JAMES A. FITZPATRICK

NUCLEAR POWER PLANT

INSERVICE TESTING PROGRAM FOR

PUMPS AND VALVES

SECOND INTERVAL

Revision 9

Effective Date 9-13-95

Prepared by: Christine Jones Date: 8-31-95
C. Jones/IST Engineer

Reviewed by: Art Giverson Date: 9-12-95
A. Giverson/System Eng. Support Lead

Approved by: Floyd C Edler Date: 9-12-95
F. Edler/Tech. Services Dept. Manager

Authorized for use by: John P Salmon Date: 9/13/95
H. Salmon/Site Executive Officer

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

Table of Contents

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

1.0 INTRODUCTION

Revision 9 of the James A. FitzPatrick ASME Inservice Testing (IST) Program will be in effect through the end of the second interval unless changed and re-issued for reasons other than the routine update required at the start of the third interval per 10 CFR 50.55a(f). The third inspection interval begins in September of 1996, reflecting a 14 extension approved by the NRC in a letter from J.E. Menning to W.J. Cahill on 10/26/94.

This document outlines the IST Program for J.A. Fitzpatrick based on the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition, through Winter 1981 Addenda (the Code). References in this document to "IWP" or "IWV" correspond to Subsections IWP and IWV, respectively, of the Code, unless otherwise noted.

2.0 APPLICABLE DOCUMENTS

This IST Program Plan was developed per the requirements of the following documents:

- Title 10, Code of Federal Regulations, Part 50
- Final Safety Analysis Report, J.A. Fitzpatrick Nuclear Power Plant
- J.A. FitzPatrick Technical Specifications
- ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition through Winter 1981 Addenda.
- NRC Safety Evaluation by the Office of Nuclear Reactor Regulation related to the Inservice Testing Program Relief Requests Power Authority of the State of New York James A. FitzPatrick Nuclear Power Plant Docket No. 50-333, Dated January 8, 1992.
- Safety Evaluation for Inservice Testing (IST) Program Relief Requests, James A. FitzPatrick Nuclear Power Plant, Dated July 28, 1992.

Other documents used for guidance in the development of the IST Program are listed below:

- NRC Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Contaminating Components of Nuclear Power Plants"
- Standard Review Plan NUREG 0800, Section 3.9.6, "Inservice Testing of Pumps and Valves"
- NRC Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs"
- NRC Minutes of the Public Meetings on Generic Letter 89-04

3.0 INSERVICE TESTING PROGRAM FOR PUMPS

3.1 Code Compliance

This IST Program for pumps is based on the requirements of Subsection IWP of the Code and any Code interpretations. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an alternative test provides an acceptable level of quality and safety, relief from Code requirements is requested pursuant to the requirements of 10 CFR 50.55a(g)(iii).

3.2 Allowable Ranges of Test Quantities

The allowable ranges for test parameters as specified in Table IWP-3100-2 will be used for all measurements of pressure, flow, and vibration except as provided for in specific relief requests approved by the NRC. In some cases the performance of a pump may be adequate to fulfill its safety function even though there may be a value of an operating parameter that falls outside the allowable ranges as set forth in Table IWP-3100-2.

3.3 Testing Intervals

The test frequency for pumps included in the IST Program will be as set forth in IWP-3400. A band of ±25 percent of the test interval may be applied to a test schedule as allowed by the J.A Fitzpatrick Technical Specifications to provide for operational flexibility.

3.4 Pump Program Table

Appendix A lists those pumps included in the IST Program with references to parameters to be measured and applicable requests for relief.

3.5 Relief Requests for Pump Testing

Appendix A includes relief requests related to pump testing.

4.0 INSERVICE TESTING PROGRAM FOR VALVES

4.1 Code Compliance

This IST Program for valves is based on the requirements of Subsection IWV of the Code and any Code interpretations or additional requirements imposed by Generic Letter 89-04. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an alternative test provides an acceptable level of quality and safety, relief from Code requirements is requested pursuant to the requirements of 10 CFR 50.55a(g)(iii) and Generic Letter 89-04.

4.2 Testing Intervals

The test frequency for valves included in the IST Program will be as set forth in IWV-3400, IWV-3500 and related relief requests. A band of ±25 percent of the test interval may be applied to a test schedule as allowed by the J.A. Fitzpatrick Technical Specifications to provide for operational flexibility. Where quarterly testing of valves is impractical or otherwise undesirable, testing may be performed during cold shutdown periods as permitted by IWV-3412(a). Justifications for this deferred testing are provided in Appendix B with elaboration of J.A. Fitzpatrick plant policy set forth in Relief Request NOTE V51.

4.3 Stroke Time Acceptance Criteria

The acceptance criteria for the stroke times of power-operated valves will be as set forth in IWV-3410 and using the guidance of Generic Letter 89-04.

4.4 Check Valve Testing

Full-stroke exercising of check valves to the open position using system flow requires that a test be performed whereby the predicted full accident condition flowrate through the valve be verified and measured. Any deviation to this requirement must satisfy the requirements of Generic Letter 89-04, Position 1.

4.5 Valve Program Table

Appendix B lists those valves included in the IST Program with references to required testing, respective test intervals, applicable requests for relief and cold shutdown justifications.

4.6 Relief Requests for Valve Testing

Appendix B includes all relief requests and cold shutdown justifications related to valve testing.

5.0 SYSTEMS SUBJECT TO TESTING

SYSTEM #	SYSTEM NAME	DRAWING #
01-125	Standby Gas Treatment	FM-48A
02-2	Reactor Water Recirculation	FM-26A
02-3	Nuclear Boiler Instrumentation	FM-47A
03	Control Rod Drive	FM-27B
07	Neutron Tip Monitors	FM-119A
10	Residual Heat Removal	FM-20A FM-20B
11	Standby Liquid Control	FM-21A
12	Reactor Water Cleanup	FM-24A
13	Reactor Core Isolation Cooling	FM-22A
14	Core Spray	FM-23A
15	Reactor Building Closed Loop Cooling	FM-15A FM-15B
16-1	Leak Rate Analyzer	FM-49A
19	Fuel Pool Cooling	FM-19A
20	Radioactive Waste	FM-17A
23	High Pressure Cooling injection	FM-25A
27	Containment Atmosphere Dilution	FM-18A FM-18B FM-18D
29	Main Steam	FM-29A
34	Feedwater	FM-34A
39	Breathing, Instrument & Service Air	FM-39C
46	Service & Emergency Service Water	FM-46A FM-46B
66	Reactor Building Service Water	FB-10H
70	Control Room Service & Chill Water	FB-35E

APPENDIX A

PUMP TESTING PROGRAM

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

PUMP TESTING PROGRAM

Table of Contents

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

PUMP TABLE EXPLANATION

Summary of Information Provided

The Pump Table provides the following information:

* Individual pump identifier
* Test type - "Design" refers to tests where design or substantial flowrate is achieved.
* The drawing on which the pump appears
* Drawing coordinates
* Speed (1)
* Inlet pressure (1)
* Flow rate (1)
* Vibration amplitude (1)
* Observation of lube oil level (1)
* Test interval
* Bearing temperature (1)

(1) These parameters are each addressed with either an "X" indicating the parameter is measured, an "X" with a note number indicating the parameter is measured but with some exception to the Code, or by a note number indicating relief is requested to eliminate measurement of the parameter. A blank indicates that measurement of the respective parameter is not applicable.

Pump Relief Requests

Notes PXX refer to relief requests for the Pump Testing Program. Each pump request for relief provides the following information:

* System
* Individual pump identifier
* ISI Classification
* Safety Function
* Code test requirement for which relief is requested
* Basis for relief
* Proposed alternate testing

PUMP TABLE

PUMP ID	TEST TYPE	DRAWING NUMBER	DWG CO-OR	SPEED	INLET PRESSURE	DIFFERENTIAL PRESSURE	FLOW RATE	VIBRATION AMPLITUDE	BEARING TEMPERATURE	LUBE OIL LEVEL/PRESSURE	INSPECTION FREQUENCY
10P-1A	DESIGN	FM-20B	B-6		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1B	DESIGN	FM-20B	B-5		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1C	DESIGN	FM-20B	C-6		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1D	DESIGN	FM-20B	C-5		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-3A	DESIGN	FM-20A	B-7		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3B	DESIGN	FM-20A	B-3		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3C	DESIGN	FM-20A	C-7		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3D	DESIGN	FM-20A	C-3		X P16	X	X P17	X	P14	X	1 - QUARTERLY
11P-2A	DESIGN	FM-21A	D-4		X P12	X	X P7	X P13	P14	X	1 - QUARTERLY
11P-2B	DESIGN	FM-21A	B-4		X P12	X	X P7	X P13	P14	X	1 - QUARTERLY
14P-1A	DESIGN	FM-23A	C-8		X P11	X P17	X P17	X	P14	X	1 - QUARTERLY
14P-1B	DESIGN	FM-23A	C-3		X P11	X P17	X P17	X	P14	X	1 - QUARTERLY
23P-1B	DESIGN	FM-25A	E-5		X P17	X	X P17	X	P14	X	1 - QUARTERLY
23P-1M	DESIGN	FM-25A	E-4	X P17	X	X P17	X P17	X	P14	X	1 - QUARTERLY
46P-2A	DESIGN	FM-46B	D-8		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
46P-2B	DESIGN	FM-46A	C-8		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY

PUMP TABLE

PUMP ID	TEST TYPE	DRAWING NUMBER	DWG CO-OR	SPEED	INLET PRESSURE	DIFFERENTIAL PRESSURE	FLOW RATE	VIBRATION AMPLITUDE	BEARING TEMPERATURE	LUBE OIL LEVEL/PRESSURE	INSPECTION FREQUENCY
10P-1A	DESIGN	FM-20B	B-6		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1B	DESIGN	FM-20B	B-5		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1C	DESIGN	FM-20B	C-6		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-1D	DESIGN	FM-20B	C-5		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
10P-3A	DESIGN	FM-20A	B-7		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3B	DESIGN	FM-20A	B-3		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3C	DESIGN	FM-20A	C-7		X P16	X	X P17	X	P14	X	1 - QUARTERLY
10P-3D	DESIGN	FM-20A	C-3		X P16	X	X P17	X	P14	X	1 - QUARTERLY
11P-2A	DESIGN	FM-21A	D-4		X P12	X	X P7	X P13	P14	X	1 - QUARTERLY
11P-2B	DESIGN	FM-21A	B-4		X P12	X	X P7	X P13	P14	X	1 - QUARTERLY
14P-1A	DESIGN	FM-23A	C-8		X P11	X P17	X P17	X	P14	X	1 - QUARTERLY
14P-1B	DESIGN	FM-23A	C-3		X P11	X P17	X P17	X	P14	X	1 - QUARTERLY
23P-1B	DESIGN	FM-25A	E-5		X P17	X	X P17	X	P14	X	1 - QUARTERLY
23P-1M	DESIGN	FM-25A	E-4	X P17	X	X P17	X P17	X	P14	X	1 - QUARTERLY
46P-2A	DESIGN	FM-46B	D-8		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY
46P-2B	DESIGN	FM-46A	C-8		X P2	X	X P17	X P9	P14	P5	1 - QUARTERLY

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P1 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P3	This relief request has been withdrawn.
NOTE P4	This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P5

SYSTEMS:	RHR Service Water Emergency Service Water
PUMPS:	RHRSW 10P-1A, B, C, D ESW 46P-2A, B
CLASS:	3
FUNCTION:	Provide emergency cooling water from intake bay to various emergency heat exchangers and back-up injection points.
TEST REQUIREMENT:	IWP-3100 and Table IWP-3100-1 require observation of proper lubrication level or pressure.
BASIS FOR RELIEF:	These pumps are of a vertical submerged open line shaft design. The pump bearings are water lubricated and the lube oil observation cannot be performed.
ALTERNATE TEST:	Other Code required parameters being measured will detect degradation of the mechanical condition of the pumps.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P6 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P7

SYSTEM:	Standby Liquid Control (SLC)
PUMPS:	SLC 11P-2A, B
CLASS:	2
FUNCTION:	These pumps inject borated water into the reactor vessel as an alternate means for negative reactivity addition and reactor shutdown.
TEST REQUIREMENT:	IWP-3500 specifies that a pump shall be run for at least five minutes under stable conditions before recording the required test data. IWP-4600 specifies that flowrate shall be measured using a rate or quantity meter installed in the pump test circuit.
BASIS FOR RELIEF:	The SLC test loop is not equipped with flow instrumentation and the only practical means of determining flowrate is to monitor the change of level in a test tank from which water is being pumped. The installed test tank has a capacity of only 210 gallons and is not capable of accommodating 5 minutes of pump operation at rated conditions ($\geq$ 50 gpm).
ALTERNATE TESTING:	The flowrate of the SLC pumps will be determined by measuring the change in water level in the test tank during a period of pump operation at the reference discharge pressure over a period of at least two (2) minutes.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P8 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P9

SYSTEMS:	RHR Service Water (RHRSW) Emergency Service Water (ESW)
PUMPS:	RHRSW 10P-1A, B, C, D ESW 46P-2A, B
CLASS:	3
FUNCTION:	Provide emergency cooling water from the intake bay to various emergency heat exchangers and backup injection points.
TEST REQUIREMENT:	IWP-4510 requires that, on a pump coupled to the driver, vibration measurements shall be taken on the bearing housing near the coupling.
BASIS FOR RELIEF:	These pumps are of a vertical submerged open-line shaft design with the pump bearings submerged and inaccessible below the floor slab. The bearing/seal housing near the upper coupling, which is accessible, is in a confined area in close proximity to the rotating shaft and coupling. Access to this area for vibration monitoring is considered to present an unacceptable personnel safety hazard during pump operation. ASME/ANSI OMa-1988, Part 6, "Operation and Maintenance of Nuclear Power Plants", Paragraph 4.6.4(b) identifies the access problem associated with measuring vibration of vertical line shaft pumps and directs that measurements be taken on the upper motor bearing housing in three orthogonal directions. This Standard considers measuring in this manner an acceptable method for monitoring vibration.
ALTERNATE TESTING:	Vibration measurements on these pumps will be taken on the upper motor bearing housing per ASME/ANSI OMa-1988, Part 6, "Operation and Maintenance of Nuclear Power Plants", Paragraph 4.6.4(b). In addition, vibration measurements will comply with the applicable requirements of Paragraphs 4.3, 4.4, 4.5, 4.6.1, 4.6.4, 5.1, 5.2 and 6.1 of that standard.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P10 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P11

SYSTEM:	Core Spray
PUMPS:	14P-1A,B
CLASS:	2
FUNCTION:	Pump cooling water from the suppression pool to the reactor in the event of a LOCA.
TEST REQUIREMENT:	Per IWP-4120, the full-scale range of the pump inlet pressure instrument shall be three times the reference value or less.
BASIS FOR RELIEF:	The installed core spray pump inlet pressure indicators are designed to provide adequate inlet pressure indication during all expected operating conditions. The full-scale range, 60 psig, is sufficient for a post-accident condition when the torus is at the maximum accident pressure. This, however, exceeds the range limit for inlet pressure under the test condition (approx. 5 psig). Suction pressure measurements serve two functions. First, they provide assurance that the prescribed NPSH requirements for the pumps are met. Secondly, they are used for determining pump differential pressure. The installed gauges are calibrated to within ±2% accuracy (FS), thus the maximum variation in measured suction pressure due to inaccuracy would be ±1.2 psi. This is considered to be suitable for determining that adequate NPSH is available for proper pump operation.

