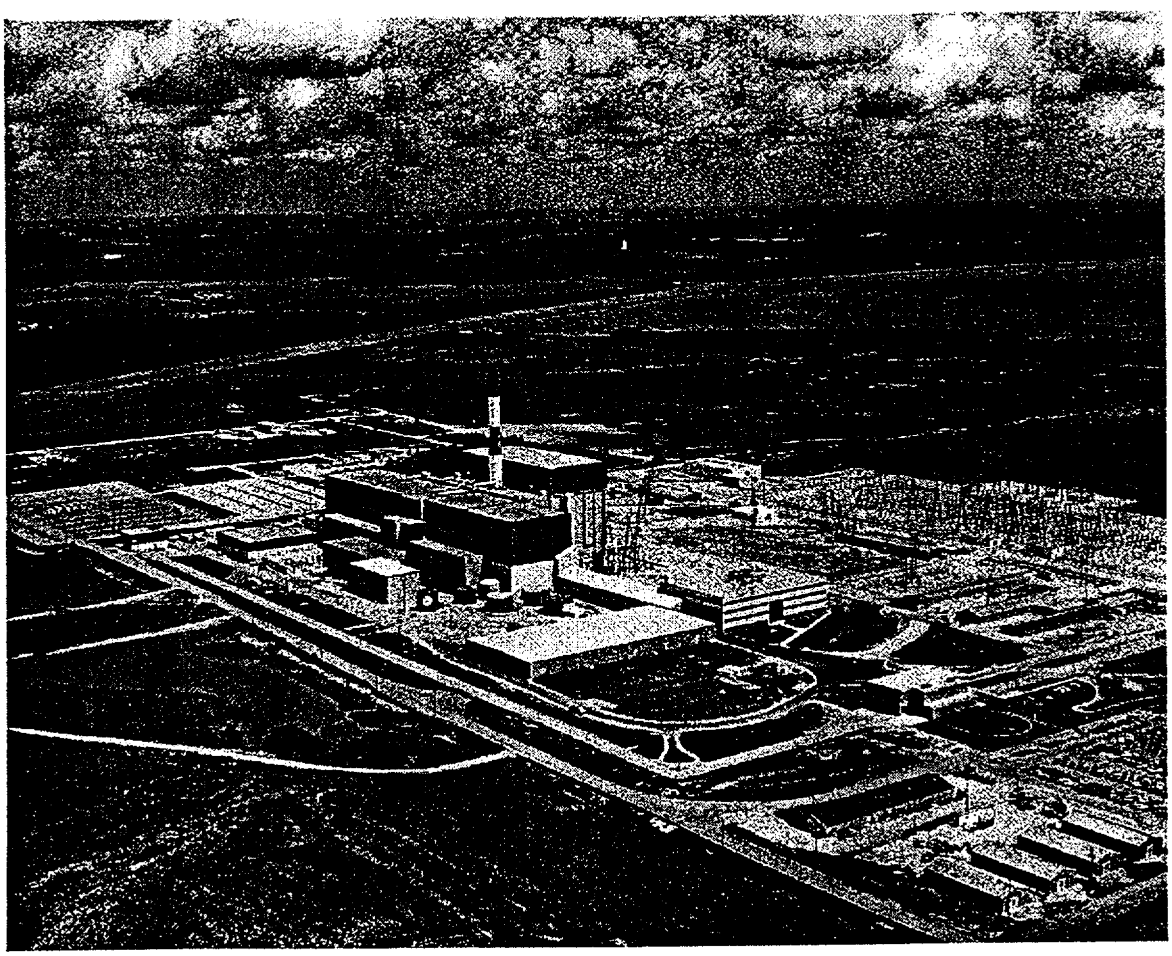
LaSalle County Station

COMBINED UNITS 1 & 2 INSERVICE TESTING PROGRAM
FOR PUMPS AND VALVES
Second Ten Year Interval, Revision 4



LaSalle County Nuclear Power Station
Units 1 & 2

Inservice Testing Program
Second Ten Year Interval
Revision 4

Commercial Service Dates:

Unit 1 – January 1, 1984
Unit 2 – October 17, 1984

LaSalle County Nuclear Power Station
2601 N. 21st Rd
Marseilles, Illinois 61341

REVISION LOG

Effective Date	Revision Description	Prepared; IST Program Engineer	Date	Approved; Engr. Programs Supervisor	Date
06/16/00	IST Scope Bases Document Update	[signature]	6/15/00	[signature]	6/15/00
08/17/01	CHECK VALVE IMPLEMENTATION 1996 ISTC & APP. II / IMP2. TECH SPECS.	[signature]	8/15/01	[signature]	8/15/01

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1.0 INTRODUCTION

1.1 Purpose

To provide requirements for the performance and administration of assessing the operational readiness of those pumps and valves with specific functions that are required to:

- Shutdown the reactor to the cold shutdown condition,
- Maintaining the cold shutdown condition, or
- To mitigate the consequences of an accident.

1.2 Scope

The program plan was prepared to meet the requirements of the following subsections of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI (1989 Edition with no Addenda), with the NRC approved Code update for check valves as indicated:

- Subsection IWP, "*Inservice Testing of Pumps in Nuclear Power Plants*"

  ASME Section XI Sub-article IWP-1100 requires pump testing be performed in accordance with the requirements stated in the ASME/ANSI Operations and Maintenance of Nuclear Power Plant Standard, Part 6, 1987 Edition through the 1988 Addenda (OMa –1988).

- Subsection IWV, "*Inservice Testing of Valves in Nuclear Power Plants*"

  ASME Section XI Article IWV-1100 requires valve testing be performed in accordance with the requirements stated in the ASME/ANSI Operations and Maintenance of Nuclear Power Plant Standard, Part 10, 1987 Edition through the 1988 Addenda (OMa –1988).

  ASME OM Code-1995 Edition, 1996 Addenda (including Appendix II) for check valves.

The LaSalle County Nuclear Power Station Pump and Valve Inservice Testing Plan will be in effect through the Second 120-month interval.

- Unit One: November 23, 1994 through October 11, 2006[(1)]
- Unit Two: October 17, 1994 through May 7, 2007[(2)]

(1) This date reflects a 690 day extension allowed by IWA-2430(e) for L1F35.
(2) This date reflects a 932 day extension allowed by IWA-2430(e) for L2R07.

This plan will be updated as required in accordance with 10CFR50.55a(f).

This program plan provides a complete listing of those pumps and valves included in the program per the requirements of:

- OM-1987, Part 1 (OM-1), "*Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices,*"
- OMa-1988, Part 6 (OM-6), "*Inservice Testing of Pumps in Light-Water Reactor Power Plants*", and
- OMa-1988, Part 10 (OM-10), "*Inservice Testing of Valves in Light-Water Reactor Power Plants*"
- OM-1995, 1996 Addenda, Check valve sections of "Inservice Testing of Valves in Light-Water Reactor Power Plants"

2.0 INSERVICE TESTING PLAN FOR PUMPS

2.1 Pump Inservice Testing Plan Description

This program plan meets the requirements of ASME/ANSI Oma-1988, Part 6 (OM-6) with the exception of specific relief requests contained in Attachment 2.

2.2 Pump Plan Table Description

The pumps included in the LaSalle County Nuclear Power Station IST Plan are listed in Attachment 14. The information contained in these tables identifies those pumps required to be tested to the requirements of ASME Section XI, the testing parameters and frequency of testing, and associated relief requests and remarks. The headings for the pump tables are delineated below.

System — The system abbreviation codes for the system containing the pump.

Pump Name — The descriptive name for the pump.

Pump EPN — The unique Equipment Part Number (EPN) for the pump. Each EPN is preceded with a Unit designator for the pump:

0	Unit 0
1	Unit 1
2	Unit 2

Safety Class — The ASME Code classification of the valve

1	Class 1
2	Class 2
3	Class 3
NC	Non-Code, Safety Related
NS	Non-Safety Related

2.2 Pump Plan Table Description (Cont'd)

P&ID	The Piping and Instrumentation Drawing on which the pump is represented.
P&ID Coor.	The P&ID Coordinate location of the pump.
Pump Type	The type of pump. C — Centrifugal PD — Positive Displacement VLS — Vertical Line Shaft
Pump Driver	The type of pump driver. MOTOR — Motor driven TURBINE — Steam turbine driven
Test Type	Measured test parameters.

PUMP SPEED	Measured only for variable speed pumps.
DIFFERENTIAL PRESSURE	Calculated from suction and discharge pressures or obtained by direct measurement.
DISCHARGE PRESSURE	Measured for positive displacement pumps.
FLOW RATE	Measured using a rate or quantity meter installed in the pump test circuit.
VIBRATION	Pump bearing vibration.

