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SUBJECT: Forwards relief request 2ISI-16 for temporary non-code repair of standby svc water piping per GL 90-05.

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September 27, 1995

GO2-95-200

Docket No. 50-397

U.S. Nuclear Regulatory Commission

Attn: Document Control Desk

Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
RELIEF REQUEST FOR TEMPORARY NON-CODE REPAIR PER
GENERIC LETTER 90-05 OF STANDBY SERVICE WATER PIPING**

- References: (1) NRC Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping" dated June 15, 1990
- (2) Internal NRC memorandum dated August 16, 1990, from James E. Richardson, "Follow-up on Generic Letter 90-05 Regarding Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping"

This letter submits for NRC approval relief request 2ISI-16. In accordance with Generic Letter 90-05 (Reference 1) and 10CFR50.55a(g)(6)(i), we request relief from performing an immediate Code repair of a small leak in the ASME Section III, Code Class 3 standby service water system (SW) loop A at WNP-2. The relief request is provided as Attachment 1.

A through-wall flaw was discovered during a system line up by an equipment operator in the SW piping. A rubber gasket, clamped over the flaw, has been installed for housekeeping purposes (Reference 2). To perform a repair per the requirements of ASME Section XI would require the system and its supported safety functions to be taken out of service and entry into a limiting condition for operation (LCO). The Supply System continues to evaluate the potential for performing Code repairs or system modifications on line. Pursuant to 10CFR50.55a(g)(6)(i) and using the guidance of Generic Letter 90-05, relief is requested for the installed temporary non-Code repair until a permanent Code repair or modification can be performed. The Code repair will be implemented at the next scheduled outage exceeding 30 days, but no later than the completion of the next refueling outage which is currently scheduled to start in April/May, 1996.

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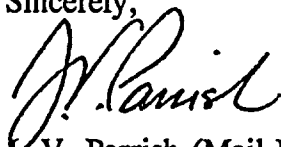
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**TEMPORARY NON-CODE REPAIR PER GENERIC LETTER 90-05 OF STANDBY
SERVICE WATER PIPING**

Should you have any questions or desire additional information regarding this matter, please call me or D. A. Swank at (509) 377-4563.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. V. Parrish".

J. V. Parrish (Mail Drop 1023)
Vice President, Nuclear Operations

DPR/dpr

cc: LJ Callan - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Sr. Resident Inspector - 927N

ATTACHMENT 1

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Component for Which Relief is Requested

Repair of pinhole leak located in ASME Section III Code Class 3 Standby Service Water (SW) loop A piping, approximately 78 inches upstream of west flange connection at SW-PCV-38A. See Figures 1 and 2 for location of the leak.

Section XI Requirements

ASME Section XI, 1989 Edition no Addenda, Article IWA-4000 requires the removal of an unacceptable defect and a subsequent repair.

Code Requirement from Which Relief is Requested

Requirement to perform a repair per Article IWA-4000

Basis for Relief

Using the guidance from Generic Letter 90-05, it is impractical to perform a Code repair of this flaw during plant operations. To perform a Code repair of the flaw requires entry into a limiting condition for operation (LCO) with the potential for a forced plant shutdown should the repair not be completed within the 72 hour Action Statement time limit. During the LCO this SW loop and its supported safety-related equipment will not be available to perform their safety function.

Alternative Repair

A temporary non-Code repair has been performed using the guidance of Generic Letter 90-05. This repair consists of a rubber gasket clamped over the flaw.

Justification for the Granting of Relief

The format of this justification follows the format of Generic Letter 90-05, Enclosure 1.

A. Introduction

A small through-wall flaw exists in the SW "A" division discharge piping to the spray pond header in the "B" pond. The flaw exists in line 18"SW(21)-2 (see Figures 1 and 2) within the SW Pumphouse-A valve pit. The leak rate is estimated at one quarter (0.25) gpm. Two additional areas of wall thinning near the through-wall flaw were found during the augmented inspection. These areas are approximately 5 and 6.5 inches from the through-wall flaw.

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B. Scope, Limitations, and Specific Considerations

1. Scope

The non-Code repair was made to ASME Section III, Code Class 3, 18 inch diameter standard schedule (0.375 inch wall) ferritic steel pipe (SA-106, GR B). The operating pressures and temperatures are 216 psig and 32 to 106 degree F respectively¹. The repair will cover the through-wall flaw and the two nearby areas of wall thinning.

2. Limitations

The flaw originated from the inner diameter of the pipe.