Pump Relief Requests

NOTE P11 (cont.)

Pump discharge pressure during testing is typically 300 psig. which results in a calculated differential pressure of approximately 295 psid. Given the accuracy of the discharge pressure measurement of 2.5 psi, the resultant maximum variation in calculated differential pressure will be 3.7 psi. or 1.25%. This is consistent with the requirements of Table IWP-4110-1 that only requires that instrument accuracy be better than 2% of full scale.

ALTERNATE TESTING: Use existing vendor supplied inlet pressure indicators (as described above) for testing of the core spray pumps. (See Relief Request NOTE P16)

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P12

SYSTEM:	Standby Liquid Control (SLC)
PUMPS:	11P-2 A, B
CLASS:	2
FUNCTION:	These pumps inject borated water into the reactor vessel as an alternate means for negative reactivity addition and reactor shutdown.
TEST REQUIREMENT:	Per IWP-4120, the full-scale range of the pump inlet pressure instrument shall be three times the reference value or less.
BASIS FOR RELIEF:	The pump inlet pressure indicators are designed to provide adequate inlet pressure indication when pumping from the SLC storage tank. These instruments have a range of 0-30 psig and are calibrated to within ±2% accuracy. Thus, there is a potential for a variation of ±0.6 psi due to instrument accuracy. Since the SLC pumps are of the reciprocating positive displacement type, pump flowrate is not sensitive to pump differential pressure. In addition, the typical pump inlet pressure (approx. 1 psi) is less than 0.1% of the developed differential pressure (1279 psid). A variation of ±0.6 psi in the inlet pressure will not significantly affect pump parameters.
ALTERNATE TESTING:	Use existing vendor supplied inlet pressure indicators for the SLC pump flow test. (See Relief Request NOTE P16)

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P13

SYSTEM: Standby Liquid Control (SLC)

PUMPS: 11P-2A,B

CLASS: 2

FUNCTION: These pumps inject borated water into the reactor vessel as an alternate means for negative reactivity addition and reactor shutdown.

TEST REQUIREMENT: Per IWP-4520(b), vibration measurement instruments shall have a frequency response range from one half minimum to at least maximum pump shaft rotational speed.

BASIS FOR RELIEF: The nominal speed of the SLC pumps is 520 RPM which correlates to a rotational frequency of 8.67 Hz. IWP-4520(b) requires vibration instrumentation be accurate to ±5% full scale over a range of 4.33-8.67 Hz for these pumps.

The Authority has purchased new instruments for use during surveillance testing with certified accuracy of ±5% full scale over a range of 5-2000 Hz. Calibration is verified accurate using a system test methodology over a range of 6-500 Hz in units of displacement (Mils Pk-Pk) and 6-1000 Hz in units of both velocity (IPS Pk) and acceleration (g's Pk). The system test verification is limited by the capability of the calibration shaker system to accurately sustain vibration at meaningful amplitudes outside the tested frequencies. The certified calibration ±5% range is arrived at through addition of individual transducer and meter inaccuracies over the stated frequency range.

The instrument lower frequency response limits are a result of high-pass filters installed to eliminate low-frequency elements associated with the input signal from entering the process of single and double integration. These filters prevent low frequency electronic noise in from distorting readings in the resultant units (IPS, Mils). As a side effect, any actual vibration occurring at low frequencies is filtered out.

Pump Relief Requests

NOTE P13 (cont.)

This is a necessary trade-off, as 1 mv of electronic noise at 4.33 Hz translates to ≈ 20.86 Mils Pk-Pk with the accelerometer used with these instruments.

The Authority has extensively researched this issue concerning Code compliance and intent, and strongly feels that, for these pumps, procurement of equipment capable of meeting the Code required accuracy is impractical with little or no benefit. Instrumentation capable of meeting the Code for these pumps is cumbersome, difficult to operate, prone to human error, costly to purchase and expensive to calibrate. The number of vendors that supply instrumentation accurate at these frequencies is limited, and there are even fewer qualified vendors capable of performing the required calibration services. Most standard qualified calibration laboratories provide calibration services only to a minimum of 10 Hz.

In addition to the impracticability of procuring the instruments, the Authority feels that the instruments presently used are adequate to assess the condition of these pumps. The manufacturer of these pumps, Union Pump Co., Battle Creek, Michigan, has stated that these pumps, being of a simplified reciprocating design, have no failure mechanisms that would be revealed at frequencies less than shaft speed. Union Pump has stated that all failure modes of this pump resulting in increasing vibration will be manifested at shaft speed frequency or harmonics thereof. In light of the information provided by Union Pump, monitoring sub-synchronous vibration for these pumps is not needed, but super-synchronous readings will provide meaningful information in the detection of imminent machinery faults.

A search of the INPO NPRDS database has revealed only one failure reported for pumps of this or similar design whose discovery mentioned increased vibration levels. The cited cause of the failure was improper end play set leading to bearing failure. Failures of this type would normally be detected at running (shaft) speed frequency, harmonics thereof, or non-harmonic

Pump Relief Requests

NOTE P13 (cont.)

super-synchronous bearing defect frequencies. It should also be noted that these are standby pumps which are normally operated only during pump and valve testing. In the unlikely event this system is required to fulfill its design function, only one of the two redundant pumps need operate for a period of 23 to 125 minutes.

In addition to vibration monitoring performed for the IST Program, these pumps are included in the Authority's Rotating Equipment Monitoring Program. Vibration spectral data is periodically collected and analyzed for the pump and gear motors in addition to those required by the Code. The equipment used by the Rotating Equipment Program is certified accurate ± 5% over a frequency range 5-2000 Hz and is also limited by high-pass integrating filters, but allows for discrete frequency analysis and trending using FFTs. Vendor specifications state that this equipment should provide fairly accurate data down to 2 Hz in units of acceleration (g's Pk) (using the raw transducer signal - negating the need for integration). Study of low-frequency spectra taken in g's Pk with these instruments has revealed no distinct sub-synchronous peaks above the noise floor acceleration signal.

In light of their rigorous testing and limited design run time, it is not likely that a minor mechanical fault would prevent these pumps from fulfilling their design function and unlikely that development of a major fault would go unnoticed.

In conclusion, the Authority feels that the use of high quality, commercially available vibration monitoring equipment calibrated to be at least accurate ± 5% full scale over a range of 6 Hz to 500 Hz (nominal shaft speed - 8.67 Hz) is an appropriate method of monitoring the mechanical condition of the SLC pumps. Such instruments will provide meaningful and useful measurements over the frequency range in which pump faults will develop and manifest. This meets the intent of the Code and certainly will neither adversely impact system reliability nor the health and safety of the general public. In addition, it

Pump Relief Requests

NOTE P13 (cont.) relieves the Authority of the burden and expense involved in the procurement, calibration, training and certification associated with obtaining new equipment which is simply not needed to adequately assess the condition of the subject pumps.

ALTERNATE TESTING: The vibration measurements will be taken using instrumentation accurate ± 5% full scale over a frequency range of 6 Hz to 500 Hz. The data will be evaluated per IWP-3200.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P14

SYSTEMS: Various

PUMPS: All pumps in Program

CLASS: 2 and 3

FUNCTION: Various

TEST REQUIREMENT: IWP-3300 and IWP-4310 requires that the temperature of all centrifugal pump bearings outside the main flowpath and of the main shaft bearings of reciprocating pumps shall be measured at points selected to be responsive to changes in the temperature of the bearings.

BASIS FOR RELIEF: The data associated with bearing temperatures taken at one-year intervals provides little statistical basis for determining the incremental degradation of a bearing or any meaningful trending information or correlation.

In many cases pump bearings are water-cooled and thus, bearing temperature is a function of the temperature of the cooling medium, which can vary considerably.

Vibration measurements are a significantly more reliable indication of pump bearing degradation than are temperature measurements. All pumps in the program are subjected to vibration measurements in accordance with IWP-4500.

Although excessive bearing temperature is an indication of an imminent or existing bearing failure, it is highly unlikely that such a condition would go unnoticed during routine surveillance testing since it would manifest itself in other obvious indications such as audible noise, unusual vibration, increased motor current, etc.

Pump Relief Requests

NOTE P14 (cont.)

Any potential gain from taking bearing temperature measurements, which in most cases would be done locally using portable instrumentation, cannot offset the cost in terms of dilution of operator effort, distraction of operators from other primary duties, excessive operating periods for standby pumps, and unnecessary personnel radiation exposure.

ALTERNATE TESTING: Vibration monitoring will be performed in accordance with IWP-4500. Such vibration monitoring will provide adequate monitoring and evaluation of the material condition of the pump bearings.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P15 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P16

SYSTEMS:	Various
PUMPS:	Various
CLASS:	Various
FUNCTION:	This is a generic relief request.
TEST REQUIREMENT:	Per IWP-4210, 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.
BASIS FOR RELIEF:	When this requirement is applied to the measurement of pump suction pressure where measured pressures are at relative low levels, the 0.25% limit is overly restrictive and oftentimes results in complicated venting procedures and unnecessary health physics risks associated with handling and disposal of radioactive contaminated water with no commensurate gain or improvement of test reliability. Normally, the only quantitative use of suction pressure measurements, where significant accuracy is required, is in determining pump differential pressure or head. In most cases the pump discharge pressure exceeds the suction pressure by at least a factor of five (5). This being the case a 0.25% error introduced into the suction pressure measurement results in an error of 0.05% in the differential pressure calculation. This is insignificant in light of the potential 6% error allowance applied to both the suction and discharge pressure instruments (Ref IWP-4110).

Pump Relief Requests

NOTE P16 (cont.)

ALTERNATE TESTING: If the presence or absence of liquid in a gage line used for sensing pump suction pressure could produce a difference of more than 0.25% in the calculated value of the pump differential pressure, means shall be provided to ensure or determine the presence or absence of liquid as required for the static correction used.

Pump Relief Requests

NOTE P17

SYSTEMS:	Various
PUMPS:	This is a generic relief request.
CLASS:	Various
FUNCTION:	Various
TEST REQUIREMENT:	IWP-4120 requires that the full-scale range of each instrument shall be three time the reference value or less.
BASIS FOR RELIEF:	In several instances instruments used to measure pump parameters use digital readouts. Although these instruments are highly accurate and suitable for use, they are virtually unlimited in range and thus do not meet the Code requirement. ASME/ANSI OM-1987, Part 6, Paragraph 4.6.1.2 allows the use of digital instruments with limiting provisions.
ALTERNATE TESTING:	Digital instruments may be used during pump testing provided that the reference value shall not exceed 70% of the calibrated range of the instrument. Digital instruments shall have an accuracy of ±2 percent (±5 percent for vibration) over the calibrated range of the instrument.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX A

Pump Relief Requests

NOTE P18 This relief request has been withdrawn.