2.2 Pump Plan Table Description (Cont'd)

Test Freq.	The frequency for performing the specified inservice test. M3 Quarterly (92 Days)
Relief Request	A relief request number is listed when a specific code requirement is determined to be impracticable.
Tech. Pos.	A technical position number is listed when the requirements of the code are not easily interpreted and clarifying information is needed. The technical position is used to document how Code requirements are being implemented at the station.
Notes	Miscellaneous pump information

3.0 INSERVICE TESTING PLAN FOR VALVES

3.1 Valve Inservice Testing Plan Description

This plan establishes the test intervals, parameters to be measured and meets the requirements of OM-1, OM-10, and OM-1995/1996 Addenda for check valves, with the exception of the specific relief requests contained in Attachment 4.

Where the frequency requirements for valve testing have been determined to be impracticable, Cold Shutdown or Refuel Outage Justifications have been identified and written. These justifications are provided in Attachments 6 and 8 respectively.

3.2 Valve Plan Table Description

The valves included in the LaSalle County Nuclear Station IST Plan are listed in Attachment 16. The information contained in these tables identify for those valves that are required to be tested to the requirements of OM-1, OM-10, and ISTC, the test parameters, frequency of testing, and the associated relief requests. The headings for the valve tables are delineated below.

<u>System</u> — The unique system identifier.

<u>Valve Name</u> — The description of the valve.

<u>Valve EPN</u> — A unique identifier for the valve. Each EPN is preceded with a Unit designator for the valve:

0	Unit 0
1	Unit 1
2	Unit 2

<u>Safety Class</u> — The ASME Class abbreviation.

1	Class 1
2	Class 2
3	Class 3
NC	Non-Code, Safety Related
NS	Non-Safety Related

3.2 Valve Plan Table Description (Cont'd)

P&ID	The Piping and Instrumentation Drawing (P&ID) number on which the valve appears. If the valve appears on multiple P&IDs, the primary P&ID will be listed.
P&ID Coor.	The coordinate location on the P&ID where the valve appears.
Category	The code category (or categories) as defined in paragraph 1.4 of OM-10.

A	Seat Leakage Limited.
B	Seat Leakage Not Required.
C	Self-Actuating Valves.
D	Single Use Valves.

Size	The nominal pipe size of the valve, in inches.
Valve Type	The valve body style abbreviation.

BAL	Ball Valve
BTF	Butterfly Valve
CK	Check Valve
DAM	Damper
DIA	Diaphragm Valve
GA	Gate Valve
GL	Globe Valve
PLG	Plug Valve
PLT	Pilot Valve
PPT	Poppet Valve
RPD	Rupture Disk
RV	Relief Valve
SCK	Stop Check Valve
SHR	Shear Valve/SQUIB Valve
3W	3-Way Valve
4W	4-Way Valve
XFC	Excess Flow Check Valve

3.2 Valve Plan Table Description (Cont'd)

Act. Type — The actuator type abbreviation.

AO	Air Operator
DF	Dual Function (Self Actuated and Power Operated)
EXP	Explosive Actuator
HO	Hydraulic Operator
M	Manual
MO	Motor Operator
SA	Self-Actuating
SAP	Self-Actuated Pilot
SO	Solenoid Operator

Normal Position — The normal position abbreviation. The valve's position during normal power operation. If the system does not operate during power operation, then the normal position is the position of the valve when the system is not operating.

C	Closed
CKL	Closed / Hand Switch Key Locked in Position
LC	Locked Closed
D	De-energized (3-way and 4-way valves)
E	Energized (3-way and 4-way valves)
O	Open
OKL	Open / Hand Switch Key Locked in Position
LO	Locked Open
SYS	System Condition Dependent

3.2 Valve Plan Table Description (Cont'd)

Safety Position — The safety function position(s). For valves that perform safety functions in the open and closed positions more than one safety function position may be specified.

C	Closed
D	De-energized (3-way and 4-way valves)
E	Energized (3-way and 4-way valves)
D/E	De-energized or Energized
O	Open
O/C	Open or Closed

Test Type — The test type abbreviation.

LT	Leakage Rate Test[1]
SC	Exercise Closed
SD	De-energize
SE	Energize
SO	Exercise Open
RT	Relief Valve Test
CC	Exercised Closed – Check Valve[2]
CO	Exercise Open – Check Valve[2]
CP	Partial Exercise Open[2]
DT	Rupture Disk / Explosive Valves
FC	Fail Safe Test Closed
FO	Fail Safe Test Open
PI	Position Indication Test
TMP	Temperature Monitoring (condition monitoring)
OP	Operating Activities (condition monitoring)

[1] If more than one type of leak test is performed on a valve, then three letter designations may be used to differentiate between the tests. For example, it is appropriate to designate Appendix J leak tests as "LTJ", low pressure leak tests as "LTL", and high pressure leak tests as "LTH".

[2] Three letter designations should be used for check valve condition monitoring tests to differentiate between the various methods of exercising check valves. The letter following "CC", "CO", or "CP" should be "A" for acoustics, "D" for disassembly and inspection, "F" for flow indication, "M" for magnetics, "R" for radiography, "U" for ultrasonics, or "X" for manual exercise.

3.2 Valve Plan Table Description (Cont'd)

Test Freq. — The test frequency abbreviation.

AJ	Appendix J
CM	Condition Monitoring[1]
CS	Cold Shutdown
M3	Quarterly
OP	Operating Activities[2]
RR	Refuel Outage
S2	Explosive Charge Sample
SA	Check Valve Disassembly Sample[3]
Y*X*	Every *X* years, where *X* is the number of years

Relief Request — A relief request number is listed when a specific code requirement is determined to be impracticable.

Deferred Just. — Deferred Test Justification. This section refers to Cold Shutdown Justifications and Refuel Outage Justifications.

A Cold Shutdown Justification number is listed when the testing frequency coincides with Cold Shutdowns instead of being performed quarterly. Cold Shutdown Justification numbers for valves are prefixed with "CS".

A Refuel Outage Justification number is listed when the testing frequency coincides with Refuel Outages instead of being performed quarterly or during Cold Shutdowns. Refuel Outage Justification numbers for valves are prefixed with "RJ".

Tech. Pos. — A technical position number is listed when the requirements of the code are not easily interpreted and clarifying information is needed. The technical position is used to document how Code requirements are being implemented at the station.

[1] Frequency is as indicated in respective Condition Monitoring Plan for that valve group.
[2] Satisfied i.a.w. Exelon IST Program Technical Position, TP-EXE-01-01, "Non-Safety Check Valve Exercise Testing By Normal Operations."
[3] Used for check valve disassembly/inspection per ISTC requirements or to indicate Condition Monitoring frequency (refer to respective Condition Monitoring Plan for that valve group).

ATTACHMENT 1

PUMP RELIEF REQUEST INDEX

Designator	Description	Approval Date
RP-01	Water Leg Pump Flow Test	Rev. 3: 7/6/98
RP-02	Deleted	
RP-03	Deleted	

ATTACHMENT 2

PUMP RELIEF REQUESTS

Pump Relief Request - RP-01
(Rev. 03)
(Page 1 of 2)

Affected Components

EPN	Class	Description
1(2)E22-C003	2	HPCS Water Leg Pump
1(2)E21-C002	2	LPCS Water Leg Pump
1(2)E12-C003	2	RHR Water Leg Pump
1(2)E51-C003	2	RCIC Water Leg Pump

Test Requirement

OM-6 Section 5.2 Test Requirement: Flow Measurement

Basis for Relief

Instrumentation is not installed for measuring flow rates. Pump flow varies with system operation and system leakage; therefore, establishing flow rates for testing purposes is not practical. The primary purpose of these pumps is to maintain the HPCS, LPCS, RHR and RCIC pump discharge lines filled to limit the potential for water hammer upon initiation. System modification to provide test measuring locations places undue burden on the utility without demonstrating any increase in the level of plant safety. These pumps are in continuous operation. Pump performance is continuously monitored by a low pressure alarm on each HPCS, LPCS, RHR and RCIC pump discharge header.

LaSalle Station monitors the subject pumps for degradation by measuring and recording pump inlet pressure, discharge pressure, differential pressure, and vibration with the differential pressure and vibration data trended. These measurements are taken quarterly and provide satisfactory indication of operational readiness as well as the ability to detect potential degradation. In addition, the main ECCS pumps discharge headers each have a low pressure alarm which continuously monitors the operability of the respective water leg pump. Station Technical Specifications also verify operability of the water leg pumps by verifying flow through a high point vent on a monthly basis.

Alternative Test

Vibration measurement will be obtained under normal operating conditions and evaluated in accordance with OM-6. LaSalle verifies operability of these pumps by pressure maintenance of the HPCS, LPCS, RHR and RCIC pump discharge lines within allowable pressure limits. In addition, performance monitoring of the pumps' mechanical and hydraulic performance is trended.

