FPL

JAN 0 6 2004

L-2003-316
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Inservice Testing Program
Fourth 10 Year Testing Interval Pump and Valve Relief Requests

The Turkey Point Inservice Testing (IST) program is being revised to requirements of the 1998 Edition through 2000 Addenda of the ASME OM Code for the Fourth 10-year Testing Interval beginning February 22, 2004 for Turkey Point Unit 3 and April 15, 2004 for Turkey Point Unit 4.

Florida Power & Light Company (FPL) requests relief from the requirements of the ASME OM Code pursuant to 10 CFR 50.55a for the pumps and valves listed in the attached Table. The detailed pump and valve relief requests are enclosed.

If you have any questions please contact Walter Parker at (305) 246-6632.

Very truly yours,

Terry Jones

Terry O. Jones
Vice President
Turkey Point Nuclear Plant

Attachment
Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

A-047

Turkey Point Units 3 and 4
Inservice Testing Program

4th 10 Year Interval Relief Requests Summary Table

Relief Request Number	Title	Enclosure to L-2003-316
PR-01	Boric Acid Transfer Pump Fixed Resistance	1
PR-02	Gauge Lines: 0.25% Gauge Liquid	2
PR-03	Containment Spray Pump Comprehensive Pump Test	3
PR-04	Residual Heat Removal Discharge and Suction Pressure Gauge Range Requirements	4
PR-05	No Comprehensive Test for Certain Group A Pumps	5
PR-06	Categorization of Residual Heat Removal Pumps as Group B	6
VR-01	Exercise Testing of Option B Check Valves with Only a Closed Safety Function	7
VR-02	Position Indication Verification Performed in Accordance with Appendix J Seat Leakage Testing Frequency for Solenoid Operated Valves	8
VR-03	Auxiliary Feedwater Pump Discharge Check Valve, 20-143, Exercise Frequency	9

Enclosure 1

PR-01

Boric Acid Transfer Pump Fixed Resistance

10 CFR 50.55a Request Number PR-01

**Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)
Alternative Provides Acceptable Level of Quality and Safety**

1. ASME Code Component(s) Affected

3P203A	3A Boric Acid Transfer Pump
3P203B	3B Boric Acid Transfer Pump
4P203A	4A Boric Acid Transfer Pump
4P203B	4B Boric Acid Transfer Pump

2. Applicable Code Edition and Addenda

ASME OM Code 1998 Edition through 2000 Addenda

3. Applicable Code Requirement

ISTB-5121(c) – Where it is not practical to vary system resistance, flow rate and pressure shall be determined and compared to their respective reference values.

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-5121(c). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The normal test loop for the subject pumps consists of fixed resistance flow paths to limit flow, however, flow measuring instruments are not installed. See Attachment 1, Boric Acid Transfer Pump Test Diagram. Since the system resistance is fixed and can be assumed to be constant, pump degradation can be detected by comparing successive measurements of pump differential pressure.

5. Proposed Alternative and Basis for Use

An alternate test circuit is available in which flow rate may be measured, however this flow path requires injection of highly concentrated boric acid solution into the reactor coolant system. During the quarterly group A test at normal power operations, this test is highly impractical since severe power level fluctuations would be created which would lead to a potential transient and subsequent trip of the reactor. Performing this test at cold shutdown intervals would also result in excessive boration of the reactor coolant system resulting in potential difficulties and delays in restarting the plant.

10 CFR 50.55a Request Number PR-01
(Continued)

As an alternative to measuring differential pressure and flow during the group A quarterly test, only the differential pressure will be measured and compared to its reference value. Additionally, vibration measurements are also recorded and compared to their reference values. Manual isolation valves are closed and flow is recirculated back to the boric acid tank. See Attachment 1, Boric Acid Transfer Pump Test Diagram.

During the comprehensive inservice test when flow may be measured, full spectrum analysis will be performed above the required vibration analysis by the Code. When performing the comprehensive pump test, all required parameters will be measured and compared to their reference values.

Additionally, these pumps are included in the station preventive maintenance program which requires a pump inspection and oil analysis to be performed periodically.

Based on the preventive maintenance inspection results, full spectrum analysis, and continued quarterly and comprehensive testing, an accurate assessment of pump health and operational readiness is determined. This alternative provides an acceptable level of quality and safety.

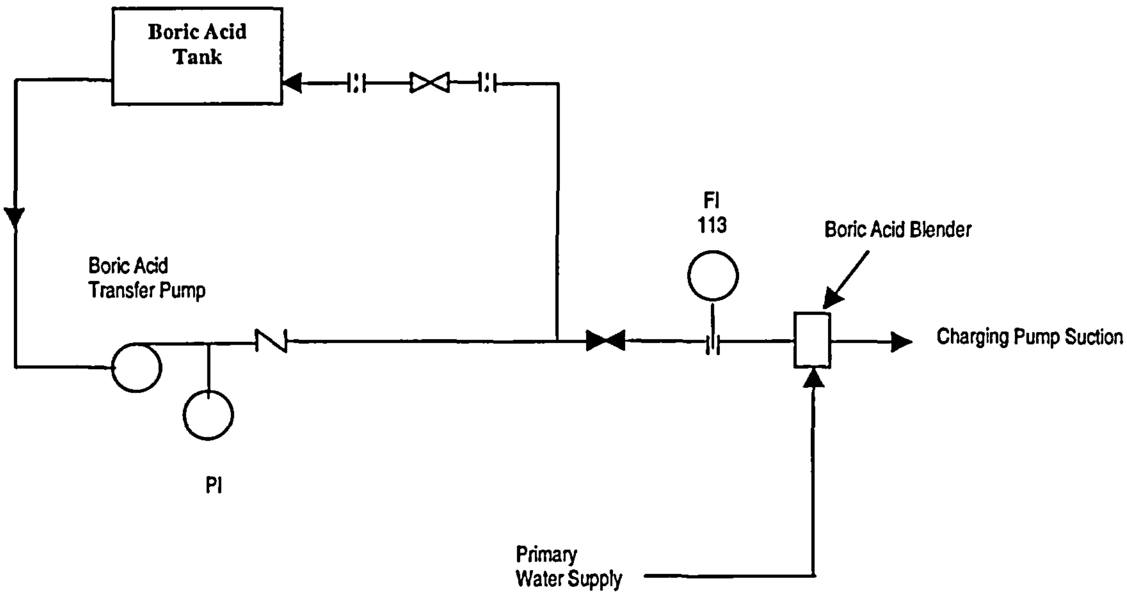
6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4th 120 month interval.

7. Precedents

This relief request was previously approved for 3rd Ten Year Interval at Turkey Point as PR-1, and satisfies the requirements of Generic Letter 89-04, Position 9.

10 CFR 50.55a Request Number PR-01
(Continued)
Attachment 1
Boric Acid Transfer Pump Test Diagram



Enclosure 2

PR-02

0.25% Gauge Liquid

10 CFR 50.55a Request Number PR-02

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Component(s) Affected

3P203A	3A Boric Acid Transfer Pump
3P203B	3B Boric Acid Transfer Pump
4P203A	4A Boric Acid Transfer Pump
4P203B	4B Boric Acid Transfer Pump
3P211A	3A Component Cooling Water Pump
3P211B	3B Component Cooling Water Pump
3P211C	3C Component Cooling Water Pump
4P211A	4A Component Cooling Water Pump
4P211B	4B Component Cooling Water Pump
4P211C	4C Component Cooling Water Pump
3P215A	3A Safety Injection Pump
3P215B	3B Safety Injection Pump
4P215A	4A Safety Injection Pump
4P215C	4B Safety Injection Pump

2. Applicable Code Edition and Addenda

ASME OM Code 1998 Edition through 2000 Addenda

3. Applicable Code Requirement

ISTB-3520(a) – *Gage Lines.* If the presence or absence of liquid in a gage line could produce a difference of more than 0.25% in the indicated value of the measured pressure, means shall be provided to ensure or determine the presence or absence of liquid as required for the static correction used.

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-3520(a). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

For the group A and comprehensive pump tests, applying the 0.25% limit to low pressure measurements to these pumps results in complex venting procedures requiring valve manipulations, component disassembly, and breech of radioactive and chemically treated systems to perform the test. Turkey Point has implemented and mandated programs and policies to minimize the causes of these types of waste products.

10 CFR 50.55a Request Number PR-02
(Continued)

Venting of the suction gages for the purposes of testing does not significantly effect the overall differential pressure measurement, while it significantly impacts the plant waste reduction program.

For the subject pumps, discharge pressure exceeds suction pressure by at least a factor of six, for which a 0.25% error introduced into the suction pressure measurement typically results in an error of 0.05% in the differential pressure calculation. This error is insignificant with respect to the potential 6% error allowance applied to both the suction and discharge pressure instruments.

5. Proposed Alternative and Basis for Use

As an alternative, the introduced error in conjunction with the specific range and accuracy of the gauges utilized will be verified to comply with the minimum Code required accuracy for calculation of the differential pressure. This calculation will verify that the square root of the sum of the errors of the specific gauges utilized, and will include a term to account for the error associated with the presence or absence of liquid, is less than the square root of the sum of the squares of 6 % of the associated suction and discharge lines.

This request applies to the Boric Acid Transfer and Component Cooling water pumps' group A test and all of the subject pumps' comprehensive tests. The Safety Injection pumps are considered group B. Flow rate is the only measured parameter during the group B test of the Safety Injection pumps.

This alternative provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4th 120 month interval.

7. Precedents

This relief request was previously approved for 3rd Ten Year Interval at Turkey Point as PR-4.

Enclosure 3

PR-03

Containment Spray Pump Comprehensive Test

10 CFR 50.55a Request Number PR-03

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)
Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Component(s) Affected

3P214A	3A Containment Spray Pump
3P214B	3B Containment Spray Pump
4P214A	4A Containment Spray Pump
4P214B	4B Containment Spray Pump

2. Applicable Code Edition and Addenda

ASME OM Code 1998 Edition through 2000 Addenda

3. Applicable Code Requirement

ISTB-3300(e)(1) – Reference values shall be established within +/- 20% of pump design flow rate for the comprehensive test.

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-3300(e)(1). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The specified +/- 20% of pump design flow rate can not be achieved for the subject pumps during normal quarterly Group B testing or during Comprehensive testing. The design flow rate of the containment spray pump is 1450 gpm. This point is also the best efficiency point of the pump.

Attachment 1 is the pump characteristic curve which is representative of the Containment Spray pumps at Turkey Point.

5. Proposed Alternative and Basis for Use

The design of the containment spray system is such that the test loop for the pump consists of a 6" discharge line which separates into a 2" recirculation line back to the pump suction. The 6" discharge line terminates inside containment at the spray nozzles. Testing of the pump at the design flow rate, would require discharging flow through the spray nozzles and subsequently wetting containment. The discharge piping was not designed to be temporarily modified to allow pump design flow without flow being discharged to the containment via the spray nozzles.

10 CFR 50.55a Request Number PR-03
(Continued)

During preoperational testing (1971 and 1972 for Unit #3 and Unit #4 respectively), the containment spray pumps were full flow tested. A test loop was constructed by installing a 6" section of piping in place of the discharge check valve (*-890A/B). This temporary section of piping was routed to the plant sump. See Attachment 2, Containment Spray System Preoperational Test Flow Diagram. With the discharge to containment isolated, the pumps were run for at least an hour in the recirculation mode (1" line) taking suction from the Refueling Water Storage Tank (RWST). After operating in recirculation, the pumps were then operated at substantial flow using the temporary test line. Three points on the manufacturers curve were then verified, with the acceptance criteria that the pump head and capacity be above the FSAR performance curve shown in Attachment 1. Each of the pumps delivered at least 1450 gpm when preoperationally tested. Attachments 3 and 4 contain the preoperational data plotted against the performance curve.

It should be noted that the originally installed 1" recirculation line was designed for a flow rate of 50 gpm to prevent pump damage when pumping to a closed loop. In 1982, a test recirculation line was installed for each containment spray pump to allow each pump to be tested at a minimum of 400 gpm for inservice testing purposes. During the design change process it was identified by the pump manufacturer (Gould) that a minimum recirculation flow of 300 gpm be provided for the short duration monthly test and 400 gpm be provided for the annual hour-long test. Turkey Point installed the necessary recirculation test flow path under design change PC/M 82-19, 20 on both Unit #3 and Unit #4. See Attachment 5, Current Containment Spray System Diagram.

As an alternative to testing at +/- 20 % of design flow, the test recirculation loop shown in Attachment 5 will be used. The reference flows are established at approximately 400 gpm, versus a design flow of 1450 gpm. The low flow rate is due to the 2" recirculation line. At this reference point of 400 gpm, the characteristic curve for the pump is not horizontal. Pump degradation as noted by measuring differential pressure can be detected for a given flow rate reference value.

The reference flow rate of 400 gpm corresponds to 27.6 % of pump design flow. At the reference conditions the flow values are currently at a point on the curve (Attachment 1) that is well sloped and repeatable. Any degradation in pump performance at the set flow rate be recognized or detected through a substantial change in measured pump differential pressure.

To establish the flow rate within +/- 20 % of design would require a flow rate of at least 1160 gpm. Establishing flows at 1160 gpm does not increase the ability to detect degradation or assess pump conditions since the slope of the pump curve is essentially constant from shutoff head to 1250 gpm. Therefore, testing at higher flows does not increase the ability to detect hydraulic degradation.

10 CFR 50.55a Request Number PR-03
(Continued)

Past test data for the Unit #3 and #4 containment spray pumps is presented in Attachments 6 and 7 respectively. This test data was collected during the corresponding inservice test with the pump operating at a set flow rate of 400 gpm. Comparing this test data to the original pump performance and preoperational curves in Attachments 3 and 4 demonstrates the pumps are operating above the original performance curve and at or above the original preoperational curve. Additionally, vibration data collected during the inservice tests, has been below 0.325 in/sec in all cases. Based on this mechanical and hydraulic data, and the maintenance history, there is reasonable assurance that the pumps would perform their intended design function. Projecting the hydraulic pump performance at substantial flow rates would be expected to be above the performance curve at the design point, with adequate margin. Mechanical vibration projected at substantial flows would tend to be less than that at the reduced flow test point.

As expected, insignificant degradation has been experienced since these pumps are only operated for testing purposes.

To compensate for testing the containment spray pumps at reduced flow rates during the comprehensive test, as required by ISTB-3300(e)(1), additional activities will be performed as follows to assess operational readiness and determine pump health.

During all comprehensive inservice testing, full spectrum analysis is performed above the required vibration analysis by the Code. Additionally, these pumps are included in the station Preventive Maintenance Program which requires a pump inspection and oil analysis to be performed periodically. Based on the preventive maintenance inspection results, full spectrum analysis, oil analysis, and continued quarterly and comprehensive testing within 27.6% of design pump flow, an accurate assessment of pump health and operational readiness is determined.