APPENDIX B

VALVE TESTING PROGRAM

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

VALVE TESTING PROGRAM

Table of Contents

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

VALVE TESTING PROGRAM

Table of Contents

Relief Requests (Cont'd)

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

VALVE TESTING PROGRAM

Table of Contents

Relief Requests (Cont'd)

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

VALVE TABLE EXPLANATION

Summary of Information Provided

The Valve Table is sorted by system number then drawing number and provides the following information:

* Individual valve identifier
* Drawing coordinates
* Section XI ISI Classification
* Section XI IWV category
* Nominal size
* Valve type
* Actuator type
* Section XI test required
* Relief request (RR)/cold shutdown (CS) justification
* Alternate test
* Remarks

Cold Shutdown Justification

Notes CSXX refer to cold shutdown justifications which provide the justification for testing affected components at cold shutdown instead of every three months. (Refer to Relief Request NOTE V51) The Cold Shutdown Justifications provide the following information:

* System
* Individual valve identifier
* Section XI category
* Safety function
* Justification

Valve Relief Requests

Notes VXX refer to Relief Requests for the Valve Testing Program. The Valve Relief Requests provide the following information:

* System
* Individual valve identifier
* Section XI category
* ISI Classification
* Safety Function
* Test requirement from which relief is requested
* Basis for relief
* Alternate testing

APPENDIX B

VALVE SYMBOLS

Valve Types

3W	Three-way valve
AN	Angle valve
BF	Butterfly valve
BK	Ball check
BL	Ball valve
CK	Swing check
GA	Gate valve
GL	Globe valve
LK	Lift check
NK	Non-return check
PG	Plug valve
RL	Relief valve
SC	Stop check
SK	Spring check
TK	Testable check
WK	Wafer Check
XP	Explosive valve

Valve Actuator Types

AO	Air operator
EH	Electro-hydraulic
HO	Hydraulic operator
MA	Manual operator
MO	Motor operator
PA	Pilot actuated
SA	Self actuated
SO	Solenoid operator
SP	Spring operator
SQ	Squib actuator

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Test Method

TS	Stroke time measured during valve exercising	IWV-3413
TM	Stroke time measured during valve exercising	IWV-3413
FS	Full stroke exercise	IWV-3412
FC	Fail-safe to close position	IWV-3415
FO	Fail-safe to open position	IWV-3415
PE	Partial stroke exercise	IWV-3412
LK	Leak test	IWV-3420
LJ	Leak test per 10CFR50 Appendix J Type C	
RL	Relief valve test	IWV-3512
PI	Remote position indication verification	IWV-3300
DA	Disassemble and inspect per relief request	
SP	Special test (Refer to relief request)	
XP	Explosively actuated valve test	IWV-3610
FF	Forward flow check valve test	IWV-3522
RF	Check valve closure test	IWV-3522
PF	Partial flow check valve test	
MS	Manual stroke test (non-intrusive)	IWV-3522
ME	Exercising check valves using manual operator	IWV-3522

Test Frequency

-1	Quarterly	-5	2 Years
-2	Cold Shutdown	-6	Special Test per Relief Request
-3	Refueling	-7	Monthly
-4	IWV-3511/3610		

VALVE TABLE

SYSTEM: Standby Gas Treatment - SYSTEM ID: 01-125

DRAWING: FM-48A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
01-125MOV-100A	C-6	2	B	4.00	BF	MO	TM-1 PI-3			
01-125MOV-100B	F-6	2	B	4.00	BF	MO	TM-1 PI-3			
01-125MOV-11	G-8	2	B	24.00	BF	MO	TM-1 PI-3			
01-125MOV-12	F-8	2	B	24.00	BF	MO	TM-1 PI-3			
01-125MOV-14A	D-7	2	B	24.00	BF	MO	TM-1 PI-3			
01-125MOV-14B	E-7	2	B	24.00	BF	MO	TM-1 PI-3			
01-125MOV-15A	D-3	2	B	24.00	BF	MO	TM-1 PI-3			
01-125MOV-15B	F-3	2	B	24.00	BF	MO	TM-1 PI-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Automatic Depressurization System - SYSTEM ID: 02

DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02RV-1	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-10	G-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-11	G-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-2	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-3	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-4	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-5	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-6	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-7	H-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-71A	G-6	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71B	G-6	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71C	G-6	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71D	F-6	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71E	F-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71F	F-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71G	G-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	

VALVE TABLE

SYSTEM: Automatic Depressurization System - SYSTEM ID: 02

DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02RV-71H	G-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71J	G-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71K	G-6	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-71L	G-7	1	BC	6.00	RL	SA AO	FS-1 RL-4	V27	FS-3	
02RV-8	G-7	2	C	3.00	CK	SA	MS-2	V58		
02RV-9	G-7	2	C	3.00	CK	SA	MS-2	V58		
02VB-1	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-10	G-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-11	G-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-2	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-3	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-4	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-5	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-6	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-7	H-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-8	G-8	2	C	10.00	CK	SA	MS-2	V58		
02VB-9	G-8	2	C	10.00	CK	SA	MS-2	V58		

VALVE TABLE

SYSTEM: Reactor Water Recirculation - SYSTEM ID: 02-2

DRAWING: FM-26A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02-2AOV-39	E-4	1	A	0.75	GA	AO	TM-1 FC-1 PI-3 LJ-3			
02-2AOV-40	F-2	1	A	0.75	GA	AO	TM-1 FC-1 PI-3 LJ-3			
02-2EFV-PS-128A	B-6	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2EFV-PS-128B	B-6	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2EFV-PT-24A	C-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2EFV-PT-24B	C-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2EFV-PT-25A	C-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2EFV-PT-25B	C-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-2RWR-13A	C-3	1	AC	0.75	SK	SA	RF-1 LJ-3	V1	LJ-3	
02-2RWR-13B	C-8	1	AC	0.75	SK	SA	RF-1 LJ-3	V1	LJ-3	
02-2SOV-001	D-3	1	A	0.75	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Water Recirculation - SYSTEM ID: 02-2

DRAWING: PM-26A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02-2SOV-002	D-8	1	A	0.75	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
022EFV1DPT111A	E-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV1DPT111B	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV1FT110A	F-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV1FT110C	D-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV1FT110E	F-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV1FT110G	D-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV2DPT111A	E-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV2DPT111B	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV2FT110A	F-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV2FT110C	D-3	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
022EFV2FT110E	F-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Water Recirculation - SYSTEM ID: 02-2 DRAWING: FM-26A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
022EFV2FT110G	D-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02MOV-53A	C-3	1	B	28.00	GA	MO	TM-2 PI-3	CS1		
02MOV-53B	C-7	1	B	28.00	GA	MO	TM-2 PI-3	CS1		

VALVE TABLE

SYSTEM: Nuclear Boiler Vessel Instruments - SYSTEM ID: 02-3

DRAWING: FM-47A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02-3EFV-11	F-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-13A	E-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-13B	E-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-15A	E-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-15B	E-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-15N	B-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-17A	D-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-17B	D-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-19A	D-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-19B	D-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-21A	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-21B	C-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-21C	C-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW

VALVE TABLE

SYSTEM: Nuclear Boiler Vessel Instruments - SYSTEM ID: 02-3

DRAWING: FM-47A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02-3EFV-21D	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-23	F-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-23A	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-23B	D-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-23C	D-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-23D	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-25	C-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31A	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31B	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31C	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31D	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31E	D-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31F	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW

VALVE TABLE

SYSTEM: Nuclear Boiler Vessel Instruments - SYSTEM ID: 02-3

DRAWING: PM-47A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
02-3EFV-31G	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31H	H-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31J	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31K	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31L	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31M	D-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31N	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31P	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31R	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-31S	H-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
02-3EFV-33	B-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Control Rod Drive - SYSTEM ID: 03

DRAWING: FM-27B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
03AOV-126	C-4	2	B	1.00	GA	AO	TM-1	V2	FS-6	
							FO-1	V2	FO-6	
03AOV-127	D-4	2	B	1.00	GA	AO	TM-1	V2	FS-6	
							FO-1	V2	FO-6	
03AOV-32	H-4	2	B	1.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-33	F-4	2	B	2.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-34	H-4	2	B	1.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-35	F-4	2	B	2.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-36	H-6	2	B	1.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-37	F-6	2	B	2.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-38	H-6	2	B	1.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			
03AOV-39	F-6	2	B	2.00	GA	AO	TS-1			TECH SPEC STROKE TIME LIMIT-30 SEC
							FC-1			
							PI-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Control Rod Drive - SYSTEM ID: 03

DRAWING: FM-27B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
03HCU-114	D-4	2	C	0.75	BK	SA	FF-1	V2	FF-6	
03HCU-115	C-4	2	C	0.75	BK	SA	RF-2	CS7		
03HCU-138	C-4	2	C	0.75	BK	SA	RF-1			REVERSE FLOW TESTED VIA ROD MOTION

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Traveling In-Core Probe - SYSTEM ID: 07 DRAWING: FM-119A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
07EV-104A	F-5	2	D	0.37	XP	SQ	XP-4			
07EV-104B	F-4	2	D	0.37	XP	SQ	XP-4			
07EV-104C	F-4	2	D	0.37	XP	SQ	XP-4			
07SOV-104A	F-5	2	A	0.37	BL	SO	TM-1 FC-1 PI-3 LJ-3	V50		
07SOV-104B	F-4	2	A	0.37	BL	SO	TM-1 FC-1 PI-3 LJ-3	V50		
07SOV-104C	F-4	2	A	0.37	BL	SO	TM-1 FC-1 PI-3 LJ-3	V50		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10

DRAWING: FM-20A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10AOV-68A	F-6	1	AC	24.00	TK	SA AO	FF-2 RF-2 LK-3	V60 CS2		DA-6 PENDING EVALUATION PER V60
10AOV-68B	F-5	1	AC	24.00	TK	SA AO	FF-2 RF-2 LK-3	V60 CS2		DA-6 PENDING EVALUATION PER V60
10MOV-13A	C-6	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-13B	C-4	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-13C	C-6	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-13D	C-5	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-15A	C-6	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-15B	C-4	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-15C	C-6	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-15D	C-4	2	B	20.00	GA	MO	TM-1 PI-3			
10MOV-16A	D-8	2	B	4.00	GA	MO	TM-1 PI-3			
10MOV-16B	D-3	2	B	4.00	GA	MO	TM-1 PI-3			

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10

DRAWING: FM-20A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10MOV-17	D-5	1	A	20.00	GA	MO	TS-2	CS3		LK-3 SATISFIED BY LJ-3 PER EVALUATION
							TM-2	CS3		
							PI-3			
							LK-3			
							LJ-3			
10MOV-18	E-5	1	A	20.00	GA	MO	TS-2	CS3		LK-3 SATISFIED BY LJ-3 PER EVALUATION
							TM-2	CS3		
							PI-3			
							LK-3			
							LJ-3			
10MOV-25A	F-8	1	A	24.00	GA	MO	TS-1			LK-3 SATISFIED BY LJ-3 PER EVALUATION
							TM-1			
							PI-3			
							LK-3			
							LJ-3			
10MOV-25B	F-3	1	A	24.00	GA	MO	TS-1			LK-3 SATISFIED BY LJ-3 PER EVALUATION
							TM-1			
							PI-3			
							LK-3			
							LJ-3			
10MOV-26A	G-7	2	A	10.00	GA	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-26B	G-4	2	A	10.00	GA	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-27A	F-8	1	A	18.00	AN	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10

DRAWING: FM-20A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10MOV-27B	F-3	1	A	18.00	AN	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3			
10MOV-31A	G-6	2	A	10.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-31B	G-5	2	A	10.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-34A	E-7	2	B	14.00	GL	MO	TS-1			
							TM-1			
							PI-3			
10MOV-34B	E-3	2	B	14.00	GL	MO	TS-1			
							TM-1			
							PI-3			
10MOV-38A	E-7	2	A	4.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-38B	E-4	2	A	4.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
10MOV-39A	E-8	2	A	16.00	GL	MO	TM-1			
							PI-3			
							LJ-3	V19		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10 DRAWING: FM-20A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10MOV-39B	E-3	2	A	16.00	GL	MO	TM-1 PI-3 LJ-3	 V19		
10MOV-66A	D-8	2	B	20.00	GL	MO	TM-1 PI-3			
10MOV-66B	D-3	2	B	20.00	GL	MO	TM-1 PI-3			
10RHR-262	H-3	2	C	4.00	CK	SA	RF-1			
10RHR-277	G-8	2	C	4.00	CK	SA	RF-1			
10RHR-42A	C-8	2	C	16.00	CK	SA	FF-1 RF-1			
10RHR-42B	C-3	2	C	16.00	CK	SA	FF-1 RF-1			
10RHR-42C	C-8	2	C	16.00	CK	SA	FF-1 RF-1			
10RHR-42D	C-3	2	C	16.00	CK	SA	FF-1 RF-1			
10RHR-52A	G-6	2	A	2.00	GA	MA	LJ-3	V19		
10RHR-52B	G-5	2	A	2.00	GA	MA	LJ-3	V19		
10RHR-64A	C-8	2	C	3.00	CK	SA	PF-1 RF-1 DA-6	V32		
10RHR-64B	C-3	2	C	3.00	CK	SA	PF-1 RF-1 DA-6	V32		

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10

DRAWING: FM-20A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10RHR-64C	D-8	2	C	3.00	CK	SA	PF-1 RF-1 DA-6	V32		
10RHR-64D	D-3	2	C	3.00	CK	SA	PF-1 RF-1 DA-6	V32		
10RHR-95A	C-8	2	C	0.75	SK	SA	RF-1	V56	RF-3	
10RHR-95B	B-5	2	C	0.75	SK	SA	RF-1	V56	RF-3	
10SV-35A	E-8	2	C	1.00	RL	SA	RL-4			
10SV-35B	E-3	2	C	1.00	RL	SA	RL-4			
10SV-40	D-5	2	C	1.00	RL	SA	RL-4			

VALVE TABLE

SYSTEM: Residual Heat Removal - SYSTEM ID: 10

DRAWING: FM-20B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
10MOV-89A	D-6	3	B	16.00	GA	MO	TM-1 PI-3			
10MOV-89B	E-5	3	B	16.00	GA	MO	TM-1 PI-3			
10RHR-14A	B-7	3	C	12.00	CK	SA	FF-1 RF-1			
10RHR-14B	B-4	3	C	12.00	CK	SA	FF-1 RF-1			
10RHR-14C	C-7	3	C	12.00	CK	SA	FF-1 RF-1			
10RHR-14D	C-4	3	C	12.00	CK	SA	FF-1 RF-1			
10SOV-101A	B-6	3	B	0.75	GL	SO	TM-1 FO-1 FF-3			
10SOV-101B	B-5	3	B	0.75	GL	SO	TM-1 FO-1 FF-3			
10SOV-101C	C-6	3	B	0.75	GL	SO	TM-1 FO-1 FF-3			
10SOV-101D	C-5	3	B	0.75	GL	SO	TM-1 FO-1 FF-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Standby Liquid Control - SYSTEM ID: 11

DRAWING: FM-21A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
11EV-14A	D-6	1	D	1.50	XP	SQ	XP-4			
11EV-14B	B-6	1	D	1.50	XP	SQ	XP-4			
11SLC-16	C-7	1	AC	1.50	CK	SA	FF-1	V5	FF-3	
							RF-1	V5	LJ-3	
							LJ-3			
11SLC-17	D-7	1	AC	1.50	SK	SA	FF-1	V5	FF-3	
							RF-1	V5	LJ-3	
							LJ-3			
11SLC-43A	D-6	2	C	1.50	SK	SA	FF-1			
							RF-1			
11SLC-43B	B-6	2	C	1.50	SK	SA	FF-1			
							RF-1			
11SV-39A	D-4	2	C	1.00	RL	SA	RL-4			
11SV-39B	C-4	2	C	1.00	RL	SA	RL-4			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Water Clean Up System - SYSTEM ID: 12