The flaw was detected during plant operations.

The flaw will be repaired in accordance with ASME Section XI, IWA-4000 requirements at the next scheduled outage exceeding 30 days, but no later than the next refueling outage in the Spring of 1996.

3. Specific Considerations

Flooding²

A 5 inch diameter overflow pathway is provided between the valve pit and the pump intake well. This overflow path assures that if the non-safety related sump pump fails then flooding of the valve pit will be limited to approximately 4 feet in depth. There is no safety-related equipment in the valve pit below the elevation of the overflow pathway. The assumed maximum defect-induced orifice (0.75 inch diameter - see Other Interactions - Erosion for derivation) cannot exceed the discharge capability of the 5 inch diameter overflow penetration. Finally, the lost volume of spray pond inventory that would be trapped in the valve pit (< 20,000 gallons) is small in comparison to the spray pond volume of nearly 12 million gallons.

¹ "Process Piping and Pipe Support ASME Section III Design Specification" (Certified Design Specification), page 1-67

² PER 295-1002, Follow-up Assessment of Operability, pg 3

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Spraying

There is no safety-related equipment in the area of the leak that would be affected by spray from the leak.

Loss of Flow³

The operating system pressure at the spray header discharge is approximately 20 psi. A square edged 0.75 inch diameter (see Other Interactions - Erosion for derivation) orifice working at a differential pressure of 20 psi will yield a volume flow rate of less than 50 gpm at standard conditions.

The total SW flow to the spray header is greater than 10,000 gpm. Consequently, a spray pond bypass flow of 50 gpm directly to the SW pump intake will result in an approximate 0.1 °F increase in the pump discharge temperature (i.e. a SW cooling flow temperature increase based on the ratio of bypass flow to total supply flow). This magnitude of cooling flow temperature increase is not significant and is well within the error limits of process system thermal hydraulic analyses.

Other Interactions - Erosion⁴

Erosion of the defect is not easily defined since the material condition adjacent to the defect is not known. Volumetric NDE inspections do reveal that outside of a 0.38 inch radius the piping wall thickness is not eroded (i.e. the nominal full piping section thickness is maintained). If it is assumed that the piping material is degraded in the vicinity of the defect area, which cannot be NDE inspected, then the resultant maximum circular diameter would be equivalent to a 0.75 inch diameter hole.

Integrity of Design Load

The total weight of the non-Code repair material added to the pipe is bounded by the seismic calculation for this pipe and does not affect the existing seismic calculation.

³ ibid, pg 2-3

⁴ ibid, pg 2

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Failure Consequences

The failure of this piping would result in a loss of one of the two SW loops and subsequent loss of safety-related equipment supplied by this loop. Plant procedures and Technical Specifications provide guidance for placing the plant in a cold shutdown condition.

Impact on Safe Shutdown Capability

The procedure PPM 4.4.5.1 "Loss of Standby Service Water System" provides guidance to the operators when SW is lost and Technical Specification 3.7.1 defines the LCO for loss of SW.

Integrity of Repair

An assessment of leakage through the temporary non-Code repair will be made on a weekly basis. An NDE examination will be performed every 3 months to assess the integrity of the temporary non-Code repair. If degradation is noted during the above assessments an engineering evaluation will be performed to assess the rate and extent of degradation to assure structural integrity is maintained during the life of the temporary non-Code repair.

C. Evaluation

1. Flaw Detection During Plant Operation and Impracticality Determination

The flaw in the SW piping was found during a system line up by operations personnel. The section of piping where the flaw is located can not be repaired without taking this loop of the SW out of service. This would initiate a 72 hour limiting condition for operation (LCO). At this time a complete Code repair cycle has not been identified that can be performed within this time frame.

2. Root Cause Determination and Flaw Characterization

From NDE results, the defect appears to be localized. Preliminary determination is that the flaw was caused by corrosion.

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3. Flaw Evaluation

A fracture mechanics evaluation of the SW through-wall defect has been completed and documented by Supply System Calculation ME-02-95-22. This calculation concludes that the defect size is well within acceptable size limits as established by the fracture mechanics methods and criteria of Generic Letter 90-05 (Enclosure 1, C.3a). Evaluation of the through-wall defect is deemed bounding with respect to the two partial-depth defects which are found in the local area of the leakage defect. The partial-depth defects are linearly separated by a distance which is more than $1.5\text{SQRT}(Rt)$ (i.e. 2.75 inches) and therefore stress-field interactions are not significant (i.e. the defects do not structurally interact).