Pump Relief Request - RP-01
(Rev. 03)
(Page 2 of 2)

Approval Status

Revision 3 of this request was made to include the RCIC Water Leg Pump. Refer to Safety Evaluation and Letter dated July 6, 1998. Revision 2 was approved for the HPCS, LPCS and RHR Water Leg Pumps only. Refer to Safety Evaluation & Letter dated December 6, 1996.

Pump Relief Request - RP-02

Relief Request Deleted.

This pump relief request is no longer used. RHR pump suction pressure instrumentation meets the requirements of OM-6.

Pump Relief Request - RP-03

Relief Request Deleted.

This pump relief request is no longer used. HPCS pump suction pressure instrumentation meets the requirements of OM-6.

ATTACHMENT 3

VALVE RELIEF REQUEST INDEX

Designator	Description	Approval Date
RV-01	Deleted	
RV-02	Deleted	
RV-03	Deleted	
RV-04	Deleted	
RV-05	Suppression Chamber-Drywell Vacuum Breakers	Rev. 1 Approved July 6, 1998
RV-05	Suppression Chamber-Drywell Vacuum Breakers	Rev. 2 Pending
RV-06	Deleted	
RV-07	Deleted	
RV-08	Deleted	
RV-09	Deleted	
RV-10	Deleted	
RV-11	Main Steam Line Safety Relief Valves	Rev. 0 Pending

ATTACHMENT 4

VALVE RELIEF REQUESTS

Valve Relief Request - RV-01
(Rev. 01)

Relief Request Deleted.

Relief pertaining to disassembly and inspection of various check valves no longer applies.

Valve Relief Request - RV-02
(Rev. 01)

Relief Request Deleted.

Control Rod Drive system valves are tested in accordance with NRC Staff Position 7 as stated in USNRC Generic Letter 89-04 and Appendix A of USNRC NUREG-1482.

Valve Relief Request - RV-03
(Rev. 01)

Relief Request Deleted.

Control Rod Drive system valves are tested in accordance with NRC Staff Position 7 as stated in USNRC Generic Letter 89-04 and Appendix A of USNRC NUREG-1482.

Valve Relief Request - RV-04
(Rev. 01)

Relief Request Deleted.

1(2)HG017A and 1(2)HG017B will be disassembled and inspected in accordance with Condition Monitoring Plan CM-04 (OMa-1996, Appendix II).

Valve Relief Request - RV-05
(Rev. 1)
(Page 1 of 3)

Affected Components

EPN	Class	Cat.	Description
1(2)PC001A	2	AC	Suppression Chamber - Drywell Vacuum Breaker
1(2)PC001B	2	AC	Suppression Chamber - Drywell Vacuum Breaker
1(2)PC001C	2	AC	Suppression Chamber - Drywell Vacuum Breaker
1(2)PC001D	2	AC	Suppression Chamber - Drywell Vacuum Breaker

Test Requirement

OM-1, Section 1.3.4.3(a); Test Requirement (Containment Relief Valves): Within every 6 month period operability tests shall be performed unless historical data indicates a requirement for more frequent testing.

Basis for Relief

The primary containment ensures that the release of radioactive materials will be restricted to those paths and associated leak rates assumed in the accident analyses. This restriction in conjunction with the leakage limitation, will limit the site boundary radiation dose to within the limits of 10 CFR Part 100 during accident conditions. The primary containment walls have a steel liner, which acts as a low leakage barrier.

The primary containment structure consists of a drywell area and a suppression pool area. The primary function of the drywell is to contain the effects of a design-basis recirculation line break and direct the steam released from a pipe break into the suppression chamber pool. The drywell contains a floor that serves as a pressure barrier between the drywell and suppression chamber and as a support structure for the reactor pedestal.

The primary function of the suppression chamber is to provide a reservoir of water capable of condensing the steam flow from the drywell and collecting the non-condensable gases in the suppression chamber air space.

Vacuum relief valves are provided between the drywell and suppression chamber to prevent exceeding the drywell floor negative design pressure and backflooding of the suppression pool water into the drywell. The vacuum relief valves are designed to equalize the pressure between the drywell and wetwell air space regions so that the reverse pressure differential across the drywell floor will not exceed the design value of five pounds per square inch. This is needed to maintain the structural integrity of the primary containment under conditions of large differential pressures. Therefore, the subject relief valves are considered containment relief valves and are subject to the testing requirements outlined in sections 1.3.4.3(a) and 3.3.2.3 of OM-1 for Class 2 and 3 containment vacuum relief valves.

Valve Relief Request - RV-05
(Rev. 1)
(Page 2 of 3)

The vacuum relief valves (four assemblies) are outside the primary containment and form an extension of the primary containment boundary. The vacuum relief valves are mounted in special piping which connects the drywell and suppression chamber. In each vacuum breaker assembly, there are two local manual butterfly valves, one on each side of the vacuum breaker, which are provided as system isolation valves should failure of the vacuum breaker occur and as isolation valves for testing. The vacuum relief valves are instrumented with redundant position indication in the main control room. The valves are provided with the capability for local manual testing.

In accordance with the requirements of LCNS Technical Specification Surveillance Requirement 4.6.4.1, each vacuum breaker is verified to be closed at least once per 7 days, full-stroke exercised at least once per 31 days and within 12 hours after discharge of steam to the suppression chamber from the safety-relief valves. Additionally, both of the position indicators for each valve are verified operable at least once per 31 days. In addition to the above, the force required to open each vacuum breaker, from the closed position is verified to be less than or equal to 0.5 psid and the leakage rate of each vacuum breaker valve is verified at least once per 18 months.

The 6 month operability tests identified in section 1.3.4.3(a) of OM-1 refer to the open and close capability (exercise) tests, set pressure tests, and performance tests of any pressure and position sensing accessories outlined in section 3.3.2.3 of OM-1 for Class 2 and 3 vacuum relief valves. Section 1.3.4.3(b) of OM-1 specifies that valve leakage tests be performed every 2 years unless historical data indicates a requirement for more frequent testing. Additionally, since these valves are check valves, section 4.3.2.1 of OM-10 requires that the subject valves be exercised every 3 months.

A comparison of the LCNS Technical Specification surveillance requirements, OM-1 and OM-10 test requirements for the subject valves indicates that the testing frequencies identified in the Technical Specification are more limiting in all instances except for the performance of the valve setpoint tests.

There are two primary methods to verify opening setpoints for these types of vacuum breaker valves. Manual exercising while measuring breakaway torque or a valve setpoint test using air. As stated above the subject valves are provided with the capability for local manual testing. However, this method was determined to be impractical because of the inconsistencies in the test data identified during preoperational testing. This test method was identified as an open item (373/81-28-07) by the NRC. Resolution of this issue included a commitment to perform this testing using pressurized air.

Valve Relief Request - RV-05
(Rev. 1)
(Page 3 of 3)

It is impractical to verify vacuum breaker setpoints using air every 6 months during plant operation. Verifying vacuum breaker setpoints requires the closure of the two manually operated butterfly valves upstream and downstream of the subject valves, the hook up of air supply hoses, the pressurization of a large volume of piping and blowdown of air inventory into the nitrogen inerted drywell. Since the two manually operated butterfly valves must be closed to the perform this test, a Technical Specification Action Statement must be entered for the sole purpose of performing this test

A review of the maintenance history of the subject valves tested at the 18 month Technical Specification frequency indicates that there have not been frequent failures of these valves to relieve pressure as designed. Additionally, the 18 month Technical Specification setpoint test frequency is consistent with the two year test frequency outlined in section I 1.3.7 of mandatory Appendix I of the 1995 Edition of the ASME OM Code.

Alternative Test

LaSalle will setpoint test these valves in accordance with the 18 month setpoint test frequency identified in section 4.6.4.1 of the LCNS Technical Specifications.

Valve Relief Request - RV-05
(Rev. 2)
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	Class 2
Reference:	*ASME/ANSI Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1*
Examination Category:	A and C
Description:	The purpose of the relief request is to set the frequency requirement of the valve setpoint tests to that specified in the LaSalle County Station Technical Specifications.

Component Numbers:	1(2)PC001A	Suppression Chamber- Drywell Vacuum Breaker
	1(2)PC001B	Suppression Chamber- Drywell Vacuum Breaker
	1(2)PC001C	Suppression Chamber- Drywell Vacuum Breaker
	1(2)PC001D	Suppression Chamber- Drywell Vacuum Breaker

Code Requirement

ASME/ANSI Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1 (OM-1), Section 1.3.4.3(a), "Test Requirement (Containment Relief Valves)," requires that within every 6 month period, operability tests including valve setpoint tests, shall be performed unless historical data indicates the need for more frequent testing.