Additionally, Turkey Point has previously modified the system to increase the test flow rate. However, reestablishing the full flow test loop for the purpose of periodic testing would require modifications to the plant and removal of check valve (*-890A/B). Post maintenance testing of system and verification of check valve (*-890A/B) would be a substantial burden. Substantial flow can only be achieved through the 6" discharge line which ultimately requires flow through the spray nozzles. A temporary modification to plug the nozzles and install a test return line capable of passing pump design flow would be highly labor intensive and would require a permanent modification to the containment spray piping system.

10 CFR 50.55a Request Number PR-03
(Continued)

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4th 120 month interval.

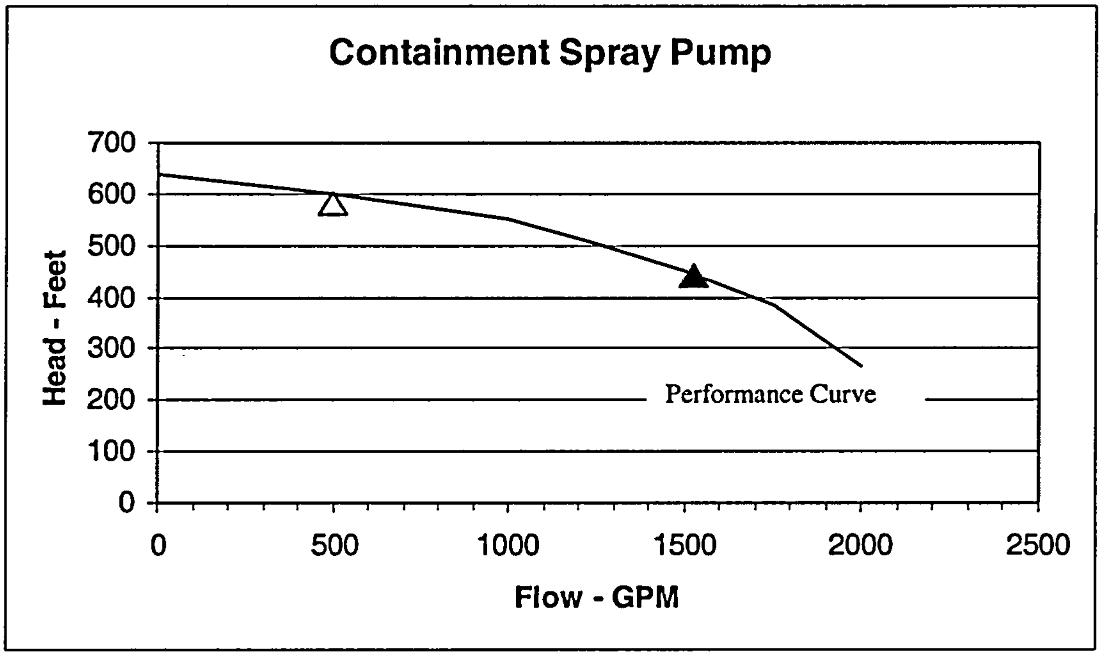
7. Precedents

- Similar relief request PR-6 was previously approved for North Anna Power Station on January 8, 2002. Docket Nos. 50-338 and 50-339 (TAC Nos. MB2221and MB2222).
- Similar relief request PR-1 was previously approved for Seabrook Station on May 30, 2003. Docket No. 50-443 (TAC No. MB6676).

10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 1

Containment Spray Pump Characteristic Curve



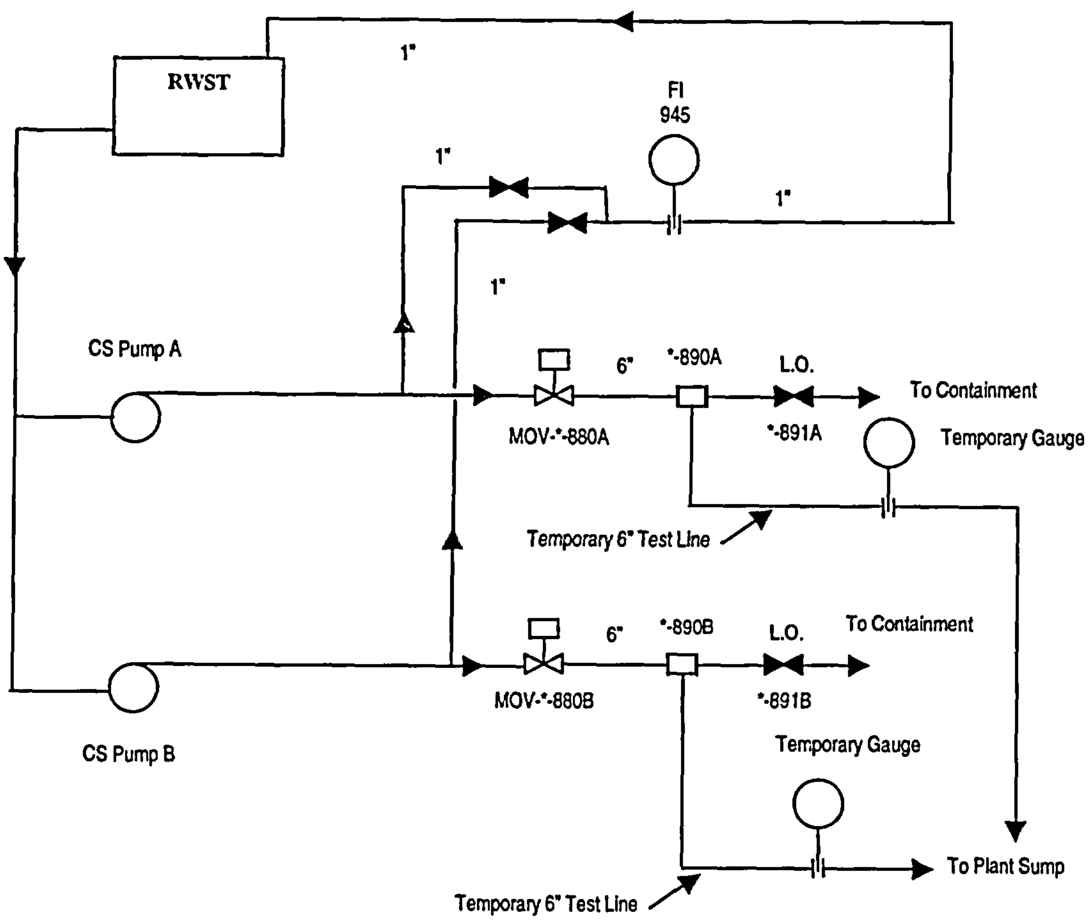
▲ Pump Design Point (1450 gpm)

△ - Pump Test Point (set parameter is flow at 400 gpm)

10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 2

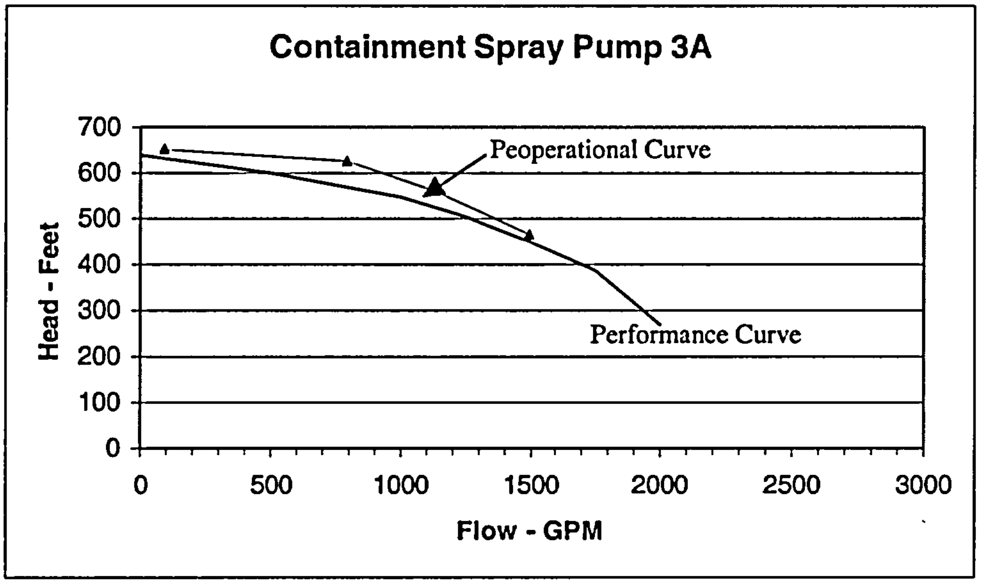
Containment Spray System Preoperational Test Flow Diagram