DRAWING: FM-24A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
12MOV-15	E-8	1	A	6.00	GA	MO	TS-1			
							PI-3			
							LJ-3			
12MOV-18	E-7	1	A	6.00	GA	MO	TS-1			
							PI-3			
							LJ-3			
12MOV-69	H-7	1	A	4.00	GA	MO	TS-1			
							PI-3			
							LJ-3	V19		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Core Isolation Cooling - SYSTEM ID: 13 DRAWING: FM-22A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
13EFV-01A	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
13EFV-01B	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
13EFV-02A	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
13EFV-02B	F-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
13MOV-15	F-7	1	A	3.00	GA	MO	TS-1 PI-3 LJ-3	V19		
13MOV-16	F-7	1	A	3.00	GA	MO	TS-1 PI-3 LJ-3	V19		
13MOV-21	F-5	1	A	4.00	GA	MO	TM-1 PI-3 LJ-3	V19		
13MOV-27	E-5	2	B	2.00	GL	MO	TS-1 PI-3			
13MOV-41	D-7	2	B	6.00	GA	MO	TM-1 PI-3			
13RCIC-37	E-6	2	C	1.50	CK	SA	FF-2	CS17		
13RCIC-38	E-6	2	C	1.50	CK	SA	FF-2	CS17		
13RCIC-4	D-6	2	AC	8.00	LK	SA	FF-1 LJ-3	V6	LJ-3	

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Core Isolation Cooling - SYSTEM ID: 13 DRAWING: FM-22A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
13RCIC-5	C-6	2	AC	8.00	LK	SA	RF-1 LJ-3	V6	LJ-3	
13RCIC-7	C-7	2	C	2.00	SC	SA MA	RF-2	CS-18		

VALVE TABLE

SYSTEM: Core Spray - SYSTEM ID: 14

DRAWING: FM-23A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
14AOV-13A	F-6	1	AC	10.00	TK	SA AO	PE-2 RF-2 FF-3 LK-3 PI-3	V57		
14AOV-13B	F-5	1	AC	10.00	TK	SA AO	PE-2 RF-2 FF-3 LK-3 PI-3	V57		
14CSP-10A	D-8	2	C	12.00	CK	SA	FF-1			
14CSP-10B	D-3	2	C	12.00	CK	SA	FF-1			
14CSP-62A	E-7	2	C	1.00	SK	SA	RF-1		RF-3	
14CSP-62B	E-3	2	C	1.00	SK	SA	RF-1		RF-3	
14CSP-76A	F-7	2	C	2.00	SK	SA	RF-1			
14CSP-76B	F-4	2	C	2.00	SK	SA	RF-1			
14EFV-31A	E-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
14EFV-31B	E-4	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
14MOV-11A	F-7	1	A	10.00	GA	MO	TM-1 PI-3 LJ-3			
14MOV-11B	F-4	1	A	10.00	GA	MO	TM-1 PI-3 LJ-3			

VALVE TABLE

SYSTEM: Core Spray - SYSTEM ID: 14

DRAWING: FM-23A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
14MOV-12A	F-6	1	A	10.00	GA	MO	TM-1 PI-3 LK-3 LJ-3			LK-3 SATISFIED BY LJ-3 PER EVALUATION
14MOV-12B	F-4	1	A	10.00	GA	MO	TM-1 PI-3 LK-3 LJ-3			LK-3 SATISFIED BY LJ-3 PER EVALUATION
14MOV-26A	F-7	2	B	8.00	GL	MO	TS-1 PI-3			
14MOV-26B	F-3	2	B	8.00	GL	MO	TS-1 PI-3			
14MOV-5A	E-7	2	B	3.00	GA	MO	TM-1 PI-3			
14MOV-5B	E-3	2	B	3.00	GA	MO	TM-1 PI-3			
14MOV-7A	C-6	2	B	16.00	GA	MO	TM-1 PI-3			
14MOV-7B	C-4	2	B	16.00	GA	MO	TM-1 PI-3			
14SV-20A	E-8	2	C	1.50	RL	SA	RL-4			
14SV-20B	D-2	2	C	1.50	RL	SA	RL-4			

VALVE TABLE

SYSTEM: Reactor Building Closed Loop Cooling - SYSTEM ID: 15

DRAWING: FM-15A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
15MOV-175A	C-2	3	B	6.00	GA	MO	TM-1 PI-3			
15MOV-175B	C-2	3	B	6.00	GA	MO	TM-1 PI-3			

VALVE TABLE

SYSTEM: Reactor Building Closed Loop Cooling - SYSTEM ID: 15

DRAWING: FM-15B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
15AOV-130A	C-7	3	A	6.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS5		
15AOV-130B	D-5	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS5		
15AOV-131A	E-7	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS5		
15AOV-131B	E-4	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS5		
15AOV-132A	F-5	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS4		
15AOV-132B	F-7	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS4		
15AOV-133A	F-5	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS4		
15AOV-133B	F-7	3	A	4.00	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS4		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Reactor Building Closed Loop Cooling - SYSTEM ID: 15

DRAWING: FM-15B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
15AOV-134A	C-6	3	A	1.50	GL	AO	TM-2 PE-7 PI-3 LJ-3	CS5		
15RBC-35A	D-4	3	C	1.50	SK	SA	RF-1			
15RBC-35B	D-8	3	C	1.50	SK	SA	RF-1			
15RBC 35C	D-3	3	C	1.50	SK	SA	RF-1			
15RBC-35D	E-8	3	C	1.50	SK	SA	RF-1			
15RBC-38A	F-4	3	C	1.50	SK	SA	RF-1			
15RBC-38B	F-3	3	C	1.50	SK	SA	RF-1			
15RBC-61	F-7	3	C	1.00	SK	SA	RF-1			

VALVE TABLE

SYSTEM: Leak Rate Analyzer - SYSTEM ID: 16-1

DRAWING: FM-49A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
16-1AOV-101A	D-7	2	A	0.37	GA	AO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3	V19		
16-1AOV-101B	E-7	2	A	0.37	GA	AO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3	V19		
16-1AOV-102A	D-7	2	A	0.37	GA	AO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3	V19		
16-1AOV-102B	C-7	2	A	0.37	GA	AO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3	V19		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Fuel Pool Cooling - SYSTEM ID: 19

DRAWING: FM-19A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
19VB-1A	G-5	3	C	1.50	RL	SA	RL-4			
19VB-1B	G-5	3	C	1.50	RL	SA	RL-4			

VALVE TABLE

SYSTEM: Radwaste - SYSTEM ID: 20

DRAWING: FM-17A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
20AOV-83	F-6	2	A	3.00	BL	AO	TM-1 FC-1 PI-3 LJ-3	V29		
20AOV-95	C-6	2	A	3.00	BL	AO	TM-1 FC-1 PI-3 LJ-3	V29		
20MOV-82	F-7	2	A	3.00	GA	MO	TS-1 PI-3 LJ-3			
20MOV-94	C-7	2	A	3.00	GA	MO	TS-1 PI-3 LJ-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: High Pressure Coolant Injection - SYSTEM ID: 23 DRAWING: FM-25A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
23AOV-39	B-5	2	B	1.00	GA	AO	TM-1 FC-1 PI-3	V29		
23AOV-42	G-2	2	B	1.00	GA	AO	TM-1 FC-1 PI-3	V29		
23EFV-01A	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
23EFV-01B	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
23EFV-02A	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
23EFV-02B	G-7	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
23HOV-1	F-3	2	B	10.00	GL	HO	TM-1 PI-3	V29		
23HPI-12	C-6	2	AC	16.00	LK	SA	FF-1 RF-1 LJ-3	V34	LJ-3	
23HPI-13	C-7	2	C	2.00	SC	SA MA	FF-1 RF-2	V35 CS16	DA-3	
23HPI-130	C-5	2	C	2.00	SK	SA	FF-1 PF-1	V54	DA-3	
23HPI-18	F-7	1	C	14.00	CK	SA	ME-2	CS6		
23HPI-32	G-5	2	C	16.00	CK	SA	FF-1			

VALVE TABLE

SYSTEM: High Pressure Coolant Injection - SYSTEM ID: 23

DRAWING: FM-25A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
23HPI-402	E-7	2	C	2.00	CK	SA	FF-2	V17		
							RF-2	V17		
23HPI-403	E-7	2	C	2.00	CK	SA	FF-2	V17		
							RF-2	V17		
23HPI-56	C-6	2	C	2.00	SK	SA	FF-1	V22	DA-3	
23HPI-61	B-7	2	C	16.00	CK	SA	FF-1	V9	DA-6	
							PF-3			
23HPI-62	F-4	2	C	4.00	CK	SA	FF-1	V47	DA-6	
23HPI-65	C-6	2	AC	20.00	LK	SA	FF-1			
							RF-1	V34	LJ-3	
							LJ-3			
23MOV-14	F-3	2	B	10.00	GA	MO	TM-1			
							PI-3			
23MOV-15	F-7	1	A	10.00	GA	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
23MOV-16	F-7	1	A	10.00	GA	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
23MOV-17	G-5	2	B	16.00	GA	MO	TM-1			
							PI-3			
23MOV-19	F-6	1	A	14.00	GA	MO	TM-1			
							PI-3			
							LJ-3	V19		

VALVE TABLE

SYSTEM: High Pressure Coolant Injection - SYSTEM ID: 23

DRAWING: FM-25A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
23MOV-20	F-6	2	B	14.00	GA	MO	TM-1 PI-3			
23MOV-21	G-6	2	B	8.00	GL	MO	TM-1 PI-3			
23MOV-25	F-5	2	B	4.00	GL	MO	TS-1 TM-1 PI-3			
23MOV-57	F-5	2	B	16.00	GA	MO	TM-1 PI-3			
23MOV-58	C-7	2	B	16.00	GA	MO	TM-1 PI-3			
23MOV-60	F-7	1	A	1.00	GL	MO	TS-1 PI-3 LJ-3	 V19		
23SV-34	F-6	2	C	1.00	RL	SA	RL-4			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27 DRAWING: FM-18A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27AOV-126A	G-5	2	B	1.00	GL	AO	TM-1 PI-3	V29		
27AOV-126B	E-5	2	B	1.00	GL	AO	TM-1 PI-3	V29		
27AOV-128A	G-4	2	B	1.50	GL	AO	TM-1 PI-3	V29		
27AOV-128B	E-4	2	B	1.50	GL	AO	TM-1 PI-3	V29		
27AOV-129A	F-4	2	B	1.00	GL	AO	TM-1 PI-3	V29		
27AOV-129B	F-4	2	B	1.00	GL	AO	TM-1 PI-3	V29		
27CAD-19A	G-6	2	C	2.00	CK	SA	FF-1			
27CAD-19B	C-6	2	C	2.00	CK	SA	FF-1			
27SV-115A	G-4	2	C	0.50	RL	SA	RL-4			
27SV-115B	E-4	2	C	0.50	RL	SA	RL-4			
27SV-118A	G-5	2	C	0.50	RL	SA	RL-4			
27SV-118B	C-6	2	C	0.50	RL	SA	RL-4			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27

DRAWING: FM-18B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27AOV-101A	C-6	2	A	20.00	BF	AO	TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-101B	C-6	2	A	20.00	BF	AO	TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-111	C-2	2	A	24.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		
27AOV-112	C-3	2	A	24.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		
27AOV-113	D-8	2	A	24.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		
27AOV-114	D-8	2	A	24.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		
27AOV-115	C-2	2	A	20.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		
27AOV-116	C-3	2	A	20.00	BF	AO	TS-2	CS10		
							FC-2	CS10		
							PI-3			
							LJ-3	V19		

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27

DRAWING: FM-18B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27AOV-117	B-8	2	A	20.00	BF	AO	TS-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-118	B-8	2	A	20.00	BF	AO	TS-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-131A	C-4	2	A	1.50	GA	AO	TS-1			
							TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-131B	C-3	2	A	1.50	GA	AO	TS-1			
							TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-132A	C-4	2	A	1.50	GA	AO	TS-1			
							TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27AOV-132B	C-3	2	A	1.50	GA	AO	TS-1			
							TM-1			
							FC-1			
							PI-3			
							LJ-3	V19		
27CAD-67	C-4	2	AC	1.50	SK	SA	FF-1			
							RF-1			
							LJ-3	V19		

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27 DRAWING: FM-18B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27CAD-68	C-4	2	AC	1.50	SK	SA	FF-1			
							RF-1			
							LJ-3	V19		
27CAD-69	C-3	2	AC	1.50	SK	SA	FF-1			
							RF-1			
							LJ-3	V19		
27CAD-70	C-3	2	AC	1.50	SK	SA	FF-1			
							RF-1			
							LJ-3	V19		
27MOV-113	C-8	2	A	3.00	BF	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
27MOV-117	B-8	2	A	3.00	BF	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
27MOV-121	H-8	2	B	6.00	BF	MO	TM-1			
							PI-3			
27MOV-122	C-8	2	A	3.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
27MOV-123	B-8	2	A	3.00	GL	MO	TS-1			
							TM-1			
							PI-3			
							LJ-3	V19		
27SOV-125A	F-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27 DRAWING: FM-18B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27SOV-125B	F-4	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-125C	F-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-125D	F-4	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-135A	E-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-135B	F-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-135C	E-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27SOV-135D	F-5	2	A	1.00	GL	SO	TM-1	V29		
							FC-1			
							PI-3			
							LJ-3			
27VB-1	C-6	2	AC	30.00	CK	SA	ME-1			
							LK-3	V48		
							PI-3			