Basis for Relief

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested from the provision of OM-1, Section 1.3.4.3(a), that requires valve setpoint tests to be conducted every 6 months. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The primary containment ensures that the release of radioactive materials will be restricted to those paths and associated leak rates assumed in the accident analyses. This restriction in conjunction with the leakage limitation, will limit the site boundary radiation dose to a small fraction of the limits of 10CFR100, "Reactor Site Criteria," during accident conditions. The primary containment walls have a steel liner, which acts as a low leakage barrier.

Valve Relief Request - RV-05
(Rev. 2)
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The primary containment structure consists of a drywell and a suppression chamber. The primary function of the drywell is to contain the effects of a design-basis recirculation line break and direct the steam released from a pipe break into the water pool of the suppression chamber. The drywell contains a floor that serves as a pressure barrier between the drywell and suppression chamber, and as a support structure for the reactor pedestal. The primary function of the suppression chamber is to provide a reservoir of water capable of condensing the steam flow from the drywell and collecting the non-condensable gases in the suppression chamber air space.

Vacuum relief valves are provided between the drywell and suppression chamber to prevent exceeding the drywell floor negative design pressure and backflooding of the suppression chamber pool water into the drywell. The vacuum relief valves are designed to equalize the pressure between the drywell and suppression chamber air space so that the reverse pressure differential across the drywell floor will not exceed the design value of five pounds per square inch. This is needed to maintain the structural integrity of the primary containment under conditions of large differential pressures. Therefore, the subject relief valves are considered containment relief valves and are subject to the testing requirements outlined in OM-1, Section 1.3.4.3(a), for Class 2 and 3 containment vacuum relief valves.

The vacuum relief valves (four assemblies) are outside the primary containment and form an extension of the primary containment boundary. The vacuum relief valves are mounted in special piping which connects the drywell and suppression chamber. In each vacuum breaker assembly, there are two manually operated butterfly valves, one on each side of the vacuum breaker, which are provided as system isolation valves should failure of the vacuum breaker occur and as isolation valves for testing. The vacuum relief valves are instrumented with redundant position indication in the main control room. The valves are provided with the capability for local manual testing.

In accordance with the requirements of LaSalle County Station, Unit 1 and Unit 2, Technical Specifications (TS) Surveillance Requirement (SR) 3.6.1.6.1 and SR 3.6.1.6.2, each vacuum breaker is verified to be closed at least once per 14 days, and full-stroke exercised at least once per 92 days and within 12 hours after discharge of steam to the suppression chamber from the safety-relief valves. Additionally, LaSalle County Station Technical Requirements Manual (TRM), Section 3.6.b.1 requires both of the position indicators for each valve to be verified operable at least once per 92 days. In addition to the above, TS SR 3.6.1.6.3 requires measurement of the force to open each vacuum breaker from the closed position. Technical Specification SR 3.6.1.1.3 also measures vacuum breaker bypass leakage at least once per 24 months.

Valve Relief Request - RV-05
(Rev. 2)
(Page 3 of 3)

The 6 month operability tests identified in OM-1, Section 1.3.4.3(a), refer to the open and close capability (i.e., exercise) tests, and valve setpoint tests. A comparison of the LaSalle County Station TS SRs and OM-1 test requirements for the subject valves indicates that the testing frequencies identified in the TS SRs are more limiting except for the performance of the valve setpoint tests.

There are two primary methods to conduct a valve setpoint test for this type of vacuum breaker, manual exercising while measuring breakaway torque or a valve setpoint test using pressurized air. As stated above, the subject valves are provided with the capability for local manual testing. However, this manual testing method was determined to be impractical because of the inconsistencies in the test data identified during preoperational testing. The NRC identified this test method as an open item (373/81-28-07). Resolution of this issue included a commitment to perform this testing using pressurized air.

Previously, LaSalle County Station obtained relief to perform the testing every 18 months as prescribed by Technical Specifications (Relief RV-05, Revision 1, July 1998). The bases for the previous relief was the determination that it was impractical to verify vacuum breaker valve setpoint using pressurized air every 6 months during plant operation. Verifying vacuum breaker setpoints requires the closure of the two manually operated butterfly valves upstream and downstream of the subject valves, the hook up of air supply hoses, pressurization of a large volume of piping, and blowdown of air inventory into the nitrogen inerted drywell. Since the two manually operated butterfly valves must be closed to perform this test, a TS Action Statement must be entered for the sole purpose of performing this test.

A review of the maintenance history of the subject valves tested at the previous 18 month TS frequency indicates that 29 tests were conducted with only one failure. The failure was related to the valve position indicator and did not prevent the valve from performing its safety function. Additionally, the current 24 month Technical Specification setpoint test frequency is consistent with the two year test frequency outlined in Section I 1.3.7 of mandatory Appendix I of the 1995 Edition of the ASME OM Code.

Alternative Test

The requested change will allow LaSalle to conduct valve setpoint tests on these valves in accordance with the 24 month setpoint test frequency identified in LaSalle County Station TS SR 3.6.1.6.3.

Applicable Time Period

This alternative is requested for the remaining duration of the second and third inspection periods for LaSalle County Station, Unit 1 and Unit 2.

Valve Relief Request - RV-06
(Rev. 01)

Relief Request Deleted.

Section 6.0 of the NRC letter dated December 8, 1995, "Safety Evaluation of Relief Requests for the Second Interval Pump and Valve Inservice Testing Program - LaSalle County Station, Units 1 and 2" identified that the valves in question (DG Starting Air Relay Valves, Control Valves and Check Valves) are not identified as ASME Code Class 1, 2, or 3; therefore, they are not subject to IST in accordance with 10 CFR 50.55a. No relief request from IST requirements is required.

Valve Relief Request - RV-07
(Rev. 01)

Relief Request Deleted.

Section 9.0 of the NRC letter dated December 8, 1995, "Safety Evaluation of Relief Requests for the Second Interval Pump and Valve Inservice Testing Program - LaSalle County Station, Units 1 and 2" identified that no relief request from (the) IST requirements for the RCIC turbine exhaust check valves and the barometric condenser vacuum pump discharge check valves is required since OM-10, paragraph 4.3.2 (ISTC 4.5.2(c)), specifies full-stroke exercising at each refueling outage if exercising is impractical quarterly during power operation and during cold shutdowns. Refer to refueling outage justification RJ-31.

Valve Relief Request - RV-08
(Rev. 01)

Relief Request Deleted.

Section 10.0 of the NRC letter dated December 8, 1995, "Safety Evaluation of Relief Requests for the Second Interval Pump and Valve Inservice Testing Program - LaSalle County Station, Units 1 and 2" identified that for the shutdown cooling testable check valves, no relief request from IST requirements is required since OM-10, Paragraph 4.3.2 (ISTC 4.5.2(c)) specifies full-stroke exercising at each refueling outage if testing is impractical quarterly during power operation and during cold shutdowns. Refer to RJ-19.

Valve Relief Request - RV-09
(Rev. 01)

Relief Request Deleted.

Section 11.0 of the NRC letter dated December 8, 1995, "Safety Evaluation of Relief Requests for the Second Interval Pump and Valve Inservice Testing Program - LaSalle County Station, Units 1 and 2" identified that for the HPCS pump minimum flow bypass line isolation valves and the RCIC minimum flow isolation valves, no relief request from IST requirements is required since OM-10, Paragraph 4.2.1 specifies full-stroke exercising at each refueling outage if testing is impractical quarterly during power operation and during cold shutdowns.

Valve Relief Request - RV-10
(Rev. 01)

Relief Request Deleted.

Relief was granted on December 14, 1998 for a one-time extension of certain ASME Code IST requirements pertaining to the frequency of testing of several main seam safety relief valves for LaSalle Unit 1. This one-time extension has expired, and this relief request is deleted from the IST Program Plan.

Valve Relief Request - RV-11
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COMPONENT IDENTIFICATION

Code Class: Class 1

Reference: American Society of Mechanical Engineers (ASME) / American National Standards Institute (ANSI), Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1 (OM-1)

Examination Category: C

Description: Main steam pressure relief valves with auxiliary actuating devices that are maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled shall be remotely actuated to verify open and close capability of the valve prior to resumption of electric power generation.