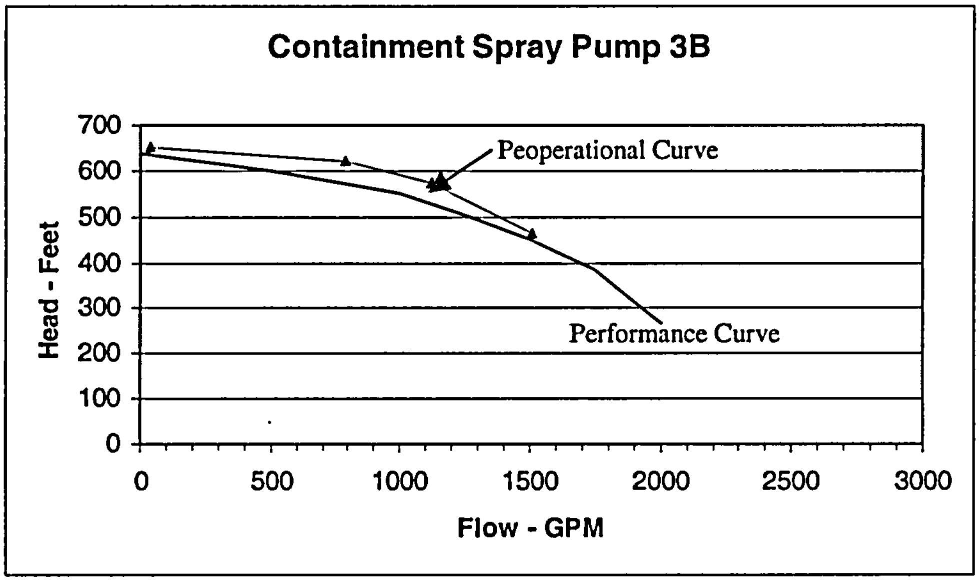


10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 3

Containment Spray Pump Preoperational Data – Unit #3

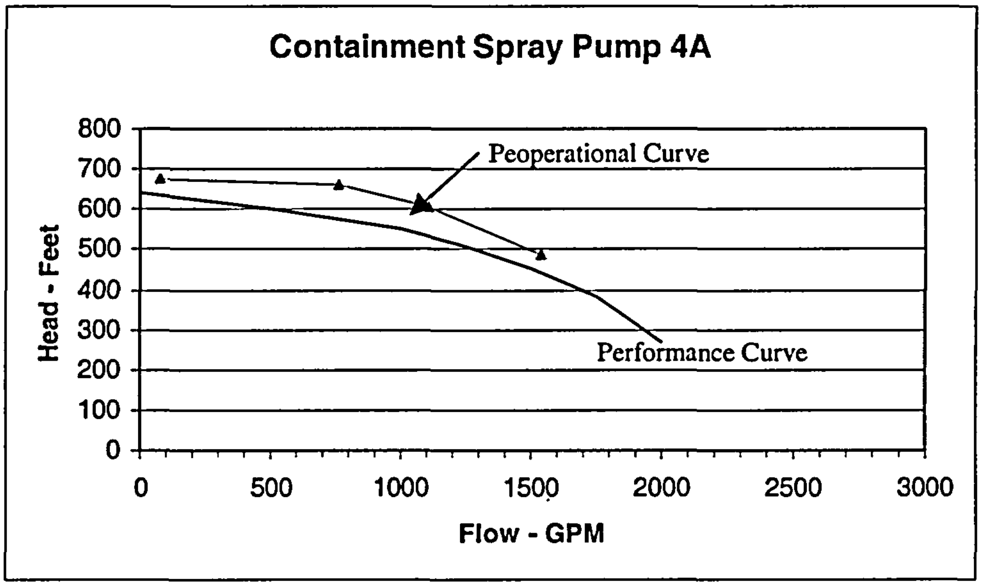


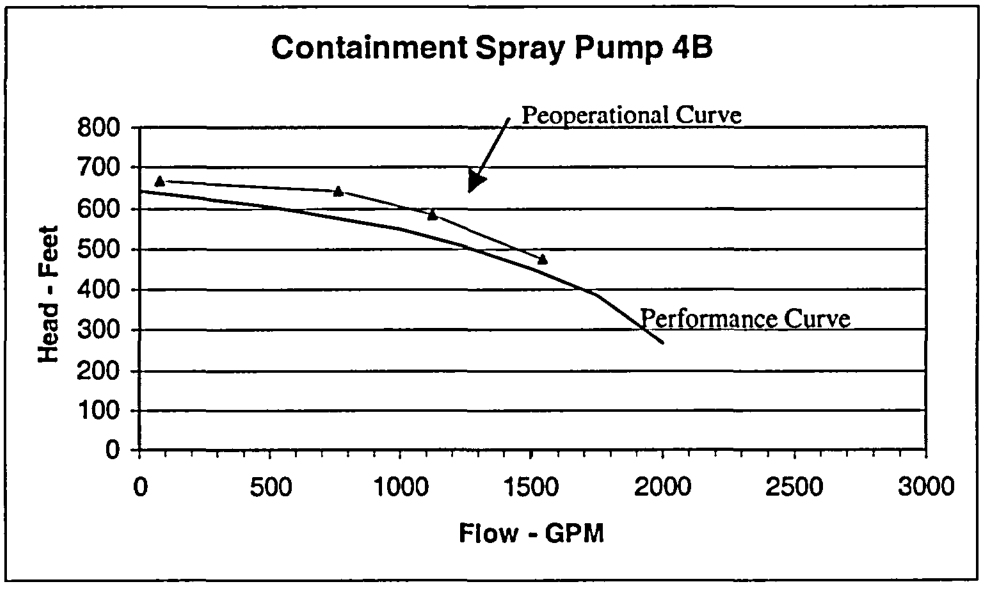


10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 4

Containment Spray Pump Preoperational Data – Unit #4

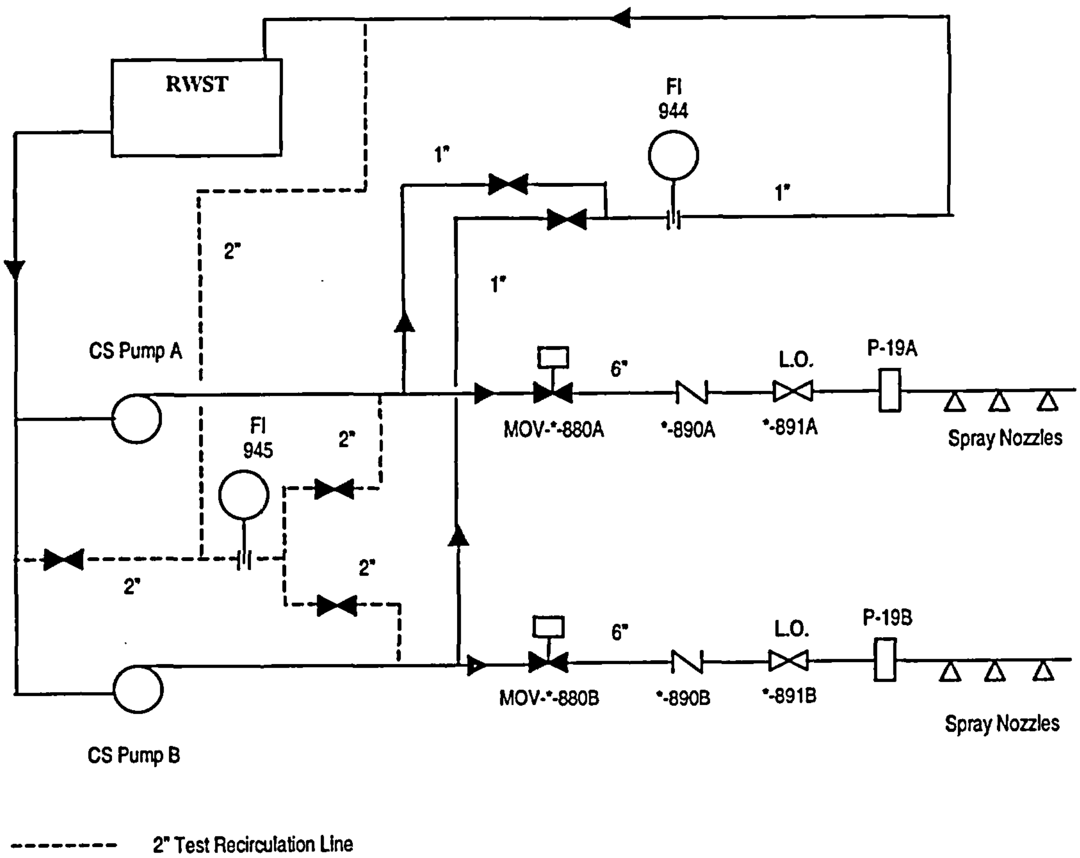




10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 5

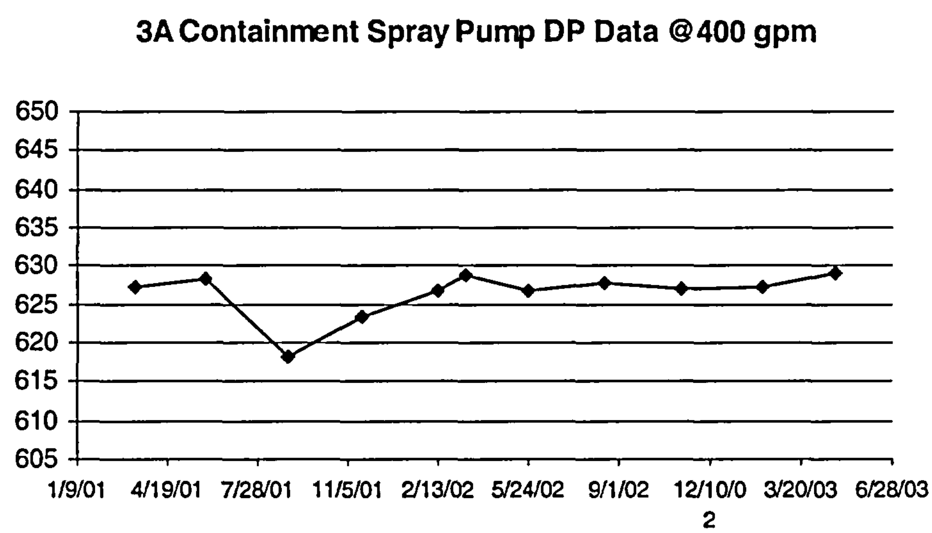
Current Containment Spray System Diagram

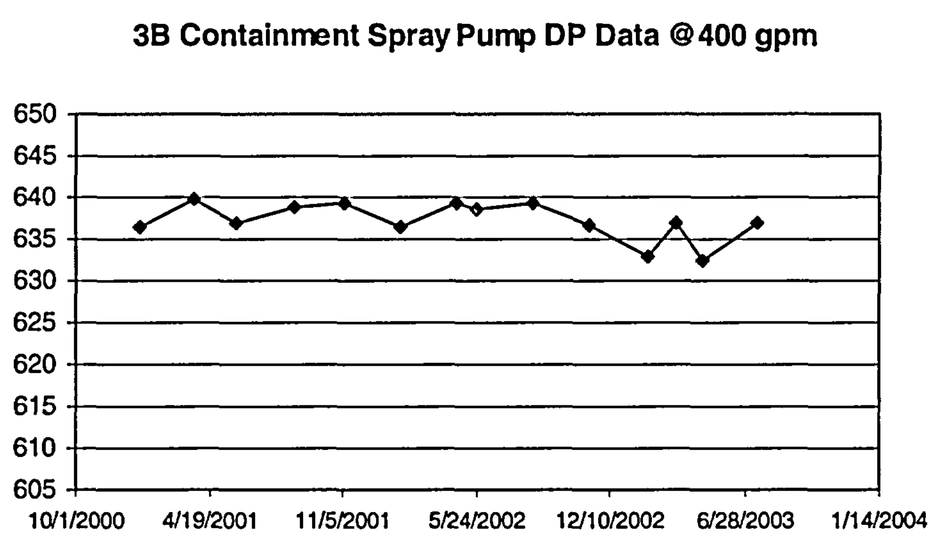


10 CFR 50.55a Request Number PR-03
(Continued)

Attachment 6

Containment Spray Pump Operational Data – Unit #3

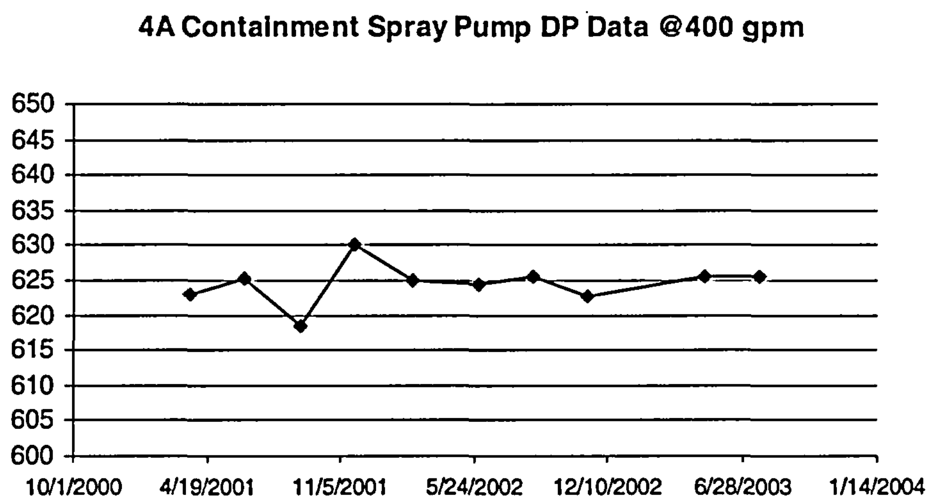


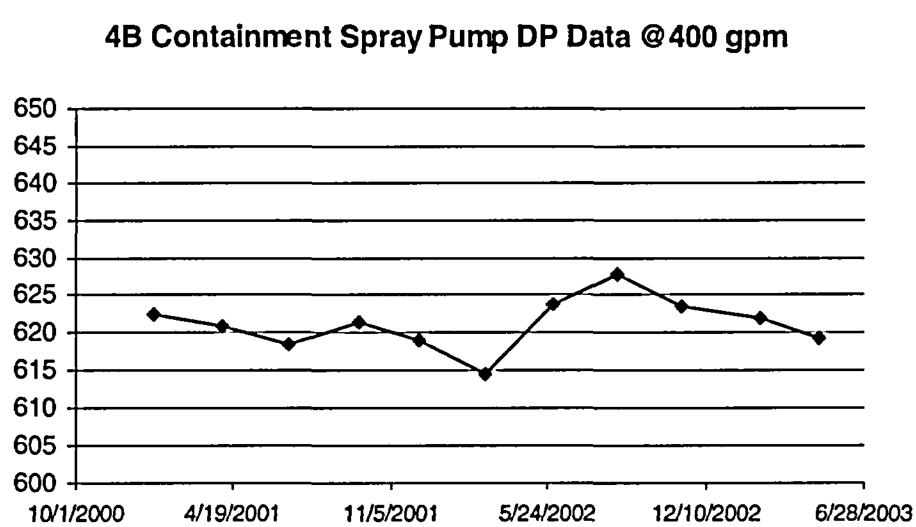


10 CFR 50.55a Request Number PR-03 (Continued)

Attachment 7

Containment Spray Pump Operational Data – Unit #4





Enclosure 4

PR-04

RHR Discharge and Suction

Pressure Gauge Range Requirements

10 CFR 50.55a Request Number PR-04

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Component(s) Affected

3P210A	3A Residual Heat Removal Pump
3P210B	3B Residual Heat Removal Pump
4P210A	4A Residual Heat Removal Pump
4P210B	4B Residual Heat Removal Pump

2. Applicable Code Edition and Addenda

ASME OM Code 1998 Edition through 2000 Addenda

3. Applicable Code Requirement

ISTB-3510(b)(1) – The full-scale range of each analog instrument shall be not greater than three times the reference value.

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-3510(b)(1). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety

The installed suction and discharge pressure gauges of the residual heat removal pumps are sized to accommodate the pressure range of 4 to 600 psig expected under standby, cold shutdown, and emergency operation modes. The instrument range is 0 to 600 psig. As a result, the instrument range exceeds the requirement of ISTB-3510(b)(1) since during the quarterly and cold shutdown inservice tests, the suction/discharge pressures may be considerably less than the range requirements of ISTB-3510(b)(1).

5. Proposed Alternative and Basis for Use

As an alternative, the use of existing instrumentation, without meeting the 1/3 range requirements of the Code but which exceed the Code required accuracies will be applied to all inservice tests of the RHR pumps. This alternative will adequately provide for monitoring pump health conditions for the following reasons:

These specific gauges are calibrated to an accuracy of +/- 0.25 % and are of the "twice around" type such that they may accurately indicate pressure over all

10 CFR 50.55a Request Number PR-04 (Continued)

modes of Residual Heat Removal operations (Shutdown Cooling and Emergency Core Cooling). The gauge range on the first revolution is 0 to 300 psig and 300 to 600 psig on the second revolution. See Attachment 2, RHR Suction and Discharge Pressure Gauge.

Suction Pressure

Suction pressure measurements are recorded and used to derive the pump differential pressure through calculation. The accuracy of the suction pressure measurement normally has little or no effect on the results of this calculation since, generally, the pump discharge pressure exceeds the suction pressure by 6 to 7 times the reference value. When determining pump differential pressure (DP), typically the RHR pump DP is approximately 100 psi (discharge pressure approximately 120 psig while suction pressure is approximately 20 psig). The maximum effect of suction pressure inaccuracies is 0.25% x 600 psig, or 1.5 psig. The Code required gauge range for this suction pressure reference value (20 psig) would be 0 to 60 psig. The Code accuracy requirement of 2% would cause a maximum inaccuracy of 2.0% x 60 psig, or 1.2 psig. See Attachment 1.

Discharge Pressure

Discharge pressure measurements are also recorded and used to derive the pump differential pressure through calculation. When determining pump differential pressure (DP), typically the RHR pump DP is approximately 100 psig (discharge pressure approximately 120 psig while suction pressure is approximately 20 psig). The maximum effect of the discharge pressure inaccuracies is 0.25% x 600 psig, or 1.5 psig. The Code required gauge range for this discharge pressure reference value (120 psig) would be 0 to 360 psig. The Code accuracy requirement of 2% would cause a maximum inaccuracy of 2.0% x 360 psig, or 7.2 psig. See Attachment 1.

Combination

Based on the inaccuracies of the suction and discharge pressure gauges (+/- 1.5 psig), the largest possible error in the differential pressure calculation is +/- 3 psig. Use of gauges with Code required ranges, and applying the Code accuracy requirements, the largest possible inaccuracies would be 1.2 psig + 7.2 psig, or 8.4 psig. See Attachment 1.

Therefore, the use of permanently installed pressure instruments which exceed the Code required accuracies but do not meet the Code range requirements would reduce the overall instrument inaccuracies with respect to differential pressure for the quarterly test from 8.4 psig to 3.0 psig.

10 CFR 50.55a Request Number PR-04 (Continued)

For the comprehensive pump test, the overall inaccuracy of the currently installed instruments is 3.0 psig versus 2.1 psig for an instrument which meets the range requirements. This difference is less than 1% (0.9 psig) of the overall reference differential pressure of 100 psi.

Additionally, during the RHR pump comprehensive testing, full vibration spectrum analysis is performed above the Code required vibration analysis. Further, these pumps are included in the station preventive maintenance program which requires each pump to be inspected on a periodic basis.

Based on the preventive maintenance inspection results, full spectrum analysis, and continued quarterly and comprehensive testing with the permanently installed pressure gauges, an accurate assessment of pump health and operational readiness is determined.

This alternative provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4^{th} 120 month interval.

7. Precedents

A similar relief request was previously approved for 3^{rd} Ten Year Interval at Turkey Point as PR-3.

10 CFR 50.55a Request Number PR-04

(Continued)

Attachment 1

Gauge Ranges and Accuracy Comparison

The following tables present a comparison between the permanently installed pressure gauges on the RHR pumps at Turkey Point along with the Code required ranges and accuracies for both a Group A or B test and a Comprehensive test.