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27

DRAWING: FM-18B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27VB-2	C-6	2	AC	30.00	CK	SA	ME-1			
							LK-3	V48		
							PI-3			
27VB-3	C-6	2	AC	30.00	CK	SA	ME-1			
							LK-3	V48		
							PI-3			
27VB-4	C-6	2	AC	30.00	CK	SA	ME-1			
							LK-3	V48		
							PI-3			
27VB-5	C-6	2	AC	30.00	CK	SA	ME-1			
							LK-3	V48		
							PI-3			
27VB-6	C-6	2	AC	20.00	CK	SA	ME-1			
							LJ-3	V19		
							PI-3			
27VB-7	C-6	2	AC	20.00	CK	SA	ME-1			
							LJ-3	V1>		
							PI-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27 DRAWING: FM-18D

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27SOV-119E1	C-7	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-119E2	C-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-119F1	D-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-119F2	D-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-120E1	F-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-120E2	F-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-120F1	G-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-120F2	G-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27

DRAWING: FM-18D

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27SOV-122E1	F-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-122E2	F-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-122F1	G-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-122F2	G-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-123E1	E-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-123E2	E-6	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-123F1	F-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-123F2	F-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27 DRAWING: FM-18D

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27SOV-124E1	C-4	2	A	1.00	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-124E2	C-4	2	A	1.00	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-124F1	C-3	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		
27SOV-124F2	C-4	2	A	0.37	GL	SO	TM-1 FC-1 PI-3 LJ-3	V29		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Containment Atmosphere Dilution - SYSTEM ID: 27

DRAWING: FM-39C

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
27SOV-141	E-6	2	A	1.00	GL	SO	TM-1 FO-1 PI-3 LJ-3	V29		
27SOV-145	G-5	2	A	1.00	GL	SO	TM-1 FO-1 PI-3 LJ-3	V29		

VALVE TABLE

SYSTEM: Main Steam - SYSTEM ID: 29

DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
29AOV-80A	E-5	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	V59		
							PI-3			
							LJ-3	V19		
29AOV-80B	D-5	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	V59		
							PI-3			
							LJ-3	V19		
29AOV-80C	D-5	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	V59		
							PI-3			
							LJ-3	V19		
29AOV-80D	D-5	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	V59		
							PI-3			
							LJ-3	V19		
29AOV-86A	G-4	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	CS12		
							PI-3			
							LJ-3	V19		
29AOV-86B	F-4	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	CS12		
							PI-3			
							LJ-3	V19		
29AOV-86C	E-4	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	CS12		
							PI-3			
							LJ-3	V19		
29AOV-86D	D-4	1	A	24.00	GL	AO	TS-1			TECH SPEC LIMIT ON CLOSE TIME 3-5 SEC
							FC-2	CS12		
							PI-3			
							LJ-3	V19		

VALVE TABLE

SYSTEM: Main Steam - SYSTEM ID: 29

DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
29EFV-30A	F-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-30B	F-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-30C	F-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-30D	F-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-34A	F-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-34B	F-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-34C	F-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-34D	F-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-53A	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-53B	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-53C	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-53D	E-8	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-54A	E-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW

VALVE TABLE

SYSTEM: Main Steam - SYSTEM ID: 29

DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
29EFV-54B	E-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-54C	E-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29EFV-54D	E-5	1	AC	1.00	BK	SA	LK-1 LK-3	V28	LK-3	VALVE ISOLATES ON EXCESS FLOW
29MOV-200A	C-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-200B	B-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-201A	C-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-201B	B-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-202A	C-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-202B	B-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-203A	H-3	2	B	1.00	GL	MO	TM-2 PI-3	CS13		
29MOV-203B	H-3	2	B	1.00	GL	MO	TM-2 PI-3	CS13		
29MOV-204A	C-3	2	B	1.00	GL	MO	TM-1 PI-3			
29MOV-204B	B-3	2	B	1.00	GL	MO	TM-1 PI-3			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Main Steam - SYSTEM ID: 29 DRAWING: FM-29A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
29MOV-74	C-6	1	A	3.00	GA	MO	TS-1 PI-3 LJ-3			
29MOV-77	C-5	1	A	3.00	GA	MO	TS-1 PI-3 LJ-3			

VALVE TABLE

SYSTEM: Feedwater System - SYSTEM ID: 34

DRAWING: FM-34A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
34FWS-28A	E-7	1	AC	18.00	CK	SA	RF-1	V12	LJ-3	
							LJ-3			
34FWS-28B	F-7	1	AC	18.00	CK	SA	FF-1			
							RF-1	V12	LJ-3	
							LJ-3			
34NRV-111A	E-7	1	AC	18.00	NK	SA AO	RF-2	CS9		
							LJ-3	V19		
34NRV-111B	F-7	1	AC	18.00	NK	SA AO	RF-2	CS9		
							LJ-3	V19		

VALVE TABLE

SYSTEM: Instrument Air System - SYSTEM ID: 39

DRAWING: FM-39C

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
39IAS-22	E-5	2	AC	2.00	CK	SA	FF-2 RF-1 LJ-3	V14		
39IAS-29	F-3	2	AC	1.00	CK	SA	FF-2 RF-1 LJ-3	V14		

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Service Water - SYSTEM ID: 46

DRAWING: FB-10H

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
46SWS-60A	C-5	3	C	4.00	CK	SA	RF-1			
46SWS-60B	C-5	3	C	4.00	CK	SA	RF-1			
66PCV-101	D-3	3	B	3.00	GL	AO	FO-1			
66TCV-107E	C-4	3	B	2.50	GL	AO	FO-1			
66TCV-107F	C-7	3	B	2.50	GL	AO	FO-1			

VALVE TABLE

SYSTEM: Emergency Service Water - SYSTEM ID: 46

DRAWING: FB-35E

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
46(70)ESW-101	G-6	3	B	4.00	GA	MA	FS-1	V49	FS-3	
46(70)ESW-102	C-6	3	B	4.00	GA	MA	FS-1	V49	FS-3	
46(70)ESW-103	F-6	3	B	4.00	GA	MA	FS-1	V49	FS-3	
46(70)ESW-104	C-6	3	B	4.00	GA	MA	FS-1	V49	FS-3	
46(70)SWS-101	H-8	3	C	6.00	CK	SA	RF-1			
46(70)SWS-102	H-8	3	C	6.00	CK	SA	RF-1			
46(70)SWS-13	G-4	3	B	6.00	GL	MA	FS-1			
46(70)SWS-14	E-4	3	B	6.00	GL	MA	FS-1			
70TCV-120A	F-7	3	B	2.00	3W	AO	FO-1			
70TCV-120B	C-6	3	B	2.00	3W	AO	FO-1			
70TCV-121A	F-6	3	B	2.00	3W	AO	FO-1			
70TCV-121B	C-7	3	B	2.00	3W	AO	FO-1			
70WAC-12A	F-6	3	B	4.00	GA	MA	FS-1			
70WAC-12B	C-6	3	B	4.00	GA	MA	FS-1			
70WAC-5A	F-2	3	B	4.00	GA	MA	FS-1			
70WAC-5B	D-2	3	B	4.00	GA	MA	FS-1			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

VALVE TABLE

SYSTEM: Emergency Service Water - SYSTEM ID: 46

DRAWING: FM-46A

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
46ESW-19A	B-6	3	C	2.00	SK	SA	FF-1			
46ESW-20B	B-8	3	C	2.00	SK	SA	FF-1			
46ESW-21B	B-8	3	C	2.00	SK	SA	FF-1			
46ESW-22A	B-7	3	C	2.00	SK	SA	FF-1			
46SWS-67A	B-6	3	C	3.00	CK	SA	RF-1			
46SWS-67B	B-7	3	C	3.00	CK	SA	RF-1			
46SWS-68	B-6	3	C	3.00	CK	SA	RF-1			
46SWS-69	B-8	3	C	3.00	CK	SA	RF-1			
67PCV-101	D-2	3	B	2.50	GL	AO	FO-1			

VALVE TABLE

SYSTEM: Emergency Service Water - SYSTEM ID: 46

DRAWING: FM-46B

VALVE ID	DWG CO-OR	CLASS	VALVE CATEGORY	SIZE (IN)	VALVE TYPE	ACTUATOR TYPE	SECT. XI TEST	RR / CS	ALTERNATE TEST	REMARKS
46ESW-13A	E-3	3	C	3.00	CK	SA	FF-1			
46ESW-13B	C-2	3	C	3.00	CK	SA	FF-1			
46ESW-1A	E-7	3	C	12.00	CK	SA	FF-1			
45ESW-1B	D-7	3	C	12.00	CK	SA	FF-1			
46ESW-40A	E-5	3	C	1.00	CK	SA	RF-1			
46ESW-40B	E-4	3	C	1.00	CK	SA	RF-1			
46ESW-7A	E-5	3	C	6.00	CK	SA	FF-1			
46ESW-7B	E-5	3	C	6.00	CK	SA	FF-1			
46ESW-9A	E-4	3	C	8.00	CK	SA	FF-1			
46ESW-9B	D-4	3	C	8.00	CK	SA	FF-1			
46MOV-101A	E-6	3	B	10.00	GA	MO	TM-1 PI-3			
46MOV-101B	D-6	3	B	10.00	GA	MO	TM-1 PI-3			
46MOV-102A	E-6	3	B	8.00	GA	MO	TM-1 PI-3			
46MOV-102B	D-6	3	B	8.00	GA	MO	TM-1 PI-3			

Cold Shutdown Justifications

1. SYSTEM: **REACTOR WATER RECIRCULATION (RWR)**

   COMPONENTS: 02MOV-53A, B CATEGORY: B

   SAFETY FUNCTION: These valves close, on low reactor pressure to isolate the faulted loop coincident with initiation of the RHR System in the LPCI mode, to prevent diversion of LPCI flow.

   JUSTIFICATION: In order to exercise these valves, the respective recirculation pump must be secured. Securing either pump (single loop operation) is limited by Technical Specification requirements and is not prudent. Single loop operation also requires a reduction in power.

2. SYSTEM: **RESIDUAL HEAT REMOVAL**

   COMPONENTS: 10AOV-68A, B CATEGORY: A,C

   SAFETY FUNCTION: These valves open to provide flowpaths for LPCI and core spray injection to the reactor vessel. They close for pressure isolation from the reactor vessel.

   JUSTIFICATION: With the reactor at operating pressure, the RHR pumps cannot develop sufficient discharge pressure to open these valves. The installed air operators are designed to open these valves at zero differential pressure which is not practical with the reactor at operating pressure. Therefore, these valves cannot be full or part-stroke exercised during normal plant operation.

   Since there is no position indication for these valves, closure verification must be done by backflow testing. Such testing during plant operation is impractical due to personnel safety concerns related to the potential release of radioactive steam at high pressure.

Cold Shutdown Justifications

3. SYSTEM: **RESIDUAL HEAT REMOVAL**

COMPONENTS: 10MOV-17 and 10MOV-18 CATEGORY: A

SAFETY FUNCTION: These valves remain closed to protect the RHR System piping and components from over-pressurization during plant operation and inadvertent drain down events while in cold shutdown. They also perform a containment isolation function.

JUSTIFICATION: With the reactor pressure greater than 75 psig, these valves are prevented from opening by an electrical interlock.

4. SYSTEM: **REACTOR BUILDING CLOSED LOOP COOLING**

COMPONENTS: 15AOV-132A, B; 15AOV-133A, B CATEGORY: A

SAFETY FUNCTION: These valves close to provide containment isolation.

JUSTIFICATION: During normal plant operation, these valves must remain open to provide cooling water to the recirculation pump motor and seal coolers. Closing these valves would result in damage to the recirculation pumps.

5. SYSTEM: **REACTOR BUILDING CLOSED LOOP COOLING**

COMPONENTS: 15AOV-130A, B; 15AOV-131A, B; 15AOV-134A CATEGORY: A

SAFETY FUNCTION: These valves close to provide containment isolation.

JUSTIFICATION: During plant operation, these valves must remain open to provide cooling water to the Drywell coolers and Drywell equipment drain sump cooler. Closing these valves during operation could cause a spike in Drywell pressure due to the loss of cooling water flow which may result a reactor scram and plant shutdown.

Cold Shutdown Justifications

6. SYSTEM: **HIGH PRESSURE COOLANT INJECTION**

COMPONENT: 23HPI-18 CATEGORY: C

SAFETY FUNCTION: This valve opens to provide a flowpath for the HPCI system injection to the reactor vessel.

JUSTIFICATION: With the reactor at operating pressure, the HPCI pump can develop sufficient discharge pressure to open this valve, however HPCI injection of cold water to the reactor vessel during critical operation could result in an undesirable reactivity excursion and thermal transient to the piping components. During plant operation the differential pressure developed across the valve disc could be in excess of 1000 psid - precluding manual manipulation of the valve. Therefore, these valves cannot be exercised during normal plant operation.

7. SYSTEM: **CONTROL ROD DRIVE HYDRAULICS**

COMPONENTS: 03HCU-115 (Typical for 137 HCUs) CATEGORY: C

SAFETY FUNCTION: These valves close on initiation of a scram to prevent diversion of scram drive water flow into a depressurized charging header.

JUSTIFICATION: Exercising these valves during operation would require depressurization of the charging header with the potential for a loss of scram function.

8. **DELETED**

9. SYSTEM: **FEEDWATER**

COMPONENTS: 34NRV-111A,B CATEGORY: A,C

SAFETY FUNCTION: These valves close to provide containment isolation and to prevent diversion of HPCI flow into the feedwater system.

JUSTIFICATION: Exercising these valves during operation would require isolation of feedwater flow to the reactor vessel. This not prudent nor practical without a plant shutdown.

Cold Shutdown Justifications

10. SYSTEM: **CONTAINMENT VENT & PURGE**

COMPONENTS: 27AOV-111, 112, 113, 114, 115, 116 CATEGORY: A

SAFETY FUNCTION: These valves close to provide a containment isolation function.

JUSTIFICATION: Due to NRC concerns that these valves will not close under Design Basis Accident conditions, they will not be opened whenever primary containment is required except for safety-related reasons. For this reason these valves will be tested at cold shutdown when primary containment is not required.