4. Augmented Inspection

To assess the overall degradation of SW, augmented ultrasonic examinations were performed on 5 locations that were considered susceptible to similar degradation. The augmented examinations were completed within 15 days after the flaw was discovered. Two areas of wall thinning within the local area, but greater than 5 inches from the flaw were noted. An area of pipe wall thinning was noted in a similar location on the B SW loop. This thinning was evaluated and determined to be acceptable for continued operations. The sample size was further expanded to an additional 5 locations. No further adverse degradation was found in the second sample.

Implementation Schedule

The temporary non-Code repair is to be implemented upon NRC approval of the relief request.

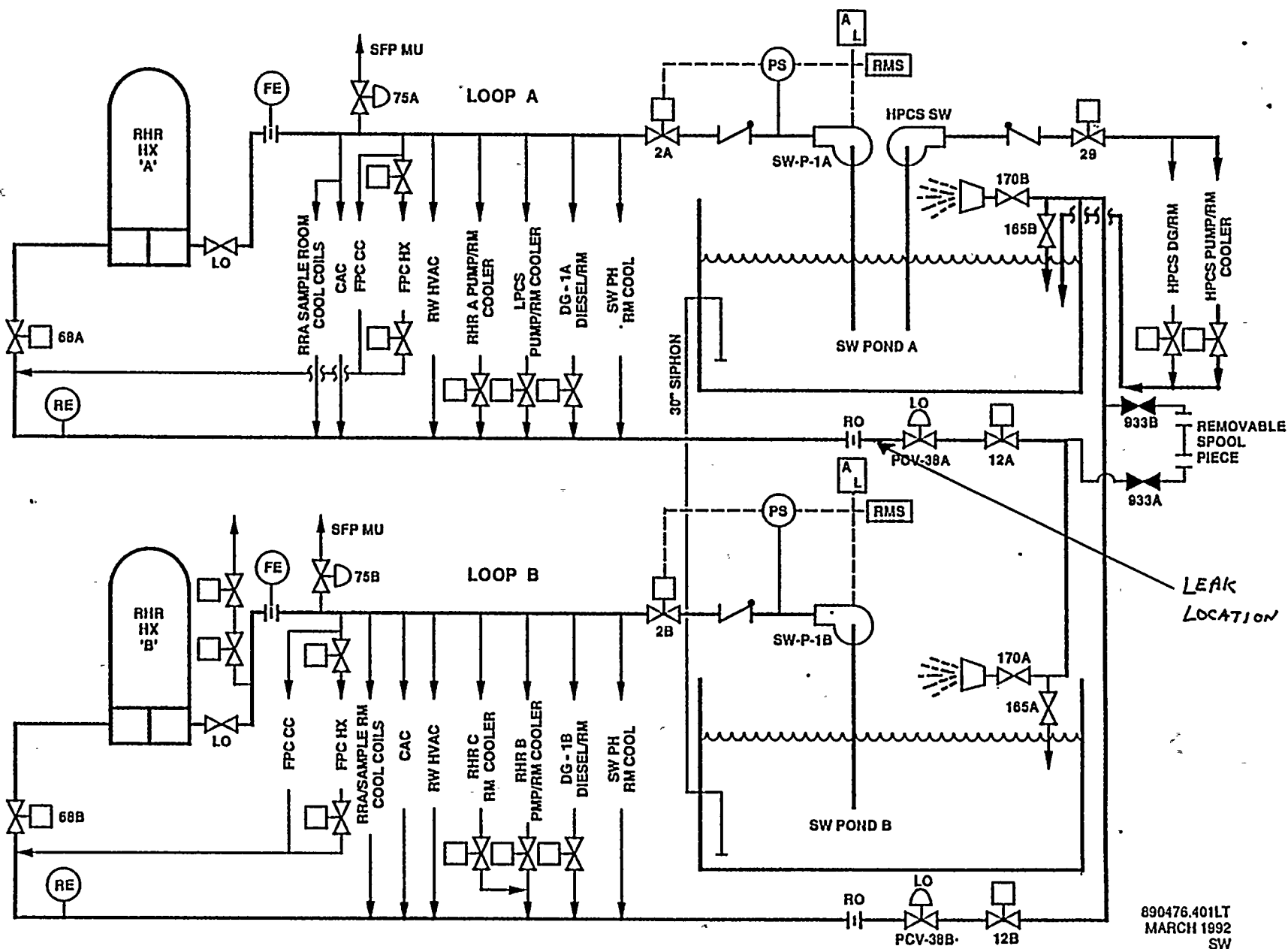


FIGURE 4. STANDBY SERVICE WATER (SIMPLIFIED)

