summary, engineering evaluations have demonstrated that the structural integrity of the piping system remains unaffected in the as-found condition. To ensure that the structural margin of the pipe is not reduced below an acceptable limit, Vermont Yankee will perform UT inspections once every three months until a wall loss rate can be established which supports less frequent inspection of the leak area. Also the effects of the leak on service water system performance are deemed acceptable. Therefore, Vermont Yankee concludes that relief from immediate code repair will present no undue risk to the health and safety of the public. We request that the NRC grant relief to allow deferral of a code repair until no later than startup from the next refueling outage, currently planned for September 1996.

Sincerely,  
VERMONT YANKEE NUCLEAR POWER CORPORATION

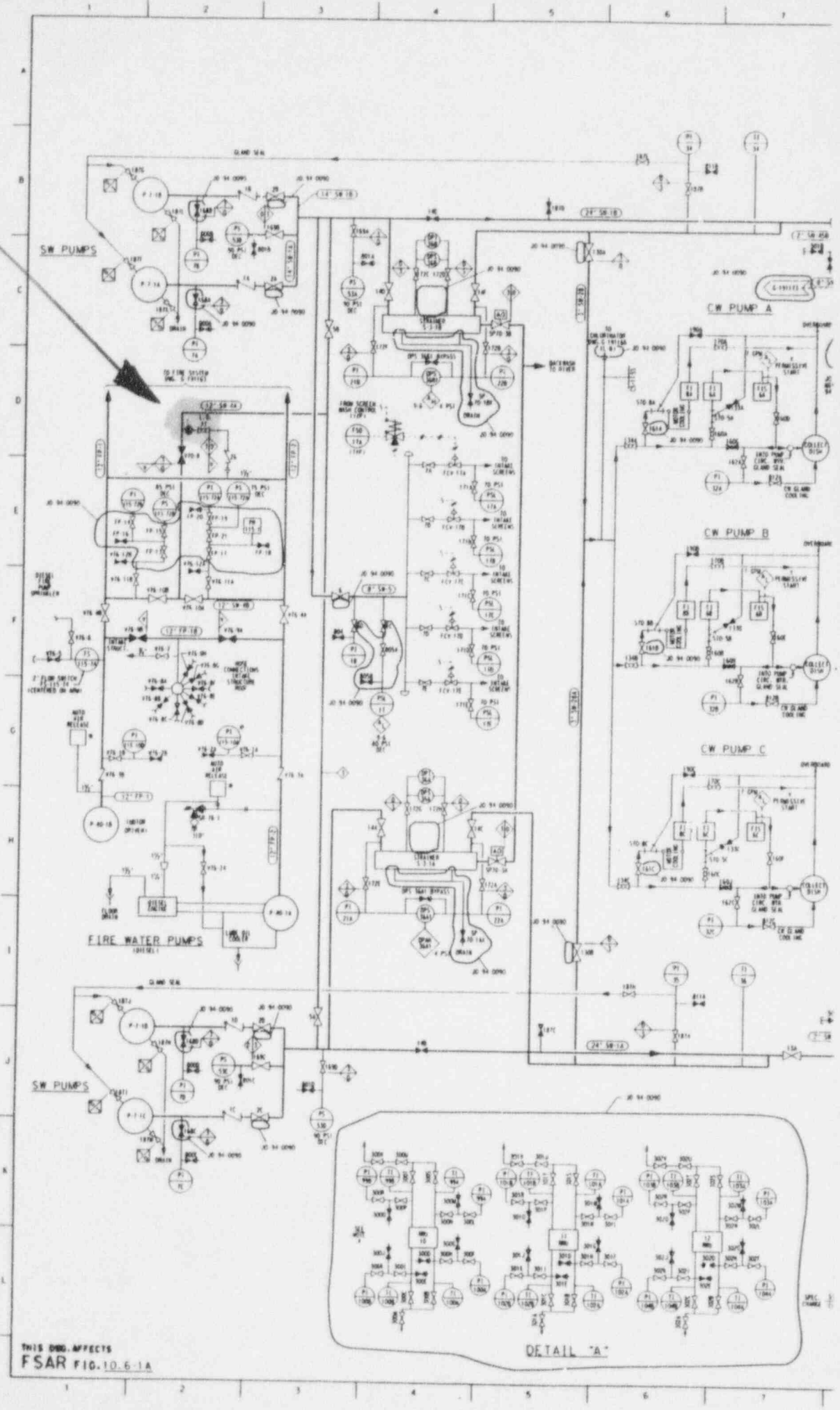


James J. Duffy  
Licensing Engineer

c: USNRC Region I Administrator  
USNRC Resident Inspector - VYNPS  
USNRC Project Manager - VYNPS

Figure 1  
BVV 95-126

FOR REFERENCE ONLY



THIS DWG. AFFECTS  
FSAR FIG. 10.6-1A

DETAIL "A"