11. **DELETED**

12. SYSTEM: **MAIN STEAM**

COMPONENTS: 29AOV-86A, B, C, D CATEGORY: A

SAFETY FUNCTION: These valves close to provide containment isolation.

JUSTIFICATION: Performance of the fail close test for the MSIVs requires entry into the Steam Tunnel. This cannot be done during normal operation.

13. SYSTEM: **MAIN STEAM**

COMPONENTS: 29MOV-203A, B CATEGORY: B

SAFETY FUNCTION: These valves open to provide flowpaths for post-accident MSIV packing leak-off to the standby gas treatment system.

JUSTIFICATION: Opening these valves during power operation could subject downstream piping to pressures in excess of its 150 psi design pressure.

Cold Shutdown Justifications

14. **DELETED**

15. **DELETED**

16. SYSTEM: **HIGH PRESSURE COOLANT INJECTION**

COMPONENT: 23HPI-13

SAFETY FUNCTION: This valve opens to allow condensate drainage from the steam exhaust piping to the suppression chamber. It closes for containment isolation.

JUSTIFICATION: Closure verification for this valve is accomplished by performing a back flow test where the drain line is isolated from the steam exhaust line and the torus is vented to atmosphere. Placing the HPIC system and containment in this configuration during plant operation is undesirable and could adversely affect the plant's response in the event of an accident.

17. SYSTEM: **REACTOR COOLANT ISOLATION COOLING**

COMPONENT: 13RCIC-37 and 13RCIC-38

SAFETY FUNCTION: These valves open to eliminate any differential pressure that could force water from the suppression chamber into the RCIC steam exhaust piping when the suppression chamber pressure is greater than atmospheric.

JUSTIFICATION: Verifying proper operation of these valves involves a test that requires isolation of the vacuum breakers for an extended period of time. During this test the RCIC System is considered to be inoperable. Due to operational concerns associated with the plant's response to possible transients without an operable RCIC system, it is considered to be imprudent to test these valves while the plant is operational.

Cold Shutdown Justifications

18. SYSTEM: **REACTOR COOLANT ISOLATION COOLING**

COMPONENT: 13RCIC-7

SAFETY FUNCTION: This valve opens to allow condensate drainage from the steam exhaust piping to the suppression chamber. It closes for containment isolation.

JUSTIFICATION: Closure verification for this valve is accomplished by performing a back flow test where the drain line is isolated from the steam exhaust line. Placing the RCIC system in this configuration during plant operation is undesirable and could adversely affect the plant's response in the event of a transient.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V1

SYSTEM:	Reactor Water Recirculation (RWR)
VALVES:	02-2RWR-13A, B
CATEGORY:	A,C
CLASS:	1
FUNCTION:	These recirculation pump seal water injection valves close to provide containment isolation.
TEST REQUIREMENT:	Per IWV-3521, exercise valves closed every three months.
BASIS FOR RELIEF:	To test during normal operations or cold shutdown requires securing the RWR pumps and entering containment to check the valves closed via a back-leakage test. Testing during operation is therefore impossible and, during cold shutdown, performing back-leakage tests would place an undue burden on the plant staff.
ALTERNATE TESTING:	During each refuel outage, these normally open valves will be verified to close during leak testing performed per 10CFR50, Appendix J.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V2

SYSTEM:	Control Rod Drive (CRD)	
VALVES:	03AOV-126 03AOV-127	03HCU-114
CATEGORY:	B	C
CLASS:	2	2

FUNCTION: During a reactor scram, 03AOV-126 and -127 receive a signal to open and thus allow the scram charging water flow from the HCU accumulators to the CRD mechanism and the scram discharge water flow from the CRD mechanism to the scram discharge volumes. Check valve 03HCU-114 is located downstream of 03AOV-127, and opens to permit scram discharge flow.

TEST REQUIREMENT: Per IWV-3411, exercise these valves for operability every three months.

Per IWV-3413(b), the stroke time of all power-operated valves shall be measured.

BASIS FOR RELIEF: Exercising these valves quarterly during power operations would result in rapid insertion of control rods. This is undesirable because of subjecting the reactor core to rapid reactivity transients

The AOVs are fast-acting valves with full-stroke time within a fraction of a second and are not equipped with indication of both open and close position. Direct measurement of full stroke time is impractical.

ALTERNATE TESTING: These valves will be tested in accordance with the JAF Technical Specification scram time test requirements as follows:

- 10% of all operable control rods shall be scram time tested every 16 weeks (TS Section 4.3.C.2)

Valve Relief Requests

NOTE V2 (cont'd.)

- All operable control rods shall be scram time tested after each refueling outage with reactor pressure above 950 psig (TS Section 4.3.C.1).

In all cases the measured scram time will be evaluated. A satisfactory scram time test verifies proper operation of these valves.

NOTE V3 This relief request has been withdrawn.

NOTE V4 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V5

SYSTEM:	Standby Liquid Control (SLC)
VALVES:	11SLC-16 11SLC-17
CATEGORY:	A,C
CLASS:	1
FUNCTION:	These valves prohibit backflow from the reactor vessel to the SLC System and provide for containment isolation. They open to permit SLC System flow to the reactor vessel.
TEST REQUIREMENT:	Per IWV-3521, exercise valves every three months.
BASIS FOR RELIEF:	Full or partial-stroke exercising these valves requires that flow be established through the subject check valves. The only practical means of initiating flow through these valves requires actuation of the SLC system and pumping from the SLC Tank to the reactor vessel. This would introduce boron into the reactor vessel resulting in unacceptable reactivity and chemistry transients. Testing during cold shutdown would result in chemistry transients and undue burden on the plant staff with respect to maintenance of the SLC Pump explosive valves.
ALTERNATE TESTING:	Once during each operating cycle (normally a refuel outage) and as required by Technical Specifications, the valves shall be cycled open by injecting water into the reactor vessel by use of the Standby Liquid Control pumps. Following the exercise test as described above, the valves will be verified to close by means of a leakrate test performed per 10CFR50, Appendix J.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V6

SYSTEM:	Reactor Core Isolation Cooling
VALVES:	13RCIC-04 13RCIC-05
CATEGORY:	A,C
CLASS:	2
FUNCTION:	These valves close to provide containment isolation.
TEST REQUIREMENT:	Per IWV-3521, exercise these valves closed every three months.
BASIS FOR RELIEF:	These valves are exercised open during RCIC surveillance testing performed periodically during plant operations in accordance with the JAF Technical Specifications. Since there is no provision on either of these valves that provides position indication of the disc, valve closure must be verified by backflow or leakage testing. In order to verify valve closure by the backflow technique, the RCIC exhaust line must be isolated for the duration of the test causing the RCIC System to be inoperable. The potential safety impact of voluntarily placing the RCIC System in an inoperable status during plant operation at power is considered to be imprudent and unwarranted in relation to any apparent gain in system reliability derived from the closure verification. In addition, the valves are located approximately twenty (20) feet from the floor necessitating erection of a large scaffold in the vicinity of the RCIC pump. This also is considered to be undesirable from the aspect of potential damage to RCIC System components should the scaffold be subjected to structural failure.

Valve Relief Requests

NOTE V6 (cont'd.)

Based on the foregoing discussion, testing of these valves during plant operation at power is considered to be impractical. During cold shutdowns, erection of the scaffold in addition to other activities related to test performance would place an extreme burden on the plant staff and would likely result in unwarranted extensions to all forced outages with the added negative impact on plant performance and availability.

Verifying closure of these valves during each refuel outage will provide sufficient assurance that the valves will continue to be operable with respect to their capability to close.

ALTERNATE TESTING: At each refueling outage, these valves will be verified to close in conjunction with leak testing performed per 10CFR50, Appendix J.

NOTE V7 This relief request has been withdrawn.

NOTE V8 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V9

SYSTEM:	High Pressure Coolant Injection (HPCI)
VALVE:	23HPI-61
CATEGORY:	C
CLASS:	2
FUNCTION:	This valve opens to provide a flowpath from the suppression chamber to the suction of the HPCI booster pump.
TEST REQUIREMENT:	Per IWV-3521, exercise this valve open every three months.
BASIS FOR RELIEF:	The only practical method available to full flow exercise this valve is to pump water from the suppression pool into the reactor vessel or the Condensate Storage Tank. Due to the lack of suitable water quality in the suppression pool, neither of these options is practical.
ALTERNATE TESTING:	This valve will be partial-flow tested once per operating cycle. At least once every six (6) years this valve will be disassembled, inspected, and verified to be operable.

NOTE V10 This relief request has been withdrawn.

NOTE V11 This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V12

SYSTEM:	Feedwater System
VALVES:	34FWS-28A, B
CATEGORY:	A,C
CLASS:	1
FUNCTION:	These valves close for containment isolation upon cessation of feedwater flow during accident conditions.
TEST REQUIREMENT:	Per IWV-3521, exercise these valves closed every three months.
BASIS FOR RELIEF:	There are no position indicators on these valves or other means to verify closure, thus, the only practical means of verifying closure is to perform a backflow or leakage test. Performing such a test requires entry into the containment vessel and extensive system preparations, including draining of the main feedwater piping from the outlet of the sixth point feedwater heaters to the reactor vessel isolation valves (approximately 2000 gallons per line). Furthermore, testing of 34FWS-28B requires shutdown of the cleanup system. It is estimated that testing of either of these valves would require up to 24 hours and demand significant staff resources. During plant operation at power, these valves cannot be closed without precipitating a plant shutdown. Verifying closure of these valves during each refuel outage will provide sufficient assurance that the valves continue to be operable with respect to their capability to close.
ALTERNATE TESTING:	At each refueling outage, these valves will be verified to close in conjunction with leak testing performed per 10CFR50, Appendix J.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V13 — This relief request has been withdrawn.

NOTE V14

SYSTEM: Instrument Air

VALVES: 39IAS-22
39IAS-29

CATEGORY: A,C

CLASS: 2

FUNCTION: These valves open to provide nitrogen to the MSIV's and the SRV accumulators inside the containment. They close for containment isolation.

TEST REQUIREMENTS: Per IWV-3521, exercise these valves open every three months.

BASIS FOR RELIEF: Exercising these valves (open) is performed by charging the bleed-down header following MSIV testing. During plant operation at power, this is impractical since closure of the MSIV's would cause a plant trip. Also, performing such a test requires entry into the containment vessel and local manipulation of test connections located inside the drywell. During plant operation at power and, on occasion, while in the cold shutdown mode, the containment atmosphere is maintained in a nitrogen-inerted condition. During such periods, entry into the containment is not practical due to personnel safety concerns.

ALTERNATE TESTING: These valves will be exercised (open) during cold shutdown periods when the containment is de-inerted consistent with the requirements of IWV-3522 and the provisions of Note V51.

NOTE V15 — This relief request has been withdrawn.

NOTE V16 — This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V17

SYSTEM:	High Pressure Coolant Injection
VALVES:	23HPI-402 23HPI-403
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves open to eliminate any differential pressure that could force water from the suppression chamber into the HPCI exhaust piping when the suppression chamber pressure is greater than atmospheric. They close to prevent HPCI exhaust steam from entering the suppression chamber air space, thus bypassing the quenching action of the suppression pool.
TEST REQUIREMENTS:	Per IWV-3521, exercise these valves open and closed every three months.
BASIS FOR RELIEF:	There are no position indicators on these valves or other means for verifying valve closure, thus the only practical means of verifying closure is to perform a backflow or leakage test. Since the valves are installed in series with no intermediate test tap, verifying that each individual valve closes is not practical. In order to perform the specified safety function in the closed direction, only one valve of the pair needs to close. Thus, verifying that either valve closes is adequate to demonstrate reliable operation of the pair. Operation of the HPCI pump turbine itself does not prove operability of these valves and special testing is required. This testing necessitates isolation of the vacuum breaker piping which, in turn, results in the inoperability of the HPCI System for the duration of the test. Due to the importance of the HPCI system function and the lack of a redundant HPCI train, it is not considered prudent to perform this testing during plant operation at power.

Valve Relief Requests

NOTE V17 (cont'd.)

ALTERNATE TESTING: These valves will be exercised open and the pair (at least one valve) will be verified to close during cold shutdown periods per IWV-3522. Should the closure test of both valves fail, then corrective action will be applied to both valves prior to returning the system to operability.

NOTE V18 This relief request is withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V19

SYSTEM:	Containment Isolation Valves
VALVES:	See Valve List Attached
CATEGORY:	A
CLASS:	See Valve List Attached
FUNCTION:	Containment Isolation.
TEST REQUIREMENT:	Per IWV-3426, measure individual containment isolation valves leak rates.
BASIS FOR RELIEF:	By original plant design, these valves are tested in established groupings to determine a penetration leak rate. The Appendix J, Type C LLRT test methodology has been reviewed and addressed in Section 3.7 of the Technical Specifications.
ALTERNATE TESTING:	Test these containment isolation valves by the original design groupings.

Valve Relief Requests

NOTE V19 (cont.)

VALVE ID	CLASS	VALVE ID	CLASS
10MOV-26A,B	2	27AOV-113	2
10MOV-31A,B	2	27AOV-114	2
10MOV-38A,B	2	27AOV-115	2
10MOV-39A,B	2	27AOV-116	2
10RHR-52A,B	2	27AOV-117	2
12MOV-69	1	27AOV-118	2
13MOV-15	1	27AOV-131A,B	2
13MOV-16	1	27AOV-132A,B	2
13MOV-21	1	27CAD-67,68,69,70	2
		27MOV-113	2
		27MOV-117	2
16-1A0V-101A,B	2	27MOV-122	2
16-1AOV-102A,B	2	27MOV-123	2
23M0V-15	1	27VB-6	2
23MOV-16	1	27VB-7	2
23MOV-19	1	29AOV-80A,B,C,D	1
23MOV-60	1	29AOV-86A,B,C,D	1
27AOV-101A,B	2	34NRV-111A,B	1
27AOV-111	2		
27AOV-112	2		

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V20 — This relief request has been withdrawn.

NOTE V21 — This relief request has been withdrawn.