890476.401LT
MARCH 1992
SW

STANDBY SERVICE WATER PUMP HOUSE 1A (APPROXIMATE DIMENSIONS)

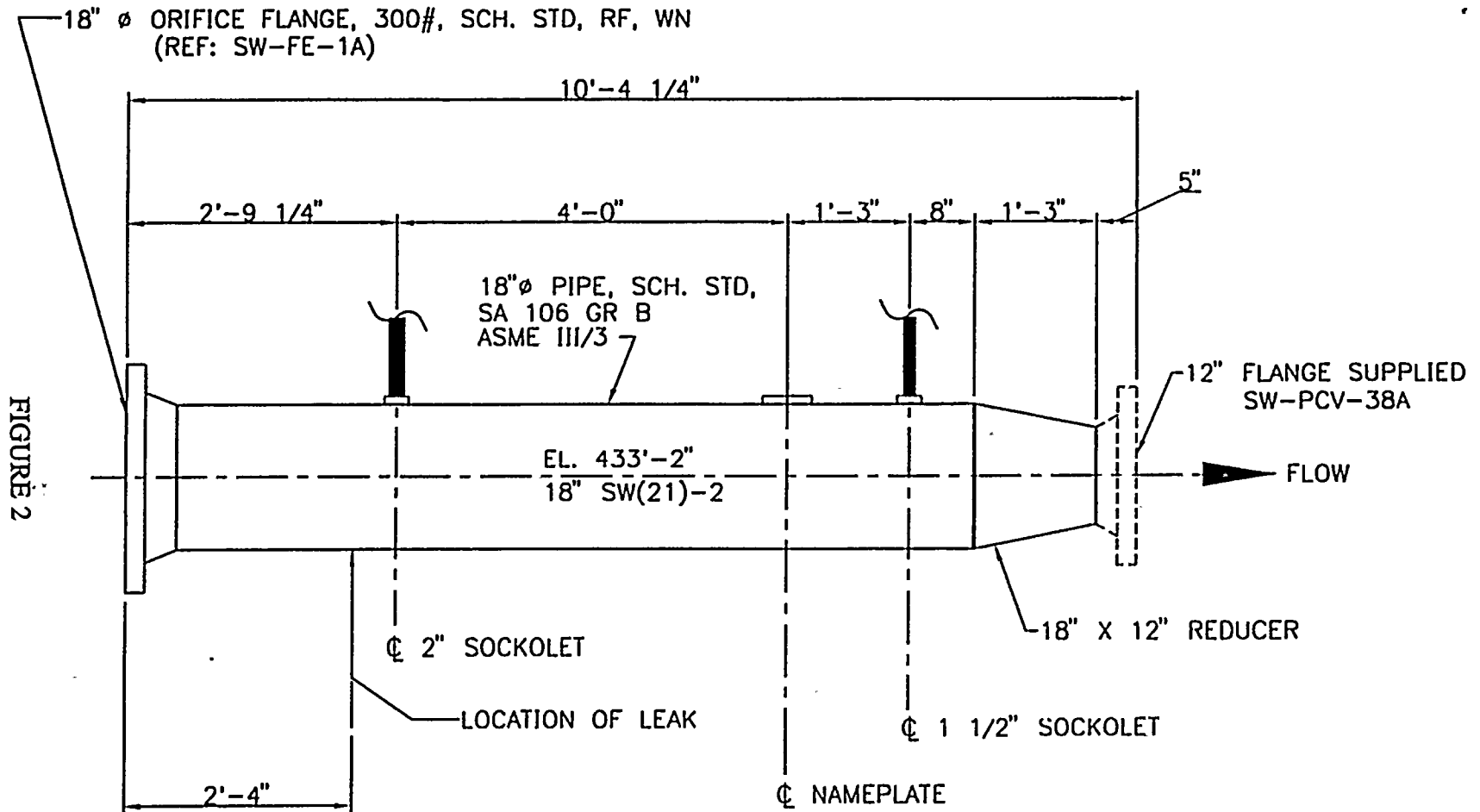


FIGURE 2

ELEVATION LOOKING NORTH

9/13/95

REF. DWG.
SW-296-54.57
CVI# 215-00,1040

RELIEF REQUEST NO. 21SI-16

ATTACHMENT 1