Suction Pressure

	Gauge Range	Accuracy	Suction Pressure Inaccuracy
Turkey Point	0 – 600 psig	0.25 %	1.5 psig
Group A or B Test	0 – 60 psig	2.0 %	1.2 psig
Comprehensive Test	0 – 60 psig	0.5 %	0.3 psig

Discharge Pressure

	Gauge Range	Accuracy	Discharge Pressure Inaccuracy
Turkey Point	0 – 600 psig	0.25 %	1.5 psig
Group A or B Test	0 – 360 psig	2.0 %	7.2 psig
Comprehensive Test	0 – 360 psig	0.5 %	1.8 psig

Combination – Differential Pressure

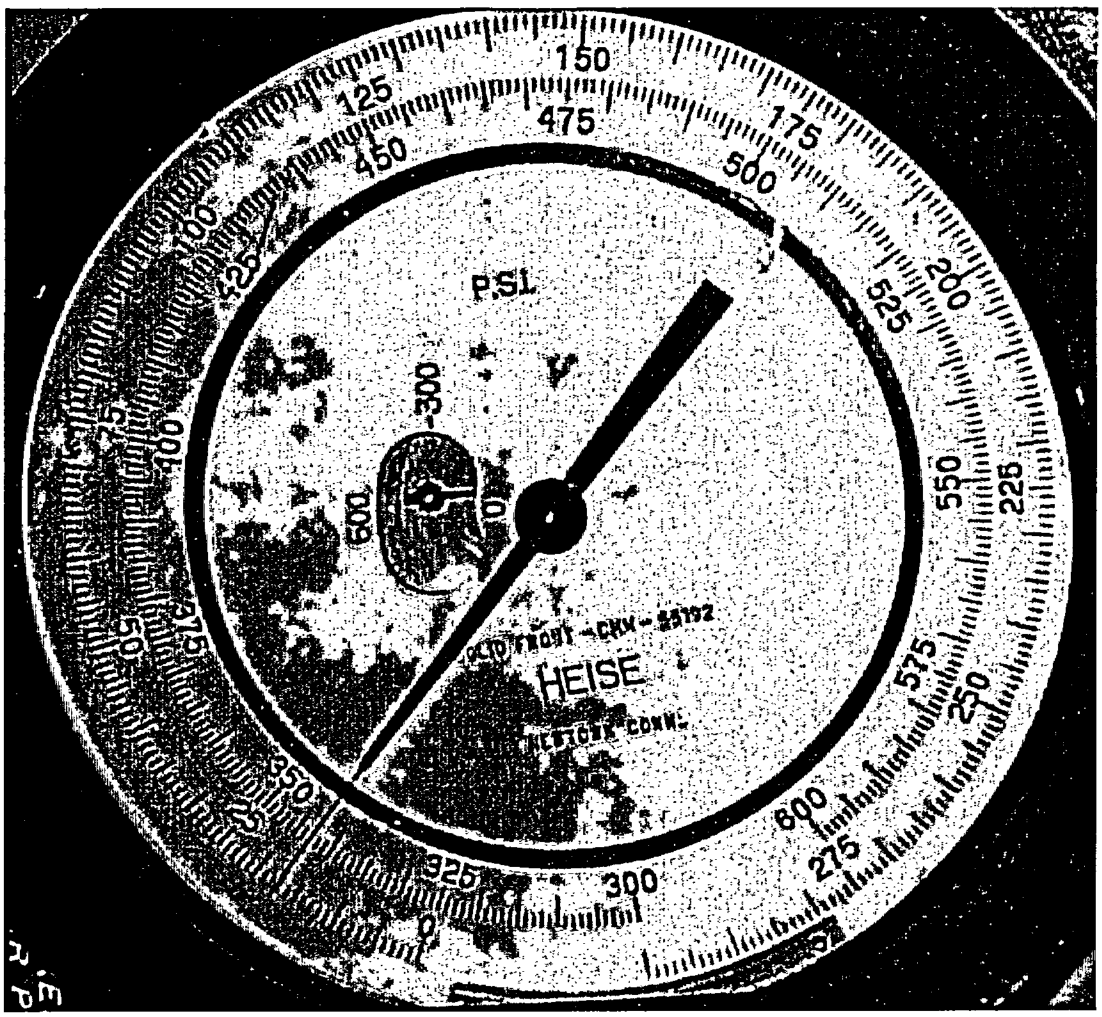
	Suction Gauge Range	Suction Pressure Accuracy	Discharge Gauge Range	Discharge Pressure Accuracy	Total Inaccuracy
Turkey Point	0 – 600 psig	0.25 % (1.5 psig)	0 – 600 psig	0.25 % (1.5 psig)	3.0 psig
Group A or B Test	0 – 60 psig	2.0 % (1.2 psig)	0 – 360 psig	2.0 % (7.2 psig)	8.4 psig
Comprehensive Test	0 – 60 psig	0.5 % (0.3 psig)	0 – 360 psig	0.5 % (1.8 psig)	2.1 psig

10 CFR 50.55a Request Number PR-04

(Continued)

Attachment 2

RHR Suction and Discharge Pressure Gauge



Enclosure 5

PR-05

No Comprehensive Test for Certain Group A Pumps

10 CFR 50.55a Request Number PR-05

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. <u>ASME Code Component(s) Affected</u>

3P201A	3A Charging Pump
3P201B	3B Charging Pump
3P201C	3C Charging Pump
3P211A	3A Component Cooling Water Pump
3P211B	3B Component Cooling Water Pump
3P211C	3C Component Cooling Water Pump
3P9A	3A Intake Cooling Water Pump
3P9B	3B Intake Cooling Water Pump
3P9C	3C Intake Cooling Water Pump
4P201A	4A Charging Pump
4P201B	4B Charging Pump
4P201C	4C Charging Pump
4P211A	4A Component Cooling Water Pump
4P211B	4B Component Cooling Water Pump
4P211C	4C Component Cooling Water Pump
4P9A	4A Intake Cooling Water Pump
4P9B	4B Intake Cooling Water Pump
4P9C	4C Intake Cooling Water Pump

2. <u>Applicable Code Edition and Addenda</u>

ASME OM Code 1998 Edition through 2000 Addenda

3. <u>Applicable Code Requirement</u>

ISTB-5123, 5223, 5323 – Comprehensive Test Procedure.

4. <u>Reason for Request</u>

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-5123, 5223, and 5323. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The subject pumps are all categorized as group A pumps. These pumps are operated routinely during normal plant operations. Each pump is tested in accordance with its associated group A procedure. All of these pumps are operated at conditions within +/- 20% of the design flow rate when tested each quarter (see attachments to this request). All of the required Code parameters are measured and compared to their respective reference values.

10 CFR 50.55a Request Number PR-05
(Continued)

At least once every two years, during the group A test, a full spectrum vibration analysis will be performed above the required vibration analysis by the Code. Additionally, these pumps are included in the station preventive maintenance program which requires a pump inspection and oil analysis to be performed periodically.

The intent of the Code required Comprehensive Test is to test the pump at substantial flow (biennially) such that pump degradation may be easily detected on the portion of the pump curve which is well sloped. Turkey Point tests each of these pumps at substantial flow (+/- 20% of design) each quarter.

Intake Cooling Water Pump

See Attachment 1, Intake Cooling Water Pump Curve

Inservice Testing Basis

The intake cooling water pump is required to operate to supply cooling water from the intake structure to the tube side of the component cooling water heat exchangers during design basis accident conditions to ensure heat removal capabilities of the component cooling water system [UFSAR 9.6.2]. The intake cooling water pumps supply cooling flow to the component cooling water and turbine plant cooling water system loads during normal plant operations, however, only one pump is required to satisfy design basis accident conditions. The C intake cooling water pump automatically starts on a loss of power or safety injection signal if either the A or B pump breaker is open. [UFSAR 9.6.2].

The intake cooling water pump is designed to deliver 16,000 gpm at 60 feet of developed head (approximately 26 psi) to the component cooling water heat exchangers during design basis accident conditions [DBD-019].

Inservice Testing

The Intake Cooling Water Pumps are vertical line shaft pumps. These pumps are tested each quarter in accordance with Turkey Point Operating Surveillance *-OSP-19.1. Each pump is tested at a flow rate of 15,400 gpm, which corresponds to the design accident flow rate of the system. During this test, the flow rate is set, while the differential pressure is measured. After the stabilization period, all required parameters of Table ISTB-3000-1 are measured and compared to the acceptance criteria of Table ISTB-5200-1. The design flow rate of the Intake Cooling Water Pump is 16,000 gpm. The test point of 15,400 gpm, corresponds to 96.25% of the design flow rate.

10 CFR 50.55a Request Number PR-05
(Continued)

Test Results

The following data tables indicate the hydraulic test data collected for the last inservice tests. Based on these results, pump operation has been acceptable. Applying the group A pump acceptance criteria to these pumps indicates acceptable performance. Additionally, if the comprehensive acceptance criteria would be applied, the data would also indicate acceptable performance.

3A ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/13/03	15400	27.5	27.1	25.7 – 29.8	25.7 – 27.9

3B ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/13/03	15400	27.6	27.1	25.7 – 29.8	25.7 – 27.9

3C ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/13/03	15400	26.1	26.8	25.5 – 29.5	25.5 – 27.6

4A ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/20/03	15400	26.2	27.2	25.8 – 29.9	25.8 – 28.0

4B ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/20/03	15400	26.7	28.0	26.6 – 30.8	26.6 – 28.8

4C ICW Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
9/20/03	15400	25.8	26.8	25.5 – 29.5	25.5 – 27.6

<u>Charging Pumps</u>

Inservice Testing Basis

The charging pump is required to pump water from the emergency boration makeup system or RWST to the reactor coolant system during emergency boration conditions [UFSAR 9.2.2/14.2.6]. The charging pump is designed to deliver 77 gpm @2385 psig of developed head to the reactor coolant system [UFSAR Table 9.2-3].

10 CFR 50.55a Request Number PR-05
(Continued)

The charging pump takes suction from the volume control tank and discharges to the reactor coolant system through the tube side of the regenerative heat exchanger during normal operations [UFSAR 9.2]. This function is not required for safe shutdown or accident mitigation.

Inservice Testing

The Charging Pumps are positive displacement pumps. These pumps are tested each quarter in accordance with Turkey Point Operating Surveillance *-OSP-47.1. Each pump is tested at a flow rate of greater than 81 gpm, which corresponds to the design accident flow rate of the system. During this test, speed is set, while the resistance of the system can not be varied. Since the pump is a positive displacement type pump both the flow rate and the discharge pressure are measured. After the stabilization period, all required parameters of Table ISTB-3000-1 are measured and compared to the acceptance criteria of Table ISTB-5300-2. The design flow rate of the Charging Water Pump is 77 gpm. The test point of 81 gpm corresponds to 105 % of the design flow rate.

The Charging Pump is a positive displacement pump. No pump curve is provided.

Test Results

The following data tables indicate the hydraulic test data collected for the last inservice tests. Based on these results, pump operation has been acceptable. Applying the group A pump acceptance criteria to these pumps indicates acceptable performance. Additionally, if the comprehensive acceptance criteria would be applied, the data would also indicate acceptable performance.

3A Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
8/24/03	2350	2350	2186 - 2585	2186 - 2420	77.3	81.3	77.2 – 89.4	77.2 – 83.7

3B Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
8/17/03	2350	2340	2176 – 2574	2176 - 2410	77.2	81.0	77.0 – 89.1	77.0 – 83.4

3C Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
8/24/03	2325	2350	2186 – 2585	2186 - 2420	77.8	81.4	77.3 – 89.5	77.3 – 83.8

10 CFR 50.55a Request Number PR-05 (Continued)

4A Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
7/02/03	2350	2300	2139 - 2530	2139 - 2369	81.1	81.5	77.4 – 89.7	77.4 – 83.9

4B Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
9/13/03	2390	2400	2232 - 2640	2232 - 2472	80.5	81.0	77.0 - 89.1	77.0 - 83.4

4C Charging Pump Test Results

Date	Press	Press. Ref	Group A Accept Range	Comp Accept Range	Flow	Flow Ref	Group A Accept Range	Comp Accept Range
9/13/03	2450	2390	2223 - 2629	2223 - 2461	80.5	82.0	77.9 - 90.2	77.9 - 84.5

Component Cooling Water Pump

See Attachment 2, Component Cooling Water Pump Curve

Inservice Testing Basis

The component cooling water pump is required to operate to supply cooling water to the shell side of the component cooling water heat exchangers during design basis accident conditions to ensure heat removal capabilities of the component cooling water system [UFSAR 9.3.2]. One pump and three component cooling water heat exchangers are normally operated to provide cooling water for various components located in the auxiliary and containment buildings [UFSAR 9.3.1]. Following a loss-of-coolant accident, one component cooling water pump and two component cooling water heat exchangers accommodate the heat removal loads [UFSAR 9.3.3].

The component cooling water pump is designed to deliver 7,500 gpm at 185 feet of developed head to the component cooling water heat exchangers during design basis accident conditions [UFSAR Table 9.3-1].

The pump is operated during normal operations and shutdowns to supply cooling water for the component cooling water system loads [UFSAR 9.3.2]. These functions are not required for safe shutdown or accident mitigation.

10 CFR 50.55a Request Number PR-05 (Continued)

Inservice Testing

The Component Cooling Water Pumps are centrifugal pumps. These pumps are tested each quarter in accordance with Turkey Point Operating Surveillance *-OSP-30.1. Due to the configuration of the system the A pump is tested at a flow rate of 6,500 gpm and the B and C pumps are tested at 8500 gpm each quarter. During this test, the flow rate is set, while the differential pressure is measured. After the stabilization period, all required parameters of Table ISTB-3000-1 are measured and compared to the acceptance criteria of Table ISTB-5100-1. The design flow rate of the Component Cooling Water Pump is 7,500 gpm. Therefore the test point of 6,500 gpm, corresponds to 86.7% of the design flow rate for the A pumps while the test point of 8,000 gpm corresponds to 106.7% for the B and C pumps.

Test Results

The following data tables indicate the hydraulic test data collected for the last inservice tests. Based on these results, pump operation has been acceptable. Applying the group A pump acceptance criteria to these pumps indicates acceptable performance. Additionally, if the comprehensive acceptance criteria would be applied, the data would also indicate acceptable performance.

3A Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
7/6/03	6500	84.0	87.7	78.9 – 96.5	81.6 – 90.3

3B Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
7/6/03	8000	76.0	79.0	71.1 – 86.9	73.5 – 81.4

3C Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
8/3/03	8000	78.0	82.5	74.3 – 90.8	76.7 – 85.0

4A Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
6/29/03	6500	83.0	87.7	78.9 – 96.5	81.6 – 90.3

4B Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
6/27/03	8000	77.0	78.5	70.7 – 86.4	73.0 – 80.9

4C Component Cooling Water Pump Test Results

Date	Flow	DP	DP Reference	Group A Accept	Comprehensive Accept
6/29/03	8000	78.0	78.2	70.4 – 86.0	72.7 – 80.5

10 CFR 50.55a Request Number PR-05
(Continued)

5. Proposed Alternative and Basis for Use

As an alternative to performing Comprehensive Pump tests biennially, the subject pumps will be tested each quarter at +/- 20% of the design flow rate. The required inservice test parameters of Table ISTB-3000-1 based on pump type will be measured and compared to their reference values. The group A pump test acceptance criteria will be applied. Additionally, once every two years, full spectrum analysis will be performed above the Code required vibration measurements. Continued Preventive Maintenance, including periodic pump inspections and oil analysis, on each pump will assist in determining overall mechanical and hydraulic pump health.