NOTE V22

SYSTEM:	High Pressure Coolant Injection
VALVE:	23HPI-56
CATEGORY:	C
CLASS:	2
FUNCTION:	Opens to permit HPCI turbine condensate to drain to the suppression chamber.
TEST REQUIREMENTS:	Per IWV-3521, exercise this valve open every three months.
BASIS FOR RELIEF:	There is no means for exercising this valve to the open position where positive indication of acceptable valve performance is verified.
ALTERNATE TESTING:	In accordance with Generic Letter 89-04 Position 2, at least once during each operating cycle (normally a refuel outage) the valve will be disassembled, inspected, and verified to be operable.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V23	This relief request has been withdrawn.
NOTE V24	This relief request has been withdrawn.
NOTE V25	This relief request has been withdrawn.
NOTE V26	This relief request has been withdrawn.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V27

SYSTEM:	Automatic Depressurization (ADS)/Main Steam
VALVES:	02RV-71A,B,C,D,E,F,G,H,J,K and L
CATEGORY:	B,C
CLASS:	1
FUNCTION:	All these valves are required to open when actuated by manual switch to relieve reactor pressure during an accident or transient condition. Valves 02RV-71A,B,C,D,E,G, and H open upon receipt of ADS actuation signal.
TEST REQUIREMENT:	Per IWV-3411 and 3413(b), exercise and measure the stroke time every three months.
BASIS FOR RELIEF:	These valves are fast-acting valves and do not have position indication. Therefore, stroke time cannot be effectively measured. When testing these valves, a reactor pressure of at least 50 psig is needed for opening by the pilot assembly and a minimum reactor pressure of 940 psig is specified to minimize potential damage to the pilot valve and disc surfaces. Testing at each start-up from a cold shutdown condition would produce additional stress cycles which may lead to a low cycle fatigue failure.
ALTERNATE TESTING:	Following each refuel outage or once each operating cycle with reactor pressure at least 940 psig, these valves will be exercised in accordance with the operational test requirements set forth in the JAF Technical Specifications. SRV tailpipe temperature and acoustic monitors will be used to verify valve opening. Additionally, in accordance with Technical Specification requirements, the pilot assembly for each SRV will be bench tested at least once every two operating cycles. The bench testing includes "as-found" setpoint, leakage and pilot disc sticking tests.

Valve Relief Requests

NOTE V27 (cont.)

In addition to the pilot assembly bench testing, refurbishment is performed, if necessary, in accordance with the valve manufacturer's procedure including inspection of the pilot valve stem labyrinth seal area. This program of testing, inspections, and maintenance is performed in accordance with the related BWROG recommendations to monitor and resolve setpoint drift problems.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V28

SYSTEM:	Various
VALVES:	Excess Flow Check Valves (Attached)
CATEGORY:	A,C
CLASS:	1
FUNCTION:	These valves close to isolate the respective instrument lines in the event of a pipe break downstream of the valves.
TEST REQUIREMENT:	Per IWV-3521, exercise these valves closed every three months.
BASIS FOR RELIEF:	Testing these valves requires isolation of their associated safety-related instrument which could place the plant in an unsafe condition. In addition, the induced hydraulic transients resulting from establishing flow and subsequent valve closure would most likely result in an engineered safety feature actuation. During such testing, radiation doses to test personnel would be high due to the location of these valves and effluence of reactor water during the test. These valves have proven to be highly reliable and testing at the Code-required frequency would not significantly increase the reliability of these valves.
ALTERNATE TESTING:	Exercise these valves closed for operability once each operating cycle.

Valve Relief Requests

NOTE V28 (cont.)

EXCESS FLOW CHECK VALVES

02-2EFV-PS-128A,B	02-3EFV-11	02-3EFV-23
02-2EFV-PT-24A,B	02-3EFV-13A,B	02-3EFV-25
02-2EFV-PT-25A,B	02-3EFV-15A,B	02-3EFV-31A,B,C,D
02-2EFV1-DPT-111A,B	02-3EFV-15N	02-3EFV-31E,F,G,H
02-2EFV1-FT-110A,C,E,G	02-3EFV-17A,B	02-3EFV-31J,K,L,M
02-2EFV2-DPT-111A,B	02-3EFV-19A,B	02-3EFV-31N,P,R,S
02-2EFV2-FT-110A,C,E,G	02-3EFV-21A,B,C,D	02-3EFV-33
	02-3EFV-23A,B,C,D	
13EFV-01A,B	14EFV-31A,B	
13EFV-02A,B		
23EFV-01A,B	29EFV-30A,B,C,D	29EFV-53A,B,C,D
23EFV-02A,B	29EFV-34A,B,C,D	29EFV-54A,B,C,D

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V29

SYSTEM:	Various
VALVES:	Fast Acting Valves (Attached)
CATEGORY:	See Valve List on Next Page
CLASS:	See Valve List on Next Page
FUNCTION:	See Valve List on Next Page
TEST REQUIREMENT:	Valve stroke time shall be evaluated and test intervals changed with respect to corrective action requirements of IWV-3417(a).
BASIS FOR RELIEF:	The measured stroke times of these valves are consistently well below two (2) seconds and can vary significantly due to circumstances unrelated to the condition of the valves. Two reasons for these variations are inconsistency of operator reaction times and changes in system parameters. Because of this, trending the stroke times of these fast acting valves will provide inaccurate, and sometimes misleading indication of valve degradation.
ALTERNATE TESTING:	In accordance with Generic Letter 89-04, Position 6, if the measured stroke time is greater than the maximum limiting stroke time of 2 seconds, corrective action per IWV-3417(b) will be taken. Test records will verify satisfactory stroke time is achieved but, need not require recording of the actual measured stroke time.

Valve Relief Requests

NOTE V29 (cont.)

VALVE ID	CATEGORY	CLASS	FUNCTION
02-2SOV-001	A	1	Close
02-2SOV-002	A	1	Close
16-1AOV-101A, B	A	2	Close
16-1AOV-102A, B	A	2	Close
20AOV-83	A	2	Close
20AOV-95	A	2	Close
23HOV-1	B	2	Close
23AOV-39	B	2	Close
23AOV-42	B	2	Close
27SOV-119E1, E2, F1, F2	A	2	Close
27SOV-120E1, E2, F1, F2	A	2	Close
27SOV-122E1, E2, F1, F2	A	2	Close
27SOV-123E1, E2, F1, F2	A	2	Close
27SOV-124E1, E2, F1, F2	A	2	Close
27SOV-125A, B, C, D	A	2	Close
27SOV-135A, B, C, D	A	2	Close
27SOV-141	A	2	Open, Close
27SOV-145	A	2	Open, Close
27AOV-126A, B	B	2	Open, Close
27AOV-128A, B	B	2	Open, Close
27AOV-129A, B	B	2	Open, Close

Note: Function is the direction in which the valve is considered to be fast acting, $\leq$ 2 seconds.

Valve Relief Requests

NOTE V30 This relief request has been withdrawn.

NOTE V31 This relief request has been withdrawn.

Valve Relief Requests

NOTE V32

SYSTEM:	Residual Heat Removal (RHR)
VALVES:	10RHR-64A, B, C, D
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves open on forward flow to provide minimum flow protection for the RHR pumps and close on reverse flow to prevent diversion of flow through an idle parallel pump.
TEST REQUIREMENT:	Per IWV-3521, exercise these valves open every three months.
BASIS FOR RELIEF:	These valves are exercised open every three months by flow during pump testing. However, quantitative flow measurement as a means of verifying these valves open has been determined to be impractical.

There is no installed flow instrumentation in the minimum flow line thus attempts at flow measurements are being made by strap on ultrasonic flow meters. Due to the minimum flow line configuration and operating conditions, there is a high amount of cavitation/turbulence in the line causing the ultrasonic flow meter to go into fault. Attempts have been made at different locations and with different size transducers, and faults still occur.

This test method requires the RHR pumps to be operated repeatedly (three to four times) at minimum flow conditions for the maximum time period (5 minutes) allowed by procedure. Running at this condition is undesirable, particularly for a test method that frequently does not yield meaningful results. NRC Information Notice 89-08 documented concerns about pump damage caused by operating at low flow conditions. When this test is performed with no flow measurements being taken, the time spent at minimum pump flow is short.

Valve Relief Requests

NOTE V32 (cont.)

In addition, this testing must be performed in a radiation area which has caused increased exposure to personnel while multiple test attempts and transducer repositioning are accomplished. It is concluded that continued efforts with this method are not practical.

Attempts were made to distinguish the check valve opening impact on the valve bonnet using a seismic vibration probe. Meaningful results could not be obtained again due to the high background noise and vibration associated with a pump start at minimum flow.

The method of using process flow and pressure instrumentation in the main line to infer the flow in the minimum flow line was investigated. However, the small flow rate through the minimum flow line in comparison with the main line flow would not be discernable within the accuracy of the process instrumentation.

ALTERNATE TESTING: These valves will continue to be exercised open during quarterly pump testing without flow measurement.

Also, in accordance with Generic Letter 89-04 Position 2, at least once each operating cycle (normally a refuel outage) at least one (1) valve will be disassembled, inspected, and verified to be operable. The acceptance criteria as stated in the GL is provided in the maintenance procedure used for check valve disassembly. If any valve is found to be inoperable, the remaining valves will be disassembled and inspected prior to startup. The inspection schedule will be such that all four (4) valves in the group are inspected at least once every six (6) years.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V33 — This relief request has been withdrawn.

NOTE V34

SYSTEM: High Pressure Coolant Injection

VALVES: 23HPI-12
23HPI-65

CATEGORY: A,C

CLASS: 2

FUNCTION: These valves open to provide a flowpath from the HPCI turbine exhaust to the suppression pool. They close to provide containment isolation.

TEST REQUIREMENTS: Per IWV-3521, exercise these valves closed every three months.

BASIS FOR RELIEF: These valves are exercised open quarterly during HPCI surveillance testing performed during plant operation in accordance with the JAF Technical Specifications. Since there is no disc position indication on either of these valves, closure must be verified by backflow or leakage testing.

In order to verify valve closure by the backflow technique, the HPCI exhaust line must be isolated for the duration of the test, causing the HPCI System to be inoperable. The potential safety impact of voluntarily placing the HPCI System in an inoperable status during plant operation at power is considered to be imprudent and unwarranted in relation to any apparent gain in system reliability derived from the closure verification. In addition, the valves are located approximately twenty (20) feet from the floor, necessitating erection of a large scaffold in the vicinity of the HPCI pump. This also is considered to be undesirable from the aspect of potential damage to HPCI System components should the scaffold be subjected to structural failure.

Valve Relief Requests

NOTE V34 (cont.)

Based on the foregoing discussion, testing of these valves during plant operation at power is considered to be impractical. During cold shutdowns, erection of the scaffold in addition to other activities related to test performance would place an extreme burden on the plant staff and would likely result in unwarranted extensions to all forced outages with the added negative impact on plant performance and availability.

Verifying closure of these valves during each refuel outage will provide sufficient assurance that the valves will continue to be operable with respect to their capability to close.

ALTERNATE TESTING: At each refuel outage, these valves will be verified to close in conjunction with leak testing performed per 10CFR50, Appendix J.

Valve Relief Requests

NOTE V35

SYSTEM:	High Pressure Coolant Injection
VALVE:	23HPI-13
CATEGORY:	C
CLASS:	2
FUNCTION:	This valve opens to permit HPCI turbine condensate to drain to the suppression chamber.
TEST REQUIREMENTS:	Per IWV-3521, exercise this valve open every three months.
BASIS FOR RELIEF:	There is no position indicator on this valve or any other means to verify the valve opens.
ALTERNATE TESTING:	In accordance with Generic Letter 89-04 Position 2, at least once each operating cycle (normally a refuel outage) the valve will be disassembled, inspected, and verified to be operable.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V36	This relief request has been withdrawn.
NOTE V37	This relief request has been withdrawn.
NOTE V38	This relief request has been withdrawn.
NOTE V39	This relief request has been withdrawn.
NOTE V40	This relief request has been withdrawn.
NOTE V41	This relief request has been withdrawn.
NOTE V42	This relief request has been withdrawn.
NOTE V43	This relief request has been withdrawn.
NOTE V44	This relief request has been withdrawn.
NOTE V45	This relief request has been withdrawn.

Valve Relief Requests

NOTE V46

SYSTEM:	Various
VALVES:	Containment Isolation Valves (≥6 inches Nominal Pipe Size)
CATEGORY:	A and A,C
CLASS:	1 or 2
FUNCTION:	These valves close to provide containment isolation.
TEST REQUIREMENTS:	Per IWV-3427(b), seat leakage rate shall be trended and corrective action taken.
BASIS FOR RELIEF:	Based on input from many utilities and NRC staff review of testing data at some plants, the NRC determined that the usefulness of IWV-3427(b) does not justify the burden of complying with the requirements of IWV-3427(b).
ALTERNATE TESTING:	In accordance with Generic Letter 89-04, Position 10, these valves are provided with leak rate limits specified in accordance with IWV-3426 and will be repaired or replaced whenever seat leakages exceed established limits.

Valve Relief Requests

NOTE V46 (cont.)

VALVE ID	VALVE ID
10MOV-26A,B	27AOV-101A,B
10MOV-27A,B	27AOV-111
10MOV-31A,B	27AOV-112
10MOV-39A,B	27AOV-113
12MOV-15	27AOV-114
12MOV-18	27AOV-115
13RCIC-4	27AOV-116
13RCIC-5	27AOV-117
14MOV-11A,B	27AOV-118
15AOV-130A	27VB-6
15RBC-24A	27VB-7
23HPI-12	29AOV-80A,B,C,D
23HPI-65	29AOV-86A,B,C,D
23MOV-15	34FWS-28A,B
23MOV-16	34NRV-111A,B
23MOV-19	46ESW-16B

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V47

SYSTEM:	High Pressure Coolant Injection
VALVES:	23HPI-62
CATEGORY:	C
CLASS:	2
FUNCTION:	This valve opens to provide a flowpath for minimum flow from the HPCI main pump.
TEST REQUIREMENTS:	Per IWV-3521, exercise this valve open every three months.
BASIS FOR RELIEF:	Due to the configuration of the minimum flow motor operated valve control logic, fully developed flow cannot be achieved through this check valve. Additionally, full-stroke exercising cannot be verified with existing instrumentation, and therefore cannot be performed.
ALTERNATE TESTING:	In accordance with Generic Letter 89-04 Position 2, the valve will be disassembled and inspected each operating cycle (normally a refuel outage).