Affected Components:

Equipment Plant Number	Description
1B21-F013A*	Main Steam Line Safety Relief Valve
1B21-F013B*	Main Steam Line Safety Relief Valve
1B21-F013G*	Main Steam Line Safety Relief Valve
1B21-F013J*	Main Steam Line Safety Relief Valve
1B21-F013N*	Main Steam Line Safety Relief Valve
1(2)B21-F013C	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013D	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013E	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013F	Main Steam Line Safety Relief Valve
1(2)B21-F013G	Main Steam Line Safety Relief Valve
1(2)B21-F013H	Main Steam Line Safety Relief Valve
1(2)B21-F013J	Main Steam Line Safety Relief Valve
1(2)B21-F013K	Main Steam Line Safety Relief Valve
1(2)B21-F013L	Main Steam Line Safety Relief Valve
1(2)B21-F013M	Main Steam Line Safety Relief Valve
1(2)B21-F013N	Main Steam Line Safety Relief Valve
1(2)B21-F013P	Main Steam Line Safety Relief Valve
1(2)B21-F013R	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013S	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013U	Main Steam Line Safety Relief Valve w/ADS Function
1(2)B21-F013V	Main Steam Line Safety Relief Valve w/ADS Function

Valve Relief Request - RV-11
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* Unit 2 A/B/G/J/N valves were permanently removed by Design Change Package 9600382. Unit 1 A/B/G/J/N valves are pending permanent removal during the 2001 refueling outage by Design Change Package 9600007.

CODE REQUIREMENTS

OM-1, Section 3.4.1.1(d) requires that each valve that has been maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled shall be remotely actuated at reduced system pressure to verify open and close capability of the valve prior to resumption of electric power generation for main steam pressure relief valves with auxiliary actuating devices.

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Relief is requested from the OM-1, Section 3.4.1.1(d) requirement that after installation, the remote actuation of main steam pressure relief valves with auxiliary actuating devices shall include the opening and closing of the valve.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a(a)(3), relief is requested from the requirement of OM-1, Section 3.4.1.1(d). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

Currently, approximately 50% of the Safety/Relief Valves (S/RVs) and Automatic Depressurization System (ADS) designated S/RVs are removed from the plant and setpoint tested during each refueling outage. The setpoint testing program includes the manual actuation of the ADS valves by the bench-test valve control system. The valves, after re-installation in the plant, are actuated a second time by the plant installed remote manual actuation equipment.

Experience at LaSalle County Station, Unit 1 and Unit 2, and the nuclear industry has indicated that repeated manual actuation of the S/RVs and ADS valves can lead to valve through seat leakage during plant operation. In the current operating cycles for Unit 1 and Unit 2, approximately 18% (i.e., 5 of 28) of the valves that experienced one open cycling developed leakage, whereas, approximately 57% (i.e., 12 of 21) of the valves that experienced more than one open cycling developed through seat leakage. The S/RV and ADS valve leakage is directed to the pool of water in the primary containment suppression chamber causing a need to increase cooling to the pool of water or a plant shutdown to fix the leaking valve.

Valve Relief Request - RV-11
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The relief request will allow the testing of the S/RV and ADS valves to be performed in two separate steps. The manual actuation of the valves by the bench-test valve control system of the setpoint testing program, will verify the opening and closing of the valve with the actuator coupled to the valve stem. The plant installed manual actuation equipment will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator. This will allow the testing of the plant installed manual actuation electrical circuitry, manual actuation solenoid and air control valve, and the actuator without causing the valve to open. Therefore, all the components of the S/RV and ADS will continue to be tested.

This uncoupled actuator test will also be performed following any maintenance activity that could affect the relief mode of the associated S/RV or ADS valves.

The NRC in NUREG-1482, " Guidelines for Inservice Testing at Nuclear Power Plants, and NUREG-0626, " Generic Evaluation of Feedwater Transients and Small Break Loss-of-Coolant Accidents in GE-Designed Operating Plants and Near-Term Operating License Applications," also recommended reducing the number of challenges to the ADS valves.

PROPOSED ALTERNATIVE PROVISIONS

The remote actuation of the S/RV and ADS valves shall be performed in two separate steps. The manual actuation of the valves by the bench-test valve control system of the setpoint testing program, will verify the opening and closing of the valve with the actuator coupled to the valve stem. The plant installed manual actuation equipment will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator.

APPLICABLE TIME PERIODS

Relief is requested for the remainder of the second and third 10 year interval.

ATTACHMENT 5

COLD SHUTDOWN JUSTIFICATION INDEX

Designator	Description	Revision
CS-01	RBCCW Isolation Valves	01
CS-02	LPCS Injection Valve	01
CS-03	Recirc Flow Control Valves	01
CS-04	Feedwater Isolation Valves	01
CS-05	Reactor Water Cleanup Valves	02
CS-06	Deleted	N/A
CS-07	Deleted	N/A
CS-08	Inboard and Outboard MSIV's	02
CS-09	HPCS Inject Valves	02
CS-10	Deleted	N/A
CS-11	Full Flow Test Valves	02
CS-12	RCIC Outboard Injection Stop Valve	01
CS-13	RHR Shutdown Cooling Isolation Valves	02
CS-14	RHR to Head Spray Isolation Valve	01
CS-15	RHR/LPCI Injection Isolation Valves	01
CS-16	RHR Shutdown Cooling Discharge Isolation Valve	01
CS-17	RHR Shutdown Cooling Testable Check Bypass Valve	01
CS-18	Deleted	N/A
CS-19	Drywell Instrument Valves	0
CS-20	Chilled Supply and Return Isolation Valves	01
CS-21	Deleted	N/A
CS-22	Reactor Recirculation Pump Suction and Discharge Valves	01
CS-23	Deleted	N/A
CS-24	IN Regulated Header Drywell Isolation Valves	01
CS-25	IN TIP Indexer Purge Valves	01
CS-26	ADS N2 Supply to DW Isolation Valves	01
CS-27	HCU Accumulator Charging Water Check Valves	0

ATTACHMENT 6

COLD SHUTDOWN JUSTIFICATIONS

Cold Shutdown Justification - CS-01
(Rev. 01)

Description

It is not practicable to full or part-stroke exercise closed the Reactor Building Closed Cooling Water (RBCCW) isolation valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1

Affected Components

EPN	Class	Cat.	Description
1(2)WR029	2	A	RBCCW Supply Outboard Cont Iso Vlv
1(2)WR040	2	A	RBCCW Return Outboard Cont Iso Vlv
1(2)WR179	2	A	RBCCW Supply Inboard Cont Iso Vlv
1(2)WR180	2	A	RBCCW Return Inboard Cont Iso Vlv

Function

The subject valves are the RBCCW system drywell supply and return containment isolation valves. These valves are normally open during plant operation to allow cooling water flow to the reactor recirculation pumps, process sampling coolers, drywell penetration coolers, etc. These valves have a safety function to close to isolate primary containment in the event of an accident.

Justification

It is not practical to full or part-stroke exercise these valves on a quarterly (nominal 92 days) basis during plant operation. The subject valves are not capable of performing a part-stroke exercise unless manually operated. The RBCCW system is not a safety related system; however, isolating any of the subject valves during plant operation would isolate the normal cooling water supply to several components in the drywell such as the reactor recirculation pumps, process sampling coolers, and drywell penetration coolers.

Reactor recirculation pump operation requires a continuous cooling water flow from the reactor building closed cooling water system. Exercising these valves during operation interrupts this flow from the reactor building closed cooling water system. This testing could result in physical damage to the pumps and could possibly lead to a plant transient.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdown per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-02
(Rev. 01)

Description

It is not practicable to full or part-stroke exercise the following RHR injection valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E21-F005	1	A	LPCS Injection Outboard Stop

Function

The subject valve is normally closed and has a safety function to automatically open to allow low pressure core spray system to inject water into the reactor vessel when required to protect the core in the event of a large break in the nuclear system and when the High Pressure Core Spray system is unable to maintain reactor vessel water level. This valve is a throttling type valve, which can be used to control LPCS injection flow.

This valve also has a safety closure and leakage limiting function as a containment isolation valve and as a reactor pressure boundary pressure isolation valve.

Justification

It is impractical to full or part-stroke exercise this valve open or closed on a quarterly (nominal 92 days) basis during plant operation. This motor-operated valve is normally closed and can only open if a LPCS initiation signal is present (low reactor water level or high drywell pressure) and reactor pressure is < 500 psig. The reactor pressure interlock prevents the inadvertent opening of this valve during power operation to protect the lower design pressure rated (550 psig) LPCS system piping located outside of the reactor containment from overpressurization.

Alternative Frequency

These valves will be full-stroke exercised open and closed during cold shutdown per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-03
(Rev. 01)
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Description

It is not practicable to full or part-stroke exercise closed the Recirculation Flow Control Valves Hydraulic Line Isolation valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)B33-F338A/B	2	B	RR FCV Hydraulic Line Inboard Isolation Valve
1(2)B33-F340A/B	2	B	RR FCV Hydraulic Line Inboard Isolation Valve
1(2)B33-F342A/B	2	B	RR FCV Hydraulic Line Inboard Isolation Valve
1(2)B33-F344A/B	2	B	RR FCV Hydraulic Line Inboard Isolation Valve
1(2)B33-F339A/B	2	B	RR FCV Hydraulic Line Outboard Isolation Valve
1(2)B33-F341A/B	2	B	RR FCV Hydraulic Line Outboard Isolation Valve
1(2)B33-F343A/B	2	B	RR FCV Hydraulic Line Outboard Isolation Valve
1(2)B33-F345A/B	2	B	RR FCV Hydraulic Line Outboard Isolation Valve

Function

These valves are normally open during plant operation to allow hydraulic fluid from the flow control valve hydraulic power unit to position the reactor recirculation line flow control valve in response to electrical signals from the recirculation flow control system.