Based on the preventive maintenance inspection results, full spectrum analysis, and continued quarterly group A testing at +/- 20% of design pump flow, an accurate assessment of pump health and operational readiness is determined on a quarterly frequency.

This alternative provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4^{th} 120 month interval.

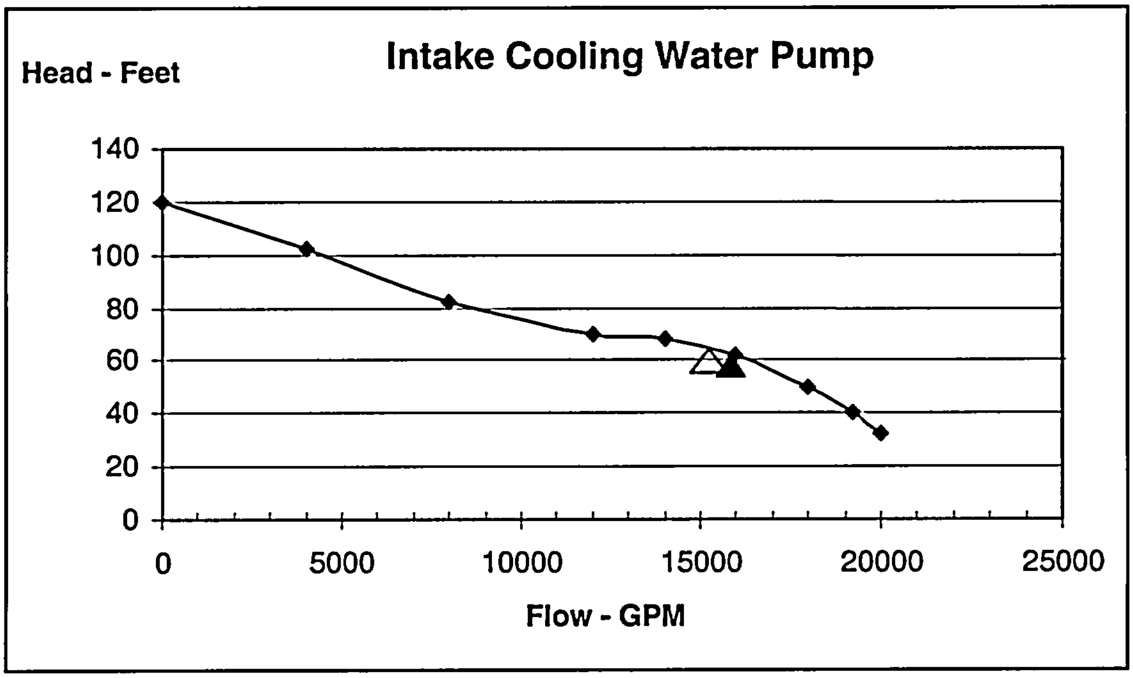
7. Precedents

None.

10 CFR 50.55a Request Number PR-05
(Continued)

Attachment 1

Intake Cooling Water Pump Curve



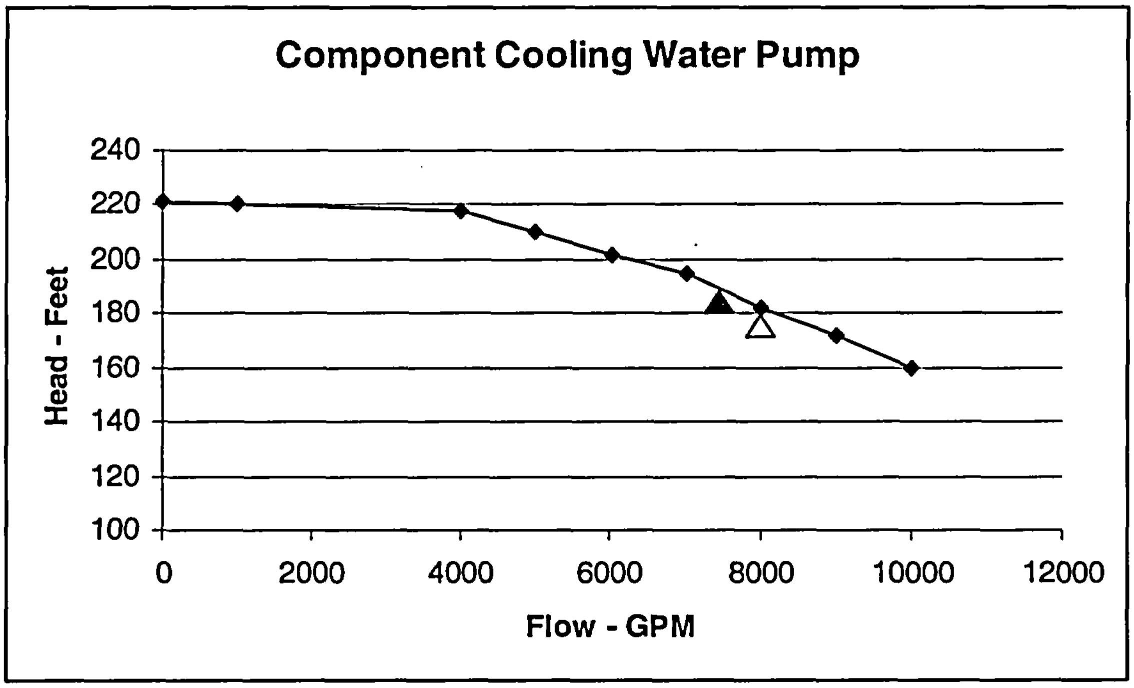
▲ Pump Design Point (16000 gpm @ 60 feet of developed head)

△Pump Test Point (set parameter is flow at 15400 gpm)

10 CFR 50.55a Request Number PR-05
(Continued)

Attachment 2

Component Cooling Water Pump Curve



▲ Pump Design Point (7500 gpm @ 185 feet of developed head)

△ Pump Test Point (set parameter is flow at 8000 gpm)

Enclosure 6

PR-06

Categorization of Residual Heat Removal Pumps as Group B

(Modes 1-4) and Group A (Modes 5-6)

10 CFR 50.55a Request Number PR-06

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. **ASME Code Component(s) Affected**

Pump Number	Function
3P210A	Residual Heat Removal
3P210B	Residual Heat Removal
4P210A	Residual Heat Removal
4P210B	Residual Heat Removal

2. **Applicable Code Edition and Addenda**

ASME OM Code 1998 Edition through 2000 Addenda

3. **Applicable Code Requirement**

ISTB-1400(b), "identify each pump to be tested in accordance with the rules of this Subsection and categorize it as either a group A or group B pump and list the pumps in the plant records (see ISTB-9000). A pump that meets both group A and group B definitions shall be categorized as a group A pump."

4. **Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTB-1400(b). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The Residual Heat Removal pumps meet the categorization requirements of group A pumps in that they are operated routinely during plant shutdowns (Mode 5-6). However, these pumps also meet the requirements of group B, in that during normal operation (Modes 1-4) they are not operated except for testing.

During normal power operations, Modes 1-4, the residual heat removal pump is in a standby condition and is considered an essential part of the Emergency Core Cooling System (ECCS). The pump starts automatically upon receipt of a safety injection signal taking suction from the RWST during the injection phase of an accident. The pump is then aligned to take suction from the containment sump during the recirculation phase of an accident. The pump discharges to the reactor coolant system via the residual heat removal heat exchangers. The pump may also be aligned to pump to the suction of either the safety injection pumps or the containment spray pumps depending on plant emergency conditions. During normal plant shutdowns, the residual heat removal pump is used to cool down the reactor coolant system (shutdown cooling). This shutdown cooling function is not required for safe shutdown or accident mitigation.

10 CFR 50.55a Request Number PR-06
(Continued)

ASME ISTB-1400(b) states that if a pump meets both group A and group B definitions, it shall be categorized as a group A pump. The Residual Heat Removal pumps are tested during normal operation, Modes 1-4, using the minimum flow recirculation loop. This current test is essentially a group B test in that the pump is operated at low flow conditions (approximately 300 gpm) on minimum flow recirculation. The design flow rate of the Residual Heat Removal Pumps is 3750 gpm. This flow rate can only be achieved during shutdown periods (Modes 5-6) when injection into the reactor coolant system is possible. See Attachment 1, RHR System Diagram. Attachment 2, RHR Pump Characteristic Curve is also supplied,

The performance of a group A test at these low flow conditions does not reflect the intent of the Code for group A tests. Additionally, these pumps can not be tested as Group A or Comprehensive in these modes due to using the minimum flow recirculation line.

5. Proposed Alternative and Basis for Use

Turkey Point Nuclear Plant will test the Residual Heat Removal pumps as standby (group B) during Modes 1-4 and as routinely operated pumps (group A) when the plant is in Modes 5-6. When in cold shutdown or refueling, a comprehensive test may be substituted for the group A test should the comprehensive test schedule come due. ISTB-5000 permits substitution of a comprehensive test for a group A test.

This alternative is consistent with Generic Letter 89-04, Position 9, in which the NRC determined that, in cases where flow can only be established through a non-instrumented, minimum flow path during quarterly pump testing, and a path exists at cold shutdown or refueling outages to perform a test of the pump under full or substantial flow conditions, the increased interval is an acceptable alternative to the Code requirements.

Therefore testing the Residual Heat Removal pumps as group B during Modes 1-4 and as group A during Modes 5-6 provides reasonable assurance of the operational readiness of the pumps and provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4th 120 month interval.

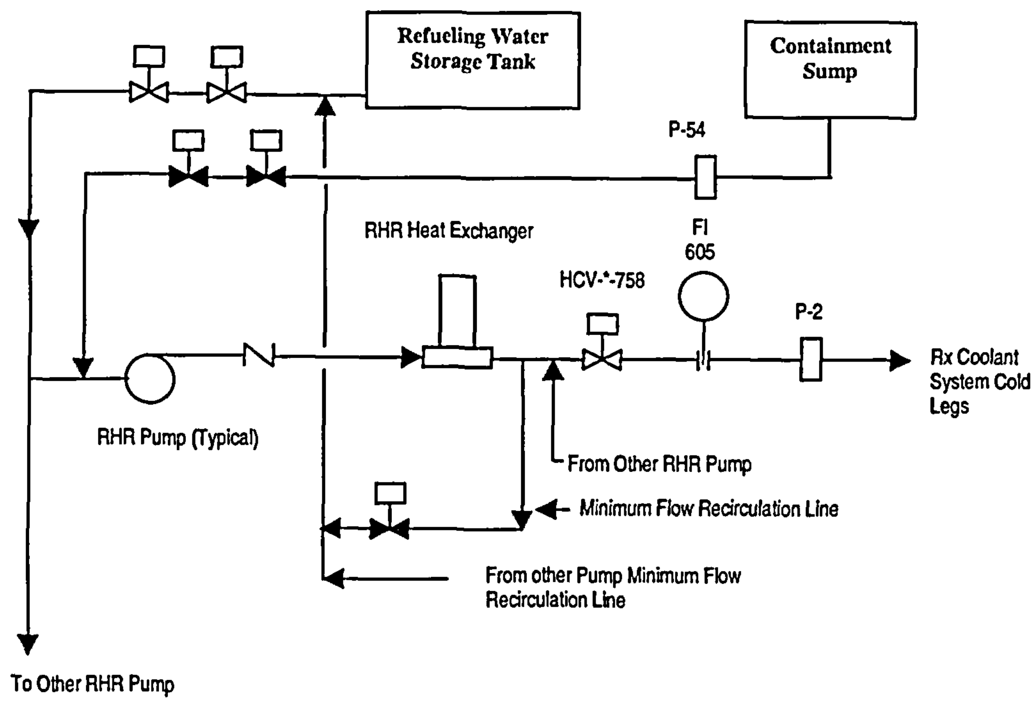
7. Precedents

Similar relief request PR-12 was previously approved for Calvert Cliffs Nuclear Power Plant on May 16, 2002. Docket Nos. 50-317 and 50-318, TAC Nos. MB3782 and MB3783

10 CFR 50.55a Request Number PR-06
(Continued)

Attachment 1

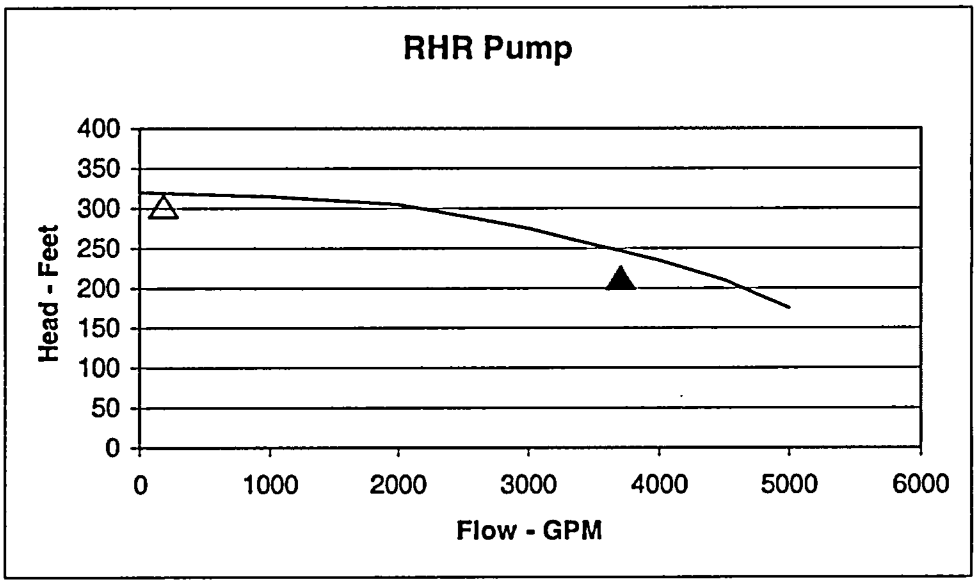
RHR System Diagram



<u>10 CFR 50.55a Request Number PR-06</u>
(Continued)

Attachment 2

RHR Pump Characteristic Curve



▲ - Full Flow Test Point (3750 gpm @ 240 feet of developed head)

△ - Minimum Flow Test Point (Approximately 300 gpm)

Enclosure 7

VR-01

Exercise Testing of Option B Check Valves

with Only a Closed Safety Function

10 CFR 50.55a Request Number VR-01

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. **ASME Code Component(s) Affected**

Valve Number	Class	Category	Function
BA-3-201	2	AC	Containment Breathing Air Isolation Check Valve
3-40-340A	2	AC	Instrument Air to Containment Check Valve
3-40-336	2	AC	Instrument Air to Containment Check Valve
3-10-567	2	AC	Primary Water to Containment Check Valve
3-298A	1	AC	Reactor Coolant Pump Seal Injection Check Valve
3-298B	1	AC	Reactor Coolant Pump Seal Injection Check Valve
3-298C	1	AC	Reactor Coolant Pump Seal Injection Check Valve
3-945E	2	AC	Nitrogen Supply to Accumulators Check Valve
3-518	2	AC	Nitrogen Supply to Pressurizer Relief Tank
3-519	2	AC	Nitrogen Supply to Pressurizer Relief Tank
BA-4-201	2	AC	Containment Breathing Air Isolation Check Valve
4-40-340A	2	AC	Instrument Air to Containment Check Valve
4-40-336	2	AC	Instrument Air to Containment Check Valve
4-10-567	2	AC	Primary Water to Containment Check Valve
4-298A	1	AC	Reactor Coolant Pump Seal Injection Check Valve
4-298B	1	AC	Reactor Coolant Pump Seal Injection Check Valve
4-298C	1	AC	Reactor Coolant Pump Seal Injection Check Valve
4-945E	2	AC	Nitrogen Supply to Accumulators Check Valve
4-518	2	AC	Nitrogen Supply to Pressurizer Relief Tank
4-519	2	AC	Nitrogen Supply to Pressurizer Relief Tank

2. **Applicable Code Edition and Addenda**

ASME OM Code 1998 Edition through 2000 Addenda

3. **Applicable Code Requirement**

ISTC-3510 Exercising Test Frequency, states that "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC 3560, ISTC-5221, and ISTC-5222.".