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V48

SYSTEM: Containment Atmospheric Dilution (CAD)

VALVES: 27VB-1 thru 5

CATEGORY: A,C

CLASS: 2

FUNCTION: These valves open to relieve vacuum from the suppression chamber to the drywell if differential pressure between them should exceed 0.5 psid. They close to prevent bypass flow from the drywell to the suppression chamber without the quenching action of the suppression pool.

TEST REQUIREMENTS: Per IWV-3424 and IWV-3426, measure individual valve leakrates for valves.

Per IWV-3427(b), seat leakage rate shall be trended and corrective action taken.

BASIS FOR RELIEF: The configuration of the vacuum breaker lines precludes measuring individual valve leakrates.

In accordance with JAF Technical Specifications, Section 4.7.A.5.d, these valves are leak tested each cycle (normally during refueling outages) as a group with other elements of the containment vessels in conjunction with an integrated drywell/suppression chamber bypass leakage test. This test method may be subjected to significant variations associated with other contributing factors involved with the difficulty of performing the test rather than indication of valve degradation. As such, the usefulness of applying IWV-3427(b) would not justify the burden and uncertainties associated with the performance of this test.

ALTERNATE TESTING: These valves will be tested together and appropriate acceptance criteria established in accordance with JAF Technical Specifications, Section 4.7.A.5.d.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V49

SYSTEM:	Emergency Service Water
VALVES:	46(70)ESW-101 thru 104
CATEGORY:	B
CLASS:	3
FUNCTION:	These valves are manually opened to provide ESW flow to Control and Relay Room air handlers to ensure continued cooling in the event the normal chilled water system is rendered inoperable.
TEST REQUIREMENTS:	Per IWV-3411, exercise these valves open every three months.
BASIS FOR RELIEF:	These valves provide isolation between the raw ESW System and the glycol/water mixture in the chilled water system. Opening these valves will cause contamination of the glycol/water solution.
ALTERNATE TESTING:	These valves will be exercised during each reactor refueling outage.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V50

SYSTEM:	Traversing In-Core Probe (TIP)
VALVES:	07SOV-104A, B, C
CATEGORY:	A
CLASS:	2
FUNCTION:	These valves close to provide containment isolation.
TEST REQUIREMENTS:	Per IWV-3413(b), measure the full stroke time of the valve.
BASIS FOR RELIEF:	The computer control system for TIP system includes a provision for measuring valve cycle time (opened and closed) and not closure time alone. The sequence opens the subject valve (stroke < 2 seconds), maintains it energized for 10 seconds (including the opening stroke), and de-energizes the valve solenoid allowing the valve to stroke closed (< 2 seconds). The total elapsed valve cycle time is specified to be ≤ 12 seconds.
ALTERNATE TESTING:	The overall cycle time (opened and closed) for these valves will be measured and evaluated per IWV-3413 and IWV-3417.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V51

SYSTEM:	Various
VALVES:	All valves tested during cold shutdown conditions.
CATEGORY:	Various
CLASS:	Various
FUNCTION:	Various
TEST REQUIREMENT:	Valves shall be exercised ... unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full stroke exercised during cold shutdowns. Full stroke exercising during cold shutdowns for all valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows: For intervals of 3 months or longer - exercise during each shutdown. (IWV-3412 and IWV-3522)
BASIS FOR RELIEF:	In many instances testing of all valves designated for testing during cold shutdown cannot be completed due to the brevity of an outage or the lack of plant conditions needed for testing specific valves. It has been the policy of the NRC that if testing commences in a reasonable time and reasonable efforts are made to test all valves, then outage extension is not required when the only reason is to provide the opportunity for completion of valve testing. ASME/ANSI OMa-1987, Operation and Maintenance of Nuclear Power Plants, Part 10 (Paragraphs 4.2.1.2 and 4.3.2.2) recognizes this issue and allows deferred testing as set forth below.

Valve Relief Requests

NOTE V5: (cont.)

ALTERNATE TESTING: For those valves designated to be exercised or tested during cold shutdown, exercising shall commence as soon as practical after the plant reaches a stable cold shutdown condition as defined by the applicable Technical Specification but no later than 48 hours after reaching cold shutdown. The 48-hour requirement need not apply if all valves are tested during an outage. Valve testing need not be performed more often than once every three (3) months except as provided for in IWV-3417(a). Completion of all valve testing during a cold shutdown outage is not required if the length of the shutdown period is insufficient to complete all testing. Testing not completed prior to startup will be rescheduled for the next cold shutdown in a sequence such that the test schedule does not omit nor favor certain valves or groups of valves.

Valve Relief Requests

NOTE V52 — This relief request has been withdrawn.

NOTE V53 — This relief request has been withdrawn.

NOTE V54

SYSTEM: High Pressure Coolant Injection

VALVE: 23HPI-130

CATEGORY: C

CLASS: 2

FUNCTION: This valve opens to provide a flowpath for cooling water circulation through the HPCI turbine lube oil cooler.

TEST REQUIREMENTS: Per IWV-3521, exercise this valve open every three months.

BASIS FOR RELIEF: This valve has no means of determining disc position or flowrate and, thus there is no mechanism for verifying full accident flow and nor full-stroke of this valve. Satisfactory operation of the HPCI turbine during quarterly testing verifies adequate operation of valve and cooling system.

ALTERNATE TESTING: In accordance with Generic Letter 89-04 Position 2, at least once during each operating cycle (normally a refuel outage) the valve will be disassembled, inspected, and verified to be operable.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V55 — This relief request has been withdrawn.

NOTE V56

SYSTEM: Residual Heat Removal

VALVES: 10RHR-95A,B

CATEGORY: C

CLASS: 2

FUNCTION: These valves close to prevent reverse flow from the Torus.

TEST REQUIREMENTS: Per IWV-3521, exercise these valves closed every three months.

BASIS FOR RELIEF: These are simple check valves with no means of determining disc position without performing a backleakage test. Performing such a test, would require setting up a hydrostatic pump in a high radiation area.

During cold shutdown, the system lineup changes and effort involved with testing would constitute an unreasonable burden on the plant staff.

ALTERNATE TESTING: During each refuel outage these valves will be verified to close during a hydrostatic leakrate test.

Valve Relief Requests

NOTE V57

SYSTEM: Core Spray

VALVES: 14AOV-13A,B

CATEGORY: A,C

CLASS: 1

FUNCTION: These valves open to provide flowpaths from the Core Spray System to the reactor vessel. They close for pressure isolation protection of the low pressure core spray piping.

TEST REQUIREMENTS: Per IWV-3521, exercise these valves open every three months.

BASIS FOR RELIEF: There is no mechanism by which these valves can be full-stroke exercised without injecting water from the core spray pumps to the reactor vessel.

During plant operation, the core spray pumps cannot produce sufficient discharge pressure to overcome reactor vessel pressure and provide flow into the vessel. The installed air operators are capable of exercising the valves, providing there is no differential pressure across the valve seat; obviously this is not the case.

During cold shutdown, injecting into the reactor vessel requires a major effort to establish the prerequisite conditions and realignment of the Core Spray System to allow supplying water from the CST. Torus water cannot be used since it does not meet the chemistry requirements for reactor grade make-up. It is estimated that such a test would take about 24 hours to perform and would result in a significant burden on the plant operating staff. In addition, there is a potential for overfilling the reactor vessel and flooding the main steam lines. This could adversely affect the performance of the main steam safety/relief valves (SRV's) since there is cause to believe that a contributing factor to the historically poor performance of the SRV's is water contamination of the operators.

Valve Relief Requests

NOTE V57 (cont.)

The installed check valve operators are capable of exercising the valves through their full stroke; however, the sizing of the operators does not satisfy the criteria set forth in IWV-3522(b).

ALTERNATE TESTING: During cold shutdown, each of these valves will be exercised using the installed operators.

Each of these valves will be full-stroke exercised during each refuel outage by injecting full accident flow into the reactor vessel.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V58

SYSTEM:	Automatic Depressurization
VALVES:	02RV-1 thru 02RV-11 02VB-1 thru 02VB-11
CATEGORY:	C
CLASS:	2
FUNCTION:	These valves remain closed to prevent steam from an open safety/relief valve (SRV) from entering the drywell. They open following closure of an SRV to prevent the formation of a water column within the downcomer that could cause torus damage during subsequent lifting of the same SRV.
TEST REQUIREMENTS:	Per IWV-3521, exercise these valves open and closed every three months.
BASIS FOR RELIEF:	Exercising these valves require local manipulation of each valve and thus entry into the containment. During plant operation at power, and on occasion while in cold shutdown, the containment atmosphere is maintained in a nitrogen-inerted condition. During such periods, entry into the containment is not practical due to personnel safety concerns.
ALTERNATE TESTING:	These valves will be exercised during cold shutdowns when the containment is de-inerted consistent with the requirements of IWV-3522 and the provisions of Note V51.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V59

SYSTEM:	Main Steam
VALVES:	29AOV-80A, B, C, D
CATEGORY:	A
CLASS:	1
FUNCTION:	These valves are normally open to provide steam to the main turbine generator and auxiliaries. They close to isolate steam flow and for containment isolation.
TEST REQUIREMENTS:	Per IWV-3415, fail-safe test these valves closed every three months or during cold shutdowns.
BASIS FOR RELIEF:	Fail-safe exercising these valves requires local manipulation of valves located inside the containment vessel and thus entry into the containment. During plant operation at power, and on occasion while in cold shutdown, the containment atmosphere is maintained in a nitrogen-inerted condition. During such periods, entry into the containment is not practical due to personnel safety concerns.
ALTERNATE TESTING:	These valves will be fail-safe exercised during cold shutdowns when the containment is de-inerted consistent with the requirements of IWV-3415 and the provisions of Note V51.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX B

Valve Relief Requests

NOTE V60

SYSTEM:	Residual Heat Removal
VALVES:	10AOV-68A,B
CATEGORY:	A,C
CLASS:	1
FUNCTION:	These valves open to provide LPCI injection and close to provide containment and pressure isolation.
TEST REQUIREMENTS:	Per IWV-3521, exercise these valves open and closed every three months.
BASIS FOR RELIEF:	These valves may be exercised by either operation using the installed air operators or by flow from the RHR pumps into the Recirculation System.

During plant operation, neither method is practical since the RHR pumps cannot develop sufficient head to overcome reactor pressure and the air operators are designed to open the valves with zero differential pressure.

At cold shutdown, a zero differential pressure is obtainable and operation with the air operators is possible. However, the theoretical force of the operators does not satisfy the quantitative limit of IWV-3522(b). Thus, exercising by using the air actuators can only be considered a part-stroke exercise.

During cold shutdown when the RHR System is in the shutdown cooling mode, these valves are opened by normal shutdown cooling flow. Full accident flow (as required by GL 89-04, Position 1) is currently defined as 13,900 GPM which can only be obtained by operating two pumps in parallel. Unacceptable vibration levels related to system and component design preclude throttling of the pump flow. Thus, with two RHR pumps in parallel, the resultant flow would be approximately 17,000 to 18,000 GPM. It has yet to be confirmed that the system can be operated safely in the shutdown cooling mode at

Valve Relief Requests

NOTE V60 (cont.) this high flowrate due to the size of the common pump suction header.

These valves cannot be fully opened at a single pump flowrate. Thus, full stroke exercising using one pump, in conjunction with confirmation of full stroke valve operation by a non-intrusive testing method, is also not possible.

Therefore, if operation of two RHR pumps in parallel is not practical, these valves will be disassembled and inspected on a rotating basis, one each refuel outage.

ALTERNATE TESTING: Each valve will be full flow exercised open (if practical) and closed during each cold shutdown in accordance with the requirements of Note V51.

Should full flow exercising, as outlined above, be found to be impractical, each valve will be partial-stroke exercised with flow at cold shutdown and each cycle (normally a refuel outage) one of these valves will be disassembled and inspected on a rotating basis in accordance with GL 89-04, Position 2.

APPENDIX C

SUMMARY OF CHANGES

APPENDIX C

Pump Changes

PAGE	PUMP ID(s)	CHANGE	REASON
		NONE	

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX C

Valve Changes (Rev 8)

PAGE(s)	VALVE ID(s)	CHANGE	REASON
45,46	02RV-71A thru K	Removed setpoints from remarks section	The setpoints were changed during 1995 refuel outage. The setpoints were deleted because level of detail is not required.
70, 101, 115	15RBC-21A/B 15RBC-22A/B 15RBC-24A/B 15RBC-26A/B 15RBC-33	Deleted valves from valve table, deleted Cold Shutdown Justifications CS 14 and 15, deleted valves from Relief Request V19	Determined that valves are not containment isolation valves and not required to be in program.
96,115	46ESW-15A/B 46ESW-16A/B	Deleted valves from valve table and Relief Request V19	Determined that valves are not containment isolation valves and not required to be in the program.
72	19VB-1A/B	Changed valve type from CK (check valve) to RL (relief valve)	Determined that valves were incorrectly identified as check valves.

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

APPENDIX C

Valve Changes (Rev 9)

PAGE(s)	VALVE ID(s)	CHANGE	REASON
5	N/A	Included IWV-3500 in the description of valve testing intervals.	As written, the description implied that the band of ±25 percent of the test interval was only applied to the test schedule for power operated valves. It is intended to apply to all valve testing.
66,140	14CSP-62A&B	Withdrew relief request V55.	During the 1995 refuel outage mod M1-94-014 was installed to allow reverse flow testing of these valves.