These valves also have an automatic closure function (Group 2) to isolate primary containment to mitigate the consequences of an accident.

Justification

It is impractical to full or part-stroke exercise this valve closed on a quarterly (nominal 92 days) basis during plant operation. The reactor recirculation system provides forced circulation of water through the reactor core. The recirculation system in conjunction with the recirculation flow control system, provides a means of controlling reactor power over a limited range by adjusting the flow of coolant through the core. Between 65 - 100% power, with the correct control rod pattern, a change in core flow will also result in a change in reactor power.

Cold Shutdown Justification - CS-03
(Rev. 01)
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Each reactor recirculation flow control valve is controlled by a remote hydraulic power unit (HPU) located outside primary containment. The HPU's supply the high pressure fluid used to position the flow control valves. The individual hydraulic lines penetrate the primary containment and are each equipped with both an inboard and outboard isolation valve. Full-stroke closure testing of the subject valves to the closed position will cut off the hydraulic oil required to provide remote operating capability the FCV. This could result in a loss of the ability of plant operators to appropriately respond to changing plant conditions which require the regulation of core flow and reactor power.

Alternative Frequency

These valves will be full-stroke exercised open and closed during cold shutdown per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-04
(Rev. 01)

Description

It is not practicable to full or part-stroke exercise the Feedwater Isolation valves to the closed position nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F065A/B	2	A	Reactor Feedwater Isolation Valve

Function

These valves have a function to be open during normal plant operation to provide a path for feedwater flow to the reactor vessel to maintain the desired water level. This is not a safety function.

These valves do have a safety function to close and limit leakage from the primary containment in the event of an accident.

Justification

It is impractical to full or part-stroke exercise these valves to the closed position on a quarterly (nominal 92 days) basis during plant operation. The feedwater system serves as the main source of makeup water to the reactor vessel during plant operation. Closure of either of the subject valves would induce a plant transient due to reduced feedwater flow to the reactor vessel, unnecessarily challenge the plant operators and could subsequently cause a plant scram. These valves do not have a part-stroke feature.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per section 4.2.1.2.c and 4.2.1.2.f of OM-10.

Cold Shutdown Justification - CS-05
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full or part-stroke exercise the RWCU Isolation valves to the closed position nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)G33-F001	1	A	RWCU Inboard Suction Isolation Valve
1(2)G33-F004	1	A	RWCU Outboard Suction Isolation Valve
1(2)G33-F040	1	A	RWCU Discharge to Feedwater Isolation Valve

Function

These valves have a function to be open during normal plant operation to provide a path for reactor coolant to flow to and from the reactor water cleanup system to maintain high water purity. This is not a safety function.

These valves do have a safety function to close and limit leakage from the primary containment in the event of an accident. 1(2)G33-F001 and 1(2)G33-F004 automatically isolate as a result of a Group 5 isolation signal. 1(2)G33-F004 also automatically isolates as a result of a standby liquid control system actuation. 1(2)G33-F040 is remote manually operated to provide long term leakage control of reactor feedwater containment penetrations M-5 and M-6.

Justification

It is impractical to full or part-stroke exercise these valves to the closed position on a quarterly (nominal 92 days) basis during plant operation. As stated in section 5.4.8.2 of the LCNS FSAR, the RWCU system continuously purifies reactor water. Closure of any of the subject valves would require that the entire RWCU system be taken out of service.

Additionally, closure of either 1(2)G33-F001 or 1(2)G33-F004 during normal system operation will also automatically shutdown all of the cleanup recirculation pumps. This will cause an unnecessary thermal transient on the clean recirculation pumps and other system components possibly leading to their premature failure.

Cold Shutdown Justification - CS-05
(Rev. 02)
(Page 2 of 2)

System operation is generally maintained during power operation to maintain reactor water chemistry stable.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdown per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-06
(Rev. 01)

This Cold Shutdown Justification has been deleted.

The test frequency for 1(2)VQ026, 1(2)VQ027, 1(2)VQ029, 1(2)VQ030, 1(2)VQ031, 1(2)VQ034, 1(2)VQ036, 1(2)VQ040, 1(2)VQ042 and 1(2)VQ043 was changed from cold shutdown to quarterly.

Cold Shutdown Justification - CS-07
(Rev. 01)

This Cold Shutdown Justification has been deleted.

The Main Steam Isolation Valve Leakage Control System has been disconnected from the Main Steam System, has been downgraded to non-safety class (i.e., Class D), and is abandoned in place. The valves previously identified on this cold shutdown justification have been deleted from the IST program.

Cold Shutdown Justification - CS-08
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full stroke exercise the Main Steam Isolation Valves to the closed position nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F022A	1	A	Main Steam Line A Inboard Isolation Valve (MSIV)
1(2)B21-F022B	1	A	Main Steam Line B Inboard Isolation Valve (MSIV)
1(2)B21-F022C	1	A	Main Steam Line C Inboard Isolation Valve (MSIV)
1(2)B21-F022D	1	A	Main Steam Line D Inboard Isolation Valve (MSIV)
1(2)B21-F028A	1	A	Main Steam Line A Outbd. Isolation Valve (MSIV)
1(2)B21-F028B	1	A	Main Steam Line B Outbd. Isolation Valve (MSIV)
1(2)B21-F028C	1	A	Main Steam Line C Outbd. Isolation Valve (MSIV)
1(2)B21-F028D	1	A	Main Steam Line D Outbd. Isolation Valve (MSIV)

Function

The subject valves are normally open and must be open to provide a steam flow path from the reactor, through the containment to the turbine and auxiliary loads to support plant operation. This is not a safety related function.

The subject valves have a safety function to close on a Group 1 primary containment isolation signal (PCIS).

Justification

It is impractical to full -stroke exercise or fail-safe test these valves to the closed position on a quarterly (nominal 92 days) basis during plant operation. The MSIVs have the capability and are being part-stroke exercised on a quarterly basis in order to meet the MSIV scram functional test requirements identified in Technical Specification Surveillance Requirement 3.3.1.1 and Tech. Spec. Table 3.3.1.1-1 item #5.

Cold Shutdown Justification - CS-08
(Rev. 02)
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As identified in UFSAR section 5.4.5.4, the performance of a full-stroke exercise to the closed position of individual MSIVs can be performed during power operation if reactor power is reduced sufficiently to avoid a scram as a result of reactor overpressure or high flow through the stream line flow restrictors. NUREG-1482 "Guidelines for Inservice Testing at Nuclear Power Plants" identifies in section 2.4.5 that impractical conditions justifying test deferrals are those that could result in an unnecessary challenges to safety systems, place undue stress on components, cause unnecessary cycling of equipment, or unnecessarily reduce the life expectancy of the plant systems and components. Section 2.4.5 (Item #3) also identified that testing that could cause a plant trip or require a power reduction as an example of impractical conditions. The note at the end of section 4.2.4 of NUREG-1482 also identified that the revised standard technical specification bases for MSIV surveillance requirements states that "MSIVs should not be exercised at power, since even a part-stroke exercise increases the risk of a valve closure when the unit is generating power".

Alternative Frequency

These valves will be part-stroke exercised closed on a quarterly basis (nominally 92 days) and full-stroke exercise tested to the closed position and fail-safe tested during cold shutdowns per OM-10 sections 4.2.1.2(b) and 4.2.1.2(f).

Cold Shutdown Justification - CS-09
(Rev. 02)

Description

It is not practicable to full or part-stroke exercise the HPCS Injection Valve to the open or closed position nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E22-F004	1	A	HPCS Injection Line Isolation Valve

Function

This normally closed valve has a safety function to open to allow the high pressure core spray system (HPCS) to pass water to cool the reactor core sufficiently to prevent excessive fuel cladding temperature following a break in the nuclear system piping. This valve will automatically open if there is a HPCS initiation signal present (low level in the reactor vessel or high drywell pressure).

This valve also has a closure and leakage limiting function as a containment isolation valve and a reactor coolant pressure boundary pressure isolation valve. This valve will automatically close if reactor vessel increases above the high level setpoint (+55.5"). It can be manually reset when vessel level decreases below the vessel high level setpoint. It will automatically reset if reactor vessel level drops below the low level setpoint.