Specifically, relief is requested from performing both the open and closed exercise tests in accordance with ISTC-3510. These valves will be exercised open and closed commensurate 10CFR50 Appendix J Option B test frequency requirements.

10 CFR 50.55a Request Number VR-01
(Continued)

4. **Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTC-3510. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The subject valves are all categorized as AC and are all considered containment isolation valves per the plant safety analysis. All of the subject valves have a safety function to close in order to isolate containment from their respective non-safety related systems during a Loss of Coolant Accident (LOCA) requiring containment isolation. The open function for each of these valves is considered a non-safety function since the systems are not required to shut the plant down to a safe shutdown condition, maintain safe shutdown or mitigate the consequences of an accident (See IST Basis Documents – Safety Function in Attachment 1). However, the current ASME OM Code requirements complied with by Turkey Point (1998 Edition through 2000 Addenda) for the 4th 120-Month Interval, requires testing of the non-safety "open" direction function of each of these check valves. The Code required frequency specified in ISTC-3520 is once every quarter with the exceptions listed above. Those exceptions which apply to check valves are ISTC-3520, ISTC-5221 and ISTC-5222.

Since these valves can be exercised adequately with flow in the open direction and seat leakage tested in the reverse direction, they are not candidates for a disassembly and examination program or condition monitoring program as delineated in ISTC-5221 and ISTC-5222 respectively.

Therefore the frequency requirements of ISTC-3520 would typically apply. That is, if exercising is not practicable during normal power operations the exercising shall be performed during cold shutdowns. If exercising is not practicable during normal power operations and cold shutdown, exercising shall be performed during refueling outages.

Each of the subject valves is required to be exercised both open and closed and seat leakage tested in accordance with the inservice testing requirements of Table ISTC-3500-1, INSERVICE TESTING REQUIREMENTS. For all of the subject valves, the seat leakage test constitutes the exercise closed test. This frequency is in accordance with the Appendix J frequency, since the only safety function of the

10 CFR 50.55a Request Number VR-01
(Continued)

valves in the closed direction is for containment isolation only. (See ISTC-3620 and Attachment 1, IST Basis Documents – Safety Function)

The open, non-safety direction test, can only be performed using flow when the containment isolation seat leakage test is performed, and only during refueling outages when containment entry is possible. Since the individual valve being tested must have its system properly drained, vented, and aligned correctly prior to performing the seat leakage test, an opportune window will exist to perform the open check valve test using flow. Additionally, test personnel, radiation exposure, and time/labor involved will be significantly reduced by performing the open exercise test along with the seat leakage/closure test (keeping in mind that this open test is the non-safety position test).

On October 4, 1996, Turkey Point received a Safety Evaluation with approval to implement Option B of the 10CFR50 Appendix J Program. (Technical Specification Amendments 192/186 for Unit #3 and #4 respectively). This program permits the extension of the Appendix J seat leakage testing to a frequency corresponding to the specific valve performance. Valves whose leakage test results indicate good performance may have their interval of testing increased based on these test results. The Turkey Point administrative program which implements Appendix J Option B requires individual containment isolation valves to pass four successful seat leakage tests before it can be included in the Option B program.

5. <u>Proposed Alternative and Basis for Use</u>

For the subject valves, Turkey Point Nuclear Plant will perform the check valve closure test in conjunction with the seat leakage test at a frequency in accordance with 10CFR50 Appendix J. The corresponding check valve open test (non-safety direction) will be performed at the same interval as the check valve closure test. This interval may be adjusted to a frequency of testing commensurate with Option B of 10CFR50 Appendix J Type C leakage testing based on valve seat leakage performance.

The only safety function of these valves is to provide a containment isolation barrier. Since they are not connected to any ECCS system and the open function is not required for safe shutdown or accident mitigation, a seat leakage test is their primary functional test. By verification of forward flow, along with a seat leakage test, an adequate assessment of valve health may be determined.

Performance of the both the open and closed tests during the same frequency has been endorsed by the ASME OM Code as stated in ISTC-3522(a), which states that "open and closed tests need only be performed at an interval when it is

10 CFR 50.55a Request Number VR-01
(Continued)

practicable to perform both tests". Additionally, performance of the check valve open test will include verification of fluid flow to open the check valve. This test will be performed during the same surveillance which seat leakage tests the valve (*-OSP-51.5) and will be scheduled and documented in the plant record system. Corrective actions will be taken in accordance with ISTC-5224 as stated.

Additionally, all of the subject check valves are included in the plant Check Valve Program which monitors check valve test performance, work history, industry experience and vendor correspondence to determine preventive maintenance (PM) activities. The Turkey Point Option B program further monitors the performance of the valve in that the allowable seat leakage limits for each individual valve are administratively set well below the Appendix J limit.

Therefore, the ability to detect degradation and ensure the operational readiness of the subject check valves to perform their intended function is not jeopardized by performing the open and closed check valve tests at the same frequency as specified by Option B. This frequency of testing provides reasonable assurance of the operational readiness of the subject check valves and provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4th 120 month interval.

7. Precedents

None

10 CFR 50.55a Request Number VR-01
(Continued)

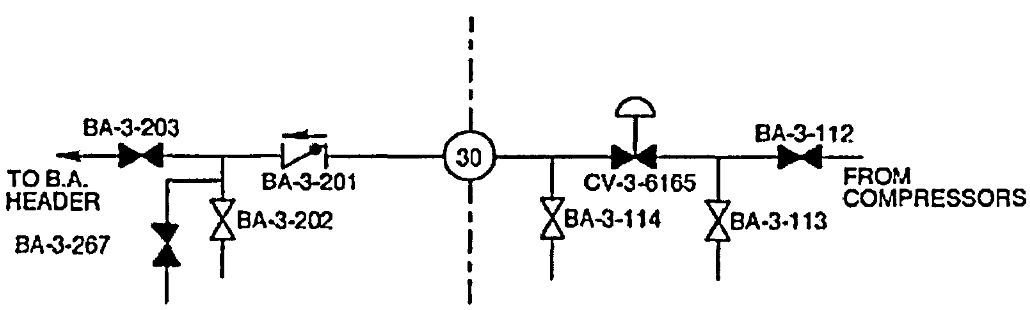
Attachment 1
IST Basis Documents – Safety Function

Valve Group – BA-201, Containment Breathing Air Isolation Check Valve

This check valve must close to isolate containment from the breathing air system. This valve provides containment isolation for Penetration 30. Penetration 30 is considered a non essential penetration which is not required to be in service post accident [UFSAR Table 6.6-1].

This valve opens to provide a flow path from the breathing air receiver to containment during cold shutdown or refueling [5613/5614-M-3101-1]. This function is not required for safe shutdown or accident mitigation. The breathing air system is only required to function during cold shutdown or refueling [0-OP-101]. Additionally, upstream air operated valve CV-*-6165 outside containment is administratively maintained in the locked and pinned closed position during normal plant operation [0-OSP-205].
This penetration is isolated during all modes of operation when containment integrity is required and is not in service during any emergency or post accident conditions [0-OP-101]. Therefore, this valve only performs a containment isolation function and is not required to open or close for any other safety function. Since the valve is normally closed, with the upstream piping administratively locked and pinned closed by CV-*-6165, and a dead leg exists downstream, this valve is considered passive. No exercising is required.

Penetration 30



Valve Group – 340A, Instrument Air to Containment Check Valve

This check valve must close to isolate containment from the non safety instrument air system. This valve provides containment isolation for Penetration 29 [UFSAR Table 6.6-1]. The valve opens to provide a flow path of instrument air to the containment supply header when the instrument air system is operating. This function is not required safe shutdown or accident mitigation since the instrument air system is non safety related. Safety related equipment normally supplied by the instrument air system is designed to either fail to the required safe position or is provided with a safety related backup pneumatic supply. [UFSAR 9.17]

10 CFR 50.55a Request Number VR-01
(Continued)

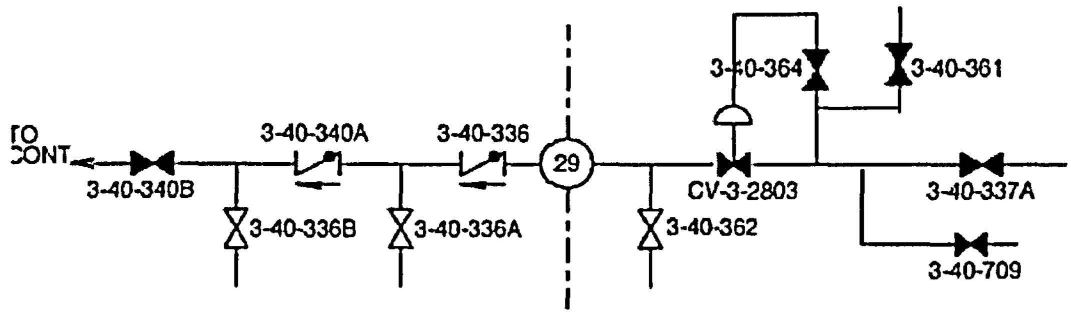
Attachment 1 (Continued)
IST Basis Documents – Safety Function

Valve Group – 336, Instrument Air to Containment Check Valve

This check valve must close to isolate containment from the non safety instrument air system. This valve provides containment isolation for Penetration 29 [UFSAR Table 6.6-1].

The valve opens to provide a flow path of instrument air to the containment supply header when the instrument air system is operating. This function is not required safe shutdown or accident mitigation since the instrument air system is non safety related. Safety related equipment normally supplied by the instrument air system is designed to either fail to the required safe position or is provided with a safety related backup pneumatic supply. [UFSAR 9.17]

Penetration 29



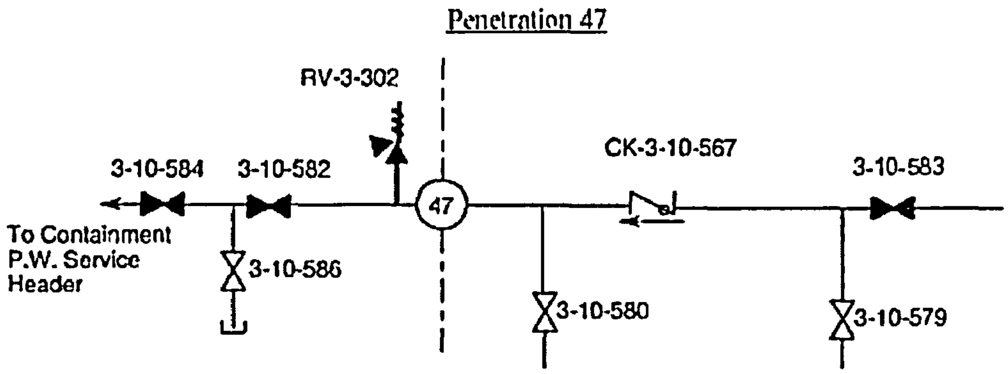
Valve Group – 567, Primary Water to Containment Check Valve

This check valve must close to isolate containment from the primary water system. This valve provides containment isolation for Penetration 47. Penetration 47 is considered a non essential penetration which is not required to be in service post accident [UFSAR Table 6.6-1].

This valve opens to provide a flow path from the primary water supply header to containment during cold shutdown or refueling. This function provides a supply source to facilitate maintenance and testing during outages [OP-020]. This function is not required for safe shutdown or accident mitigation. Additionally, downstream manual valve *-10-582 inside containment is administratively maintained in the locked closed position during normal power operations [OP-020/OSP-205]. The primary water system is not required for safe shutdown [UFSAR 9.6.2]. This penetration is isolated during all modes of operation when containment integrity is required and is not in service during any emergency or post accident conditions. Therefore this valve only performs a containment isolation function and not required to open or close for any other function. Since the valve is normally closed, since a dead leg exists downstream, this valve is considered passive. No exercising testing is required.

10 CFR 50.55a Request Number VR-01
(Continued)

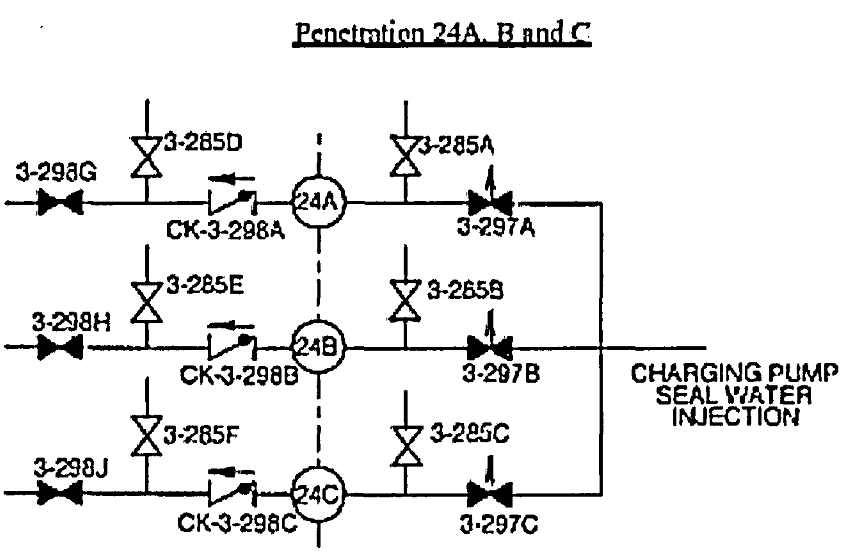
Attachment 1 (Continued)
IST Basis Documents – Safety Function



Valve Group – 298A/B/C, Reactor Coolant Pump Seal Injection Check Valve

This check valve must close to isolate containment from the chemical and volume control system during accident conditions when RCP seal injection flow is not required. The valve is considered a containment isolation valve for Penetration 24A/B/C [UFSAR Table 6.6-1].

This check valve opens to provide a flow path from the charging pump to the reactor coolant pump seals during normal plant operation [UFSAR 9.2.2]. This function is not required for safe shutdown or accident mitigation since the reactor coolant pumps are not required for safe shutdown or accident mitigation. [UFSAR 4.1.1] Additionally, the seal injection return valves (MOV-*-381 and MOV-8-6386) receive automatic closure signal to isolate the seal injection return flow path during a safety injection [UFSAR Table 6.6-1]



**10 CFR 50.55a Request Number VR-01
(Continued)**

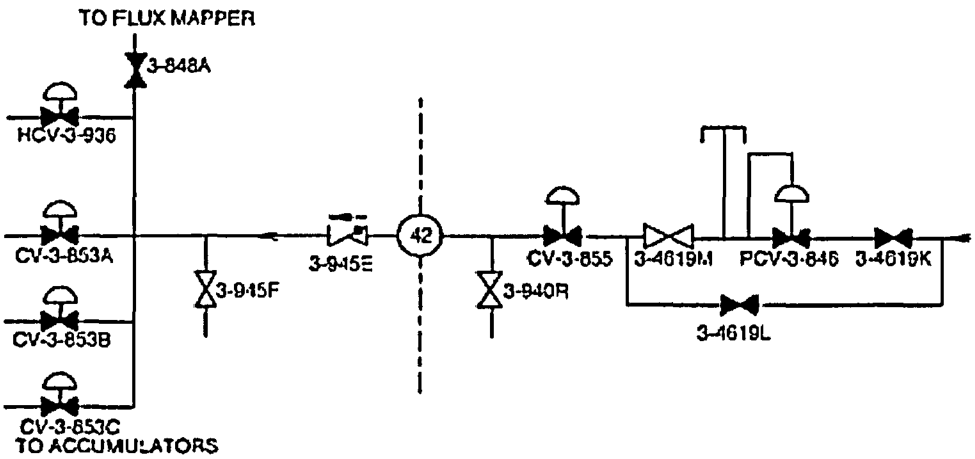
**Attachment 1 (Continued)
IST Basis Documents – Safety Function**

Valve Group – 945E, Nitrogen Supply to Accumulators Check Valve

This check valve must close to isolate containment from the non safety related nitrogen supply system during accident conditions. This valve is considered a containment isolation valve for Penetration 42 [UFSAR Table 6.6-1].

The valve opens to support safety injection accumulator refill to recharge and maintain the accumulators pressurized during normal power operations [*-OP-064]. This function is not required for safe shutdown or accident mitigation since the safety injection accumulators are considered a passive injection system and tank pressure is continuously monitored during normal plant operations [UFSAR 6.2].

Penetration 42



10 CFR 50.55a Request Number VR-01
(Continued)

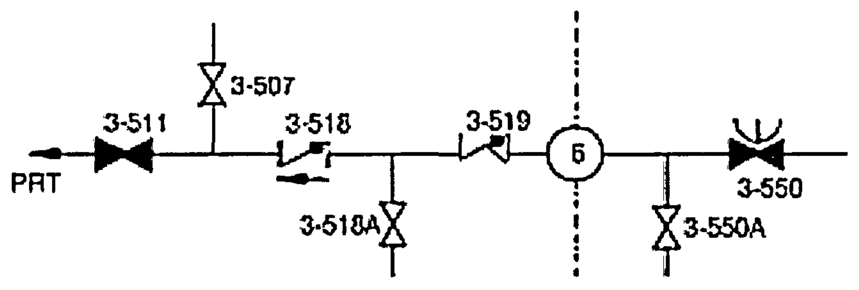
Attachment 1 (Continued)
IST Basis Documents – Safety Function

Valve Group – 518/519, Nitrogen Supply to Pressurizer Relief Tank

This check valve must close to isolate containment from the non safety nitrogen supply system. This valve provides containment isolation for Penetration 6 [UFSAR Table 6.6-1].

The valve opens to provide a flow path from the nitrogen supply header to the pressurizer relief tank. This function is not required safe shutdown or accident mitigation since the nitrogen system is non safety related. The pressurizer relief tank is designed for full vacuum conditions to prevent tank collapse if the tank contents cool without nitrogen being supplied. [UFSAR 4.2]

Penetration 6



Enclosure 8

VR-02

Position Verification Performed in Accordance

With Appendix J Seat Leakage Testing Frequency

For Solenoid Operated Valves

10 CFR 50.55a Request Number VR-02

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. **ASME Code Component(s) Affected**

Valve Number	Class	Category	Function
SV-3-6385	2	A	Pressurizer Relief Tank Vent Sample Isolation
SV-3-6427A	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-3-6427B	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-3-6428	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-3-2911	2	A	Continuous Containment Air Monitor Isolation
SV-3-2912	2	A	Continuous Containment Air Monitor Isolation
SV-3-2913	2	A	Continuous Containment Air Monitor Isolation
SV-4-6385	2	A	Pressurizer Relief Tank Vent Sample Isolation
SV-4-6427A	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-4-6427B	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-4-6428	2	A	Reactor Coolant System Hot Leg Sample Isolation
SV-4-2911	2	A	Continuous Containment Air Monitor Isolation
SV-4-2912	2	A	Continuous Containment Air Monitor Isolation
SV-4-2913	2	A	Continuous Containment Air Monitor Isolation

2. **Applicable Code Edition and Addenda**

ASME OM Code 1998 Edition through 2000 Addenda

3. **Applicable Code Requirement**

ISTC-3700 Position Verification Testing, states "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."

Specifically, relief is requested from performing the position indication verification on a 2 year frequency. Position indication verification will be performed at a frequency commensurate with the Option B test frequency for performing leakage rate testing.

4. **Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3), relief is requested from the requirement of ASME OM Code ISTC-3700. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

10 CFR 50.55a Request Number VR-02
(Continued)

The subject valves are all categorized as AC and are all considered containment isolation valves per the plant safety analysis. All of the subject valves have a safety function to close in order to isolate containment from their respective non-safety related systems during a Loss of Coolant Accident (LOCA) requiring containment isolation.

Since these valves are considered containment isolation valves, they are each individually seat leakage testing in accordance with 10CFR50 Appendix J. The test arrangement for each valve is listed in Attachment 1 – Local Leak Rate Test Diagrams. Note that only the test arrangements for Unit #3 are provided in the attachment. Unit #4 is typical.

Each of the subject valves is a solenoid operated valve designed such that the position of the valve is not locally observable. The design of these valves is such that the coil position is internal to the valve body and not observable in either the energized or de-energized state. See Attachment 2 – Typical Solenoid Valve Diagram, which is typical for the subject valves.

In accordance with ISTC-3700, where local observation is not possible, other indications shall be used to verify valve position. The method used a Turkey Point is at pressure test using the local leakage rate testing equipment. This method involves pressurizing the containment penetration volume to approximately 40 psia, and verifying the penetration remains pressurized while the valve is indicating closed on the main control room board. The valve is then opened using the control switch in the main control room. A decrease in pressure is then verified along with valve position indicating open in the main control room. This method satisfies the requirement for position indication verification and ensures that the indicating system accurately reflects the valve position.

Since each of these valves is seat leakage tested using local leakage rate testing equipment during refueling outages, the current leakage rate tests have been modified to also perform the position indication verification test at the same time. Since the individual valve being tested must have its system properly drained, vented, and aligned correctly prior to performing the seat leakage test, an opportune window exists to perform the position indication verification. Additionally, test personnel, radiation exposure, and time/labor involved will be significantly reduced by performing the position indication verification test along with the seat leakage test.

On October 4, 1996, Turkey Point received a Safety Evaluation with approval to implement Option B of the 10CFR50 Appendix J Program. (Technical Specification Amendments 192/186 for Unit #3 and #4 respectively). This program permits the extension of the Appendix J seat leakage testing to a frequency corresponding to the specific valve performance. Valves whose leakage test results indicate good performance may have their interval of testing increased based on these test results. The Turkey Point administrative program which implements Appendix J Option B requires individual containment isolation valves to pass four successful seat leakage tests before it can be included in the Option B program.

10 CFR 50.55a Request Number VR-02
(Continued)

5. Proposed Alternative and Basis for Use

For the subject valves, Turkey Point Nuclear Plant will perform the position indication verification in conjunction with the seat leakage test at a frequency in accordance with 10CFR50 Appendix J. This interval may be adjusted to a frequency of testing commensurate with Option B of 10CFR50 Appendix J Type C leakage testing based on valve seat leakage performance.

Additionally, each of these subject valves is exercised on a quarterly frequency and their stroke times measured and compared to the ASME OM Code acceptance criteria. By continuing quarterly valve exercising and performance of the position indication verification and seat leakage test in accordance 10CFR50 Appendix J, an adequate assessment of valve health may be determined..

Therefore, the ability to detect degradation and ensure the operational readiness of the subject valves to perform their intended function is not jeopardized by performing the position indication verification test at the same frequency as specified by Option B. This frequency of testing provides reasonable assurance of the operational readiness of the subject valves and provides an acceptable level of quality and safety.

6. Duration of Proposed Alternative

This proposed alternative will be utilized for the entire 4^{th} 120 month interval.

7. Precedents

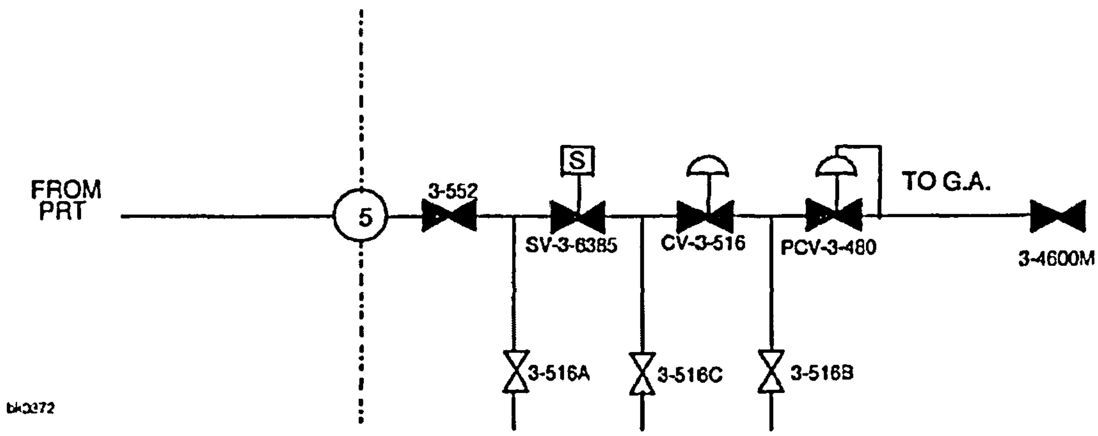
None

10 CFR 50.55a Request Number VR-02
(Continued)

Attachment 1
Local Leak Rate Test Diagrams

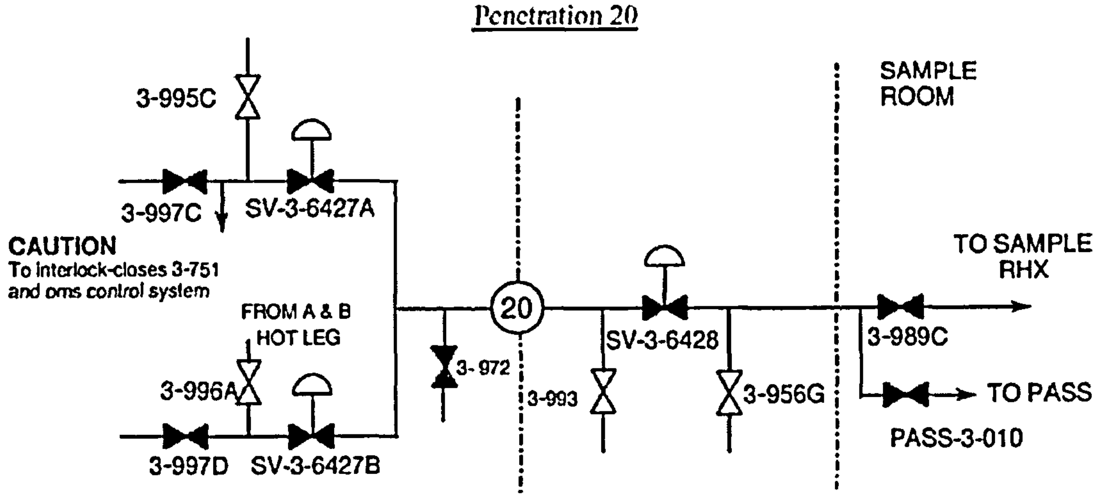
Valve Group – SV-*-6385

Penetration 5



Valve Group – SV-*-6427A/B and SV-*-6428

Penetration 20

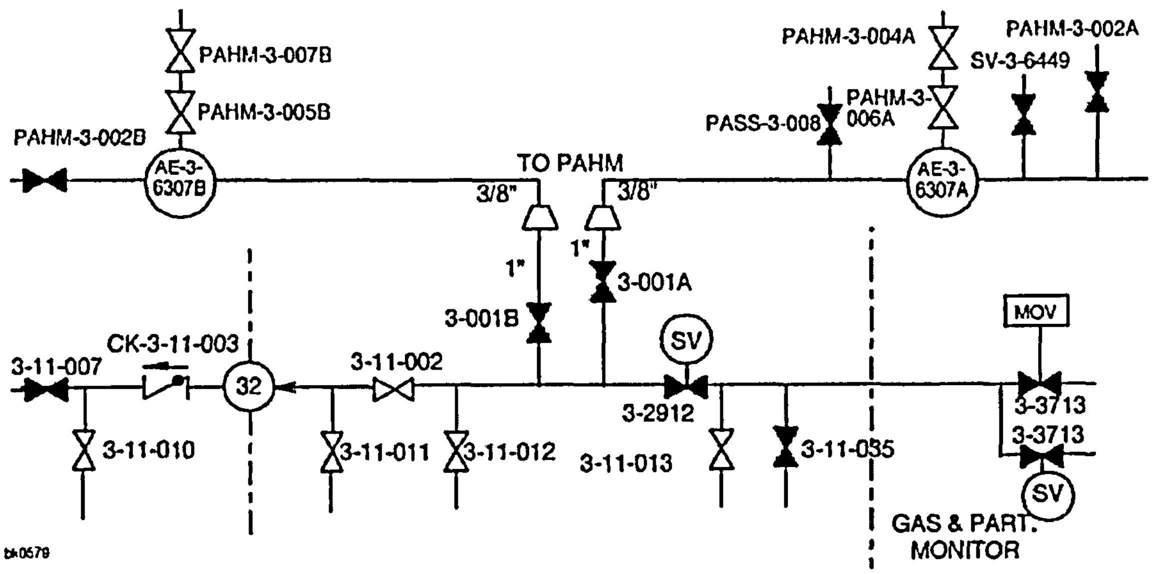


10 CFR 50.55a Request Number VR-02
(Continued)

Attachment 1
Local Leak Rate Test Diagrams (Continued)