Justification

It is impractical to perform a full or part-stroke exercise of this valve to the open or closed position on a quarterly (nominal 92 days) basis during plant operation. This valve is located in the HPCS injection line. As identified in the Technical Requirements Manual, Appendix C, this valve is a reactor coolant pressure boundary isolation valve. One of the purposes of performing leakage testing of these valves is to reduce the probability of gross failure and consequent inter-system loss of coolant accident outside of the primary containment. If the subject valve was opened at rated pressure, the inboard testable check valve (1(2)E22-F005) is the only available pressure boundary valve to perform this function potentially causing overpressurization of portions of the high pressure core spray pump suction piping.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdown per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-10
(Rev. 01)

This Cold Shutdown Justification has been deleted.

These valves (1(2)E51-F008 and 1(2)E51-F063) are stroked on a quarterly basis because the previous cold shutdown justification did not provide adequate justification for test deferral. Refer to NUREG-1482 section 3.1.2.

Cold Shutdown Justification - CS-11
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full-stroke exercise the subject test line isolation valves to the open position nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E22-F023	2	A	HPCS Full Flow Test to Suppression Pool Isolation Valve
1(2)E21-F012	2	A	LPCS Full Flow Test Isolation Valve
1(2)E12-F021	2	A	RHR Pump C Full Flow Test Isolation Valve
1(2)E12-F024A	2	A	RHR Pump A Full Flow Test Isolation Valve
1(2)E12-F024B	2	A	RHR Pump B Full Flow Test Isolation Valve

Function

These normally closed valves are opened to provide a full flow test path for the RHR, LPCS and HPCS pumps during plant operation.

These valves have a safety function to automatically close upon initiation of a system actuation signal to ensure the proper deliver of system inventory to mitigate the consequences of an accident.

1(2)E12-F024A/B have a safety function to open to place RHR A(B) Loop in the suppression pool cooling mode for containment heat removal following a LOCA.

Justification

It is impractical to perform a full-stroke exercise of these valves to the open position on a quarterly (nominal 92 days) basis during plant operation. These valves are partial stroke tested quarterly during their respective inservice pump test surveillances. These valves are capable of being full-stroke exercised to the full open position during the quarterly pump surveillances; however, the lines in which these valves are located do not have restricting orifices to prevent runnout of the pumps when the subject valves are fully open. Operating pumps at runnout conditions could cause damage to the pumps and possibly degrade their long-term performance.

Cold Shutdown Justification - CS-11
(Rev. 02)

Exercising the valves during plant operation when the respective pumps are not operating is also possible but not recommended. The relatively large size of the valves and relatively slow operating times would result in the draining of substantial portions of the associated system piping. The draining of these systems would unnecessarily render them inoperable for a significant period of time until they are properly refilled, vented and pressurized. The pump discharge piping of these systems is maintained filled, vented and pressurized by the water leg pumps to prevent water hammer damage to their respective system during pump starts and to ensure the delivery of inventory to the core at the earliest possible moment.

Alternative Frequency

These valves will be part-stroke exercised on a quarterly basis (nominally 92 days) and full-stroke exercise tested to the closed position during cold shutdowns per OM-10 sections 4.2.1.2(b) and 4.2.1.2(f). 1(2)E12-F024A and 1(2)E12-F024B will be additionally full-stroke exercised to the open position during cold shutdowns per OM-10 section 4.2.1.2(b) and 4.2.1.2(f).

Cold Shutdown Justification - CS-12
(Rev. 01)
(Page 1 of 2)

Description

It is not practicable to full or part-stroke exercise the RCIC Outboard Injection Stop Valve nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F013	1	A	RCIC Outboard Injection Stop Valve

Function

This normally closed (dc powered) motor-operated valve has an automatic safety function to open on a RCIC initiation signal to inject RCIC flow into the reactor to mitigate the consequences of an accident.

This valve also has a safety function to close as a containment isolation valve. Additionally, this valve automatically closes if either the RCIC turbine steam supply valve 1(2)E51-F045 or the RCIC turbine trip and throttle valve 1(2)E51-F360 are closed.

Justification

It is impractical to perform a full or part-stroke exercise of this valve to the open or closed position on a quarterly (nominal 92 days) basis during plant operation. This valve is located in the RCIC injection line upstream of testable check valves.

Opening of the subject valve during plant operation could cause a main turbine trip, feedwater turbine trip and subsequent reactor scram. The open limit switch for the subject valve provides a time delayed input to the main turbine and feedwater turbine trip systems to prevent moisture carryover from damaging the turbines since RCIC injects on the top of the steam dryer (in the reactor vessel) through the head spray nozzle. If reactor power is > 30%, a reactor scram will occur.

Additionally, if the subject valve was opened at rated pressure, the testable check valves (1(2)E55-F065 and 1(2)E55-F066) are the only available pressure boundary valves between lower pressure RCIC piping and the reactor coolant system pressure. The opening of this valve could potentially cause overpressurization of portions of the RCIC system piping.

Cold Shutdown Justification - CS-12
(Rev. 01)
(Page 2 of 2)

Alternative Frequency

These valves will be full-stroke exercised open and closed during cold shutdown per sections 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-13
(Rev. 02)

Description

It is not practicable to full stroke exercise close the subject valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F008	1	A	RHR SDC Suction Header Outboard Isolation
1(2)E12-F009	1	A	RHR SDC Suction Header Inboard Isolation

Function

The subject valves are the RHR shutdown cooling header containment isolation valves. These normally closed valves have a closure and leakage limiting safety function as a containment isolation valve and as a reactor pressure boundary pressure isolation valve.

Justification

It is impractical to full stroke exercise close the subject motor-operated valves on a quarterly (nominal 92 days) basis during plant operation. 1(2)E12-F008 is normally electrically isolated at the electrical supply breaker to prevent the simultaneous opening of 1(2)E12-F008 and 1(2)E12-F009 as a result of a postulated fire in the auxiliary electric equipment room causes a short between their supply cables. In addition to being electrically isolated from its supply source, 1(2)E12-F008 is prevented from opening by an interlock unless reactor vessel pressure is ≤ 135 psig.

1(2)E12-F009 is normally closed during plant operation. This valve is prevented from opening by an interlock when reactor vessel pressure is ≤ 135 psig.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-14
(Rev. 01)

Description

It is not practicable to full stroke exercise the RHR Head Spray Isolation valve nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F023	1	A	RHR to Head Spray

Function

This valve has a required safety function to close for containment isolation for primary containment penetration M-29. This valve receives a Group 6 PCIS signal to close. This valve has no required safety function to open.

Justification

It is not practical to full or part-stroke these valves on a quarterly (nominal 92 days) basis during plant operation. 1(2)E12-F023 is prevented from opening by an interlock unless reactor vessel pressure is ≤ 135 psig. The reactor pressure interlock prevents the inadvertent opening of this valve during power operation to protect the lower design pressure rated RHR system piping located upstream of the RCIC injection line and the reactor vessel head spray line from overpressurization as a result of reactor coolant pressure.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-15
(Rev. 01)

Description

It is not practicable to full stroke exercise the following LPCI injection valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F042A	1	A	LPCI Injection
1(2)E12-F042B	1	A	LPCI Injection
1(2)E12-F042C	1	A	LPCI Injection

Function

The subject valves are normally closed and open upon a receipt of an RHR initiation signal. These valves have a safety function in the closed direction and have a leakage limiting function as primary containment isolation valves and reactor coolant boundary pressure isolation valves. These valves have an open safety function to provide a flowpath from the RHR system to the reactor vessel.

Justification

It is not practical to full or part-stroke these valves on a quarterly (nominal 92 days) basis during plant operation. These valves are interlocked closed when either reactor pressure or the pressure immediately downstream of the injection valve is > 500 psig. This interlock prevents the inadvertent opening of this valve during power operation to protect the lower design pressure rated RHR system piping located upstream of the RCIC injection line and the reactor vessel head spray line from overpressurization as a result of reactor coolant pressure.

Alternative Frequency

These valves will be full-stroke exercised open and closed during cold shutdowns per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-16
(Rev. 01)

Description

It is not practicable to full stroke exercise close the following RHR system valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F053A	1	A	RHR Shutdown Cooling Discharge Isolation
1(2)E12-F053B	1	A	RHR Shutdown Cooling Discharge Isolation

Function

These valves have a safety function in the closed direction and have a leakage limiting function as primary containment isolation valves and reactor coolant boundary pressure isolation valves.

Justification

It is not practical to full stroke these valves on a quarterly (nominal 92 days) basis during plant operation. These normally closed valves are prevented from opening during plant operation when reactor pressure is > 135 psig. The reactor pressure interlock prevents the inadvertent opening of this valve during power operation to protect the lower design pressure rated RHR system piping located upstream of these valves from overpressurization as a result of reactor coolant pressure.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-17
(Rev. 01)

Description

It is not practicable to full stroke exercise the following RHR system valves nominally every 3 months per the requirements of OM-10, Para. 4.2.1.1 during normal plant operation.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F099A	1	A	RHR SDC Loop Testable Check Bypass Stop Valve
1(2)E12-F099B	1	A	RHR SDC Loop Testable Check Bypass Stop Valve

Function

These valves have a safety function to close and have a leakage limiting function as reactor coolant boundary pressure isolation valves.