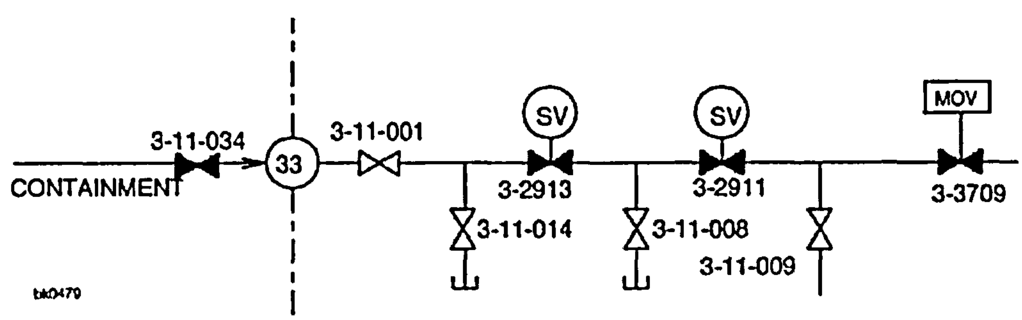
Valve Group – SV-*-2912

Penetration 32



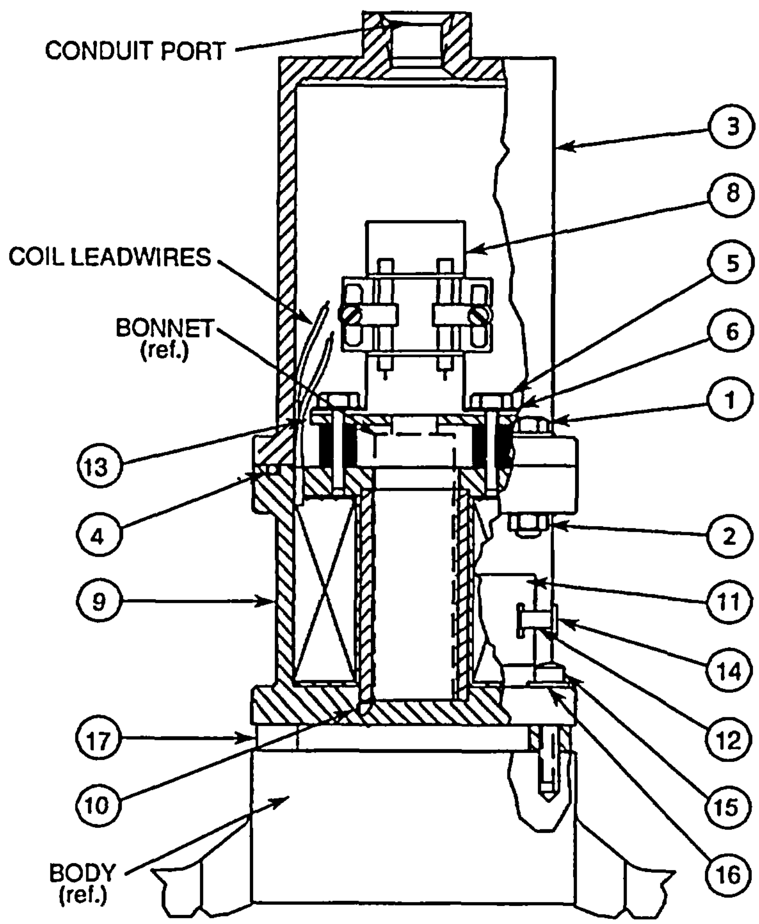
Valve Group – SV-*-2911/2912

Penetration 33



10 CFR 50.55a Request Number VR-02
(Continued)

Attachment 2
Typical Solenoid Valve Diagram



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Cover Bolts	10	Seal
2	Locknut	11	Nameplate
3	Cover	12	Strap
4	O-Ring	14	Buckle
5	Bolt	15	Bolt
6	Lockwasher	16	Lockwasher
8	Switch Block Assy.	17	Spacer
9	Coil Shell Assy.		

Enclosure 9

VR-03

Auxiliary Feedwater Pump Discharge Check Valve,

20-143,

Exercise Frequency

10 CFR 50.55a Request Number VR-03

Relief Requested
In Accordance with 10 CFR 50.55a(a)(3)(ii)

Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

1. **ASME Code Component(s) Affected**

Valve Number	Class	Category	Function
20-143	3	C	Auxiliary Feedwater Pump Train A Discharge Check Valve

2. **Applicable Code Edition and Addenda**

ASME OM Code 1998 Edition through 2000 Addenda

3. **Applicable Code Requirement**

ISTC-3510 Exercising Test Frequency, states that "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC 3560, ISTC-5221, and ISTC-5222.".

Specifically, relief is requested from performing the closed exercise test in accordance with ISTC-3510.

4. **Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (a)(3), relief is requested from the requirement of ASME OM Code, ISTC-3510. The basis of the relief request is that the Code requirement presents an undue hardship without a compensating increase in level of quality or safety.

The subject valve, 20-143 is categorized as C in the Inservice Testing Program with both an open and closed safety function. The following Inservice Testing Basis Document describes the valve functions in detail (See Attachment 1 – AFW System Diagram).

20-143 Basis

This check valve must open to provide a flow path from the auxiliary feedwater pump to the steam generators when the auxiliary feedwater pump is required to be operated. The auxiliary feedwater pump takes suction from the condensate storage tank. [UFSAR 9.11] This check valve must open to provide 466.8 gpm of auxiliary feedwater flow to the steam generators to maintain sufficient water level in the steam generators of both units. This flow rate is based on one AFW pump supplying a total of 233.4 gpm to three steam generators, the AFW system being shared between the units, and a loss of AC power simultaneously on both units. [UFSAR 14.1.12]

10 CFR 50.55a Request Number VR-03
(Continued)

20-143 Basis (continued)

This check valve must close to prevent diversion of flow when the Auxiliary Feedwater Pump C is supply the Train 1 discharge header. This function is necessary in the event that the Auxiliary Pump A is out of service with Pump C is supplying Train 1 auxiliary feedwater. This alignment is considered an infrequent operation (*-OP-75) and is not the preferred alignment of the system. Additionally, downstream manual isolation valve *-142 may be closed after alignment of the C pump to the Train 1 discharge header. However, for a brief period time, prior to closure of the manual valve, this check valve must close.

During normal system alignment, this check valve closes when the auxiliary feedwater pump is not in operation to prevent reverse flow. Since Train 1 is normally isolated from Train 2 closure of this valve to prevent diversion of flow is not required. [UFSAR 9.11] Isolation of the Train 1 auxiliary feedwater during a steam generator tube rupture event is accomplished by closing the downstream flow control valve on the affected steam generator [UFSAR 14.2.4/DBD-075]. Therefore the closure of this valve is not required for safe shutdown or accident mitigation during normal system alignment.

Inservice Testing Requirements – Exercise Open and Closed on a Quarterly Frequency

Check valve 20-143 is exercised open on a quarterly frequency with flow during the performance of the quarterly inservice test of the "A" Auxiliary Feedwater Pump. *-OSP-75.6 verifies that during pump testing, design accident flow rate is achieved downstream of the check valve (> 466.8 gpm). Achieving this flow rate verifies the ability of check valve 20-143 to open to the position required to fulfill its intended function and satisfies the open exercise test requirements.

To test check valve 20-143 closed requires removing the Train 1, (Auxiliary Feedwater Pump A) from service and performing a reverse flow test to verify check valve closure. Since the Auxiliary Feedwater System at Turkey Point is a shared system, when the Train 1 pump (AFW Pump A) is removed from service, both Unit #3 and #4 Train 1 is supplied by the C AFW pump. In accordance with Turkey Point Operating Procedure, OP-75, the C AFW pump is manually aligned to the Train 1 supply piping by alignment of manual valves (See Attachment 1). Prior to declaring the pump operable in this configuration the corresponding Inservice Test is performed on the C AFW pump to ensure AFW Train Operability requirements are met in accordance with plant Technical Specification Table 3.7-3. During this test the AFW Pump A Train 1 supply manual isolation valve *-142 may be left locked open to allow flow from the C AFW pump to close valve 10-142. Since this manual valve is the only isolation valve between the A AFW Pump Train 1 and AFW Pump C when it is aligned to Train 1, it is then closed to provide additional isolation should maintenance be required on the A AFW Pump. After testing is complete and the manual isolation valve (*-142) is closed, check valve 20-143 does not

10 CFR 50.55a Request Number VR-03
(Continued)

perform any safety function. Isolation of the out of service A AFW Pump is provided by the manual isolation valves.

Therefore, check valve 20-143 performs a closed safety function only during a limited time period when the AFW system Train 1 is being aligned from C AFW Pump.

Manual isolation valves, *-142 are included in the Inservice Testing Program and tested in accordance with ISTC.

5. **Proposed Alternative and Basis for Use**

Turkey Point Nuclear Plant will continue to perform the full open exercise test on check valve 20-143 during the quarterly during performance of the A AFW pump inservice test. The closure test of 20-143 will be performed only when the A AFW pump is taken out of service for maintenance. Since the C AFW pump will be operated to verify operability of Train 1 in accordance with Technical Specification Table 3.7-3 during this period, check valve 20-143 may be tested close.

To test this check valve closed requires removing the A AFW Pump from service and operating the C AFW Pump to verify closure. Although this test is not difficult, it does place undue hardship on the plant by placing the Auxiliary Feedwater System in an undesirable configuration without the designed redundancy. Since no function exists for check valve 20-143 during normal system alignment, the frequency of testing provides reasonable assurance of the operational readiness of the subject valve and provides an acceptable level of quality and safety. Strict adherence to the Code test frequency for testing the valve closed does not provide any increase in the level of quality or safety.

6. **Duration of Proposed Alternative**

This proposed alternative will be utilized for the entire 4th 120 month interval.

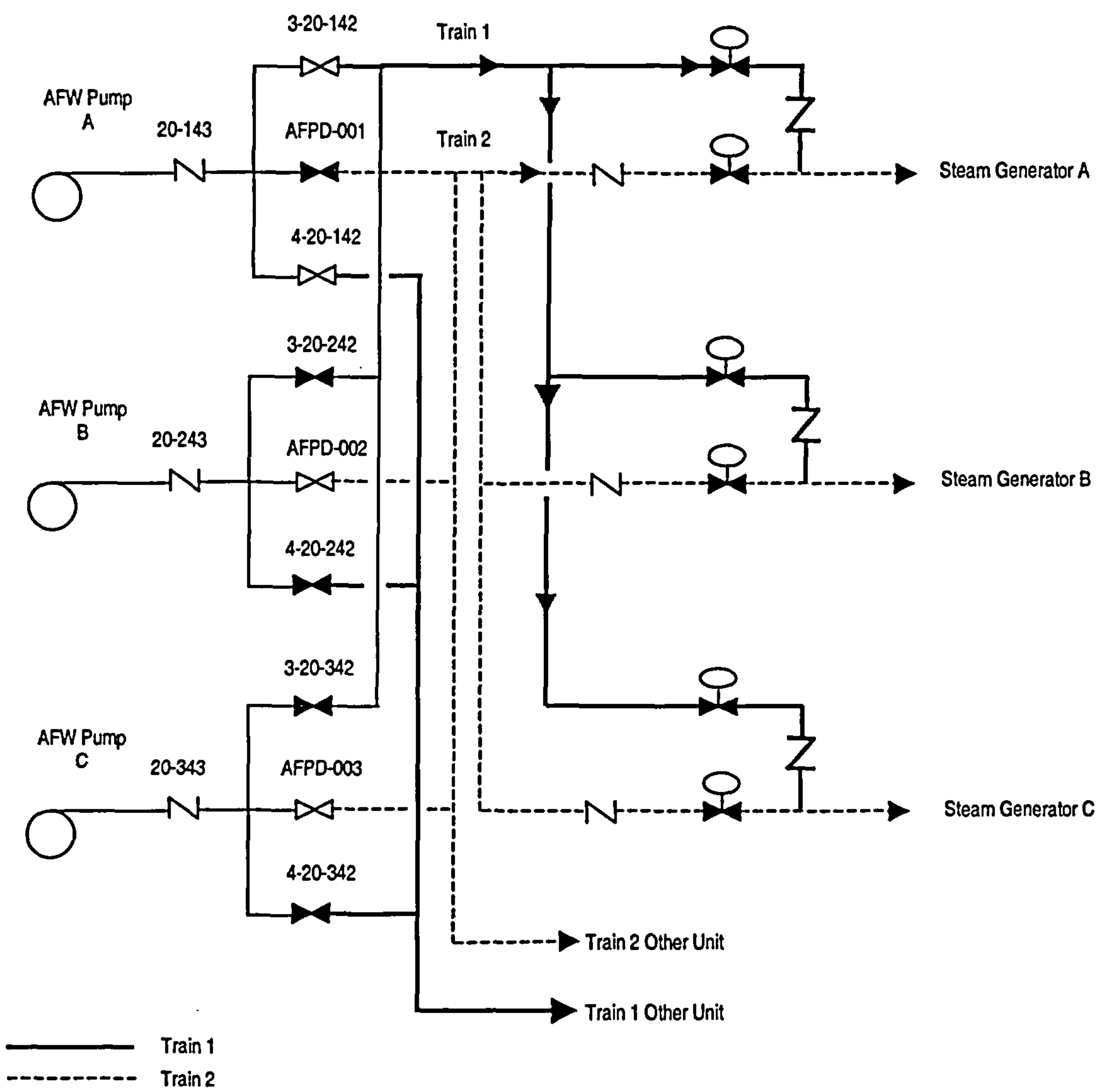
7. **Precedents**

None

10 CFR 50.55a Request Number VR-03
(Continued)

Attachment 1

AFW System Diagram



Note: Manual valves AFPD-001/002/003 and *-20-142/242/342 are normally locked in the positions shown.