These valves do not have a safety function to open. These valves provide a mechanism to equalize pressure allowing the shutdown cooling testable check valves 1(2)E12-F050A/B to cycle (using the valve operator) when reactor pressure exceeds the pressure on the upstream side of the valves. Shutdown cooling flow will cause the testable check valve disk to open regardless of the position of the valve actuator.

Justification

It is not practical to full or part-stroke these valves on a quarterly (nominal 92 days) basis during plant operation. These normally closed valves are prevented from opening during plant operation when reactor pressure is > 135 psig. The reactor pressure interlock prevents the inadvertent opening of this valve during power operation to protect the lower design pressure rated RHR system piping located upstream of these valves from overpressurization as a result of reactor coolant pressure.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per section 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-18
(Rev. 01)

This Cold Shutdown Justification has been deleted.

This Cold Shutdown Justification has been deleted. The Feedwater Line Outboard Testable Check Valves are exercised closed on a refuel frequency per RJ-18.

Cold Shutdown Justification - CS-19
(Rev. 0)
(Page 1 of 2)

Description

It is not practicable to full stroke close the following drywell instrument nitrogen valves nominally every 3 months per the requirements of OM-10, Paras. 4.2.1.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN074	2	A	Drywell Nitrogen Purge Isolation Valve
1(2)IN075	2	A	Drywell Nitrogen Purge Isolation Valve

Function

The subject valves have a safety function to close to isolate the primary containment penetrations M-60 (Unit 1) and M-54 (Unit 2) to mitigate the consequences of an accident. 1(2)IN074 and 1(2)IN075 automatically isolate on a Group 10 Containment Isolation signal.

The subject valves have a function to be open to allow the Drywell Pneumatic System (IN) gases to flow to support the proper operation of pneumatically controlled or operated loads. This is not a safety related function for the subject valves.

Justification

It is impractical to perform a full or part-stroke exercise of the subject valves during plant operation. None of the subject valves have part-stroke closure capability. The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads mainly in the drywell during plant operation. The distribution of the compressed gas is via two headers. The regulated header supplies all of the system requirements in the drywell (MSIVs, main steam safety relief valves (SRV's), reactor recirculation sample valves, recirculation pump seal water control valves and RHR, RCIC, HPCS and LPCS testable check valves) with the exception of the ADS valves. The ADS valve accumulators are supplied by the unregulated header. Additionally there are safety related nitrogen bottles (2 banks of 4) connected to the unregulated header outside of containment which will makeup gas to the unregulated header when pressure drops below 160 psig.

Cold Shutdown Justification - CS-19
(Rev. 0)
(Page 2 of 2)

It is impractical to perform a full-stroke exercise of 1(2)IN074 and 1(2)IN075 during power operation. The closure of either of these valves would isolate the purge path for all of the IN system air dryers and the relief paths for numerous system relief valves to the drywell. There are two desiccant type air dryers for each compressor. The dryers are used to ensure that the moisture content of the compressed gas will not adversely impact the operation of the components served (MSIVs, SRVs (including ADS valves), and etc.). Closure of either valve could adversely affect the moisture quality of the IN system air. Additionally, there are numerous IN system relief valves that use the dryer purge path as a relief path for IN system gas. Closure of either valve could prevent the relief valves from relieving system pressure as required to prevent overpressurization of the system or damage to system equipment.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per sections 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-20
(Rev. 01)

This Cold Shutdown Justification has been deleted.

1(2)VP053A/B, 1(2)VP114A/B, 1(2)VP063A/B, and 1(2)VP113A/B, Chilled Water Supply and Return Valves, are now tested on a quarterly frequency.

Cold Shutdown Justification - CS-21
(Rev. 01)

This Cold Shutdown Justification has been deleted.

1(2)E51-F064, RCIC Steam Inlet RHR Heat Exchanger Supply Isolation Valves, have been replaced with blind flanges per DCP's 9900138 and 9900204.

Cold Shutdown Justification - CS-22
(Rev. 01)

This Cold Shutdown Justification has been deleted.

The test frequency for 1(2)B33-F067B is no longer applicable. These Reactor Recirc Pump Discharge Valves are no longer in the IST Program because they have no safety function in opening or closing.

Cold Shutdown Justification - CS-23
(Rev. 01)

This Cold Shutdown Justification has been deleted.

The open testing of the RCIC Injection Inboard and Outboard Testable Check Valves has been deferred to a refueling frequency (Ref. RJ-29) per the requirements of ISTC 4.5.2(a) which states that open and closed testing need only be performed at an interval when it is practicable to perform both tests.

Cold Shutdown Justification - CS-24
(Rev. 01)

Description

It is not practicable to full-stroke close the subject valves nominally every 3 months per the requirements of OM-10, Paras. 4.2.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN017	2	A	DW Instr N2 Regulated Hdr Drywell Isolation Valve

Function

The subject valves have a safety function to close to isolate the primary containment penetration M-60 (Unit 1) and M-54 (Unit 2) to mitigate the consequences of an accident. These valves automatically isolate on a Group 10 Containment Isolation signal. These valves have an open function to provide a flow path for Nitrogen to the Main Steam Safety Relief Valve accumulators. This has been determined to be a non-safety function.

Justification

The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads mainly in the drywell during plant operation. The distribution of the compressed gas is via two headers. The regulated header supplies all of the system requirements in the drywell (MSIVs, main steam safety relief valves (SRV's), reactor recirculation sample valves, recirculation pump seal water control valves and RCIC testable check valves) with the exception of the ADS valves.

The MSIVs are operated by air operated piston to cause the valves to open or assist spring pressure in closing the valves. The flow of instrument air is controlled by solenoid operated pilot valves in the air supply line. The solenoids are energized to open the MSIV. If both solenoids are deenergized, the air will be vented from the operating piston and air pressure (with spring assist) will close the valve.

It is impractical to perform a full-stroke exercise of 1(2)IN017 during power operation. The closure of 1(2)IN017 would isolate the pneumatic supply to the inboard Main Steam Isolation Valves. Loss of pressure between the Inboard MSIV Accumulator Inlet check Valve and the MSIV with this valve closed will cause the MSIV to close and the reactor to SCRAM.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per sections 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-25
(Rev. 01)

Description

It is not practicable to full-stroke close the subject valves nominally every 3 months per the requirements of OM-10, Paras. 4.2.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN031	2	A	Drywell Instr N2 TIP Indexer Purge Valve

Function

The subject valves have a safety function to close to isolate the primary containment penetration M-47 to mitigate the consequences of an accident. These valves automatically isolate on a Group 2 Containment Isolation signal. These valves have an open function to provide a flow path for Nitrogen to each TIP index mechanism and guide tube assembly. This has been determined to be a non-safety function.

Justification

The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads mainly in the drywell during plant operation. Each TIP index mechanism and guide tube assembly is continuously purged with dry nitrogen from the drywell pneumatic system. This prevents changes in the drywell atmospheric humidity from effecting the quality of the flux profile. In addition, each drive mechanism is purged with dry instrument air to aid in moisture removal.

It is impractical to perform a full or part-stroke exercise of the subject valves to the closed position during plant operation. The closure of 1(2)IN031 would isolate the pneumatic supply to the TIP drive mechanism. This may have adverse affects on drywell atmosphere humidity from destroying the Sermetel (graphite) coating of the guide tubes, which could render the TIP system inoperable. The nitrogen purge also limits the amount of general corrosion on all interior surfaces, and thus further reduces the possibilities of component failure.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per sections 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification - CS-26
(Rev. 0)

Description

It is not practicable to full-stroke close the subject valves nominally every 3 months per the requirements of OM-10, Paras. 4.2.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN100	2	B	ADS N2 Supply to DW Isolation Valve
1(2)IN101	2	B	ADS N2 Supply to DW Isolation Valve

Function

The subject valves have a safety function to close to isolate the primary containment penetration M-55 and M-66 to mitigate the consequences of an accident. These valves do not receive an automatic Containment Isolation signal. These valves exist to satisfy the requirements of 10CFR50 Appendix A, GDC 57 but performs no safety function. The ADS valves are designed, analyzed and tested to perform their required safety functions on a total loss of pneumatic supply pressure by the pressure retained in the individual accumulators by their respective check valves. This backup pressure source provides the option of using the ADS valves for long term accident mitigation.

Justification

The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads mainly in the drywell during plant operation.

It is impractical to perform a full or part-stroke exercise of the subject valves to the closed position during plant operation. The closure of 1(2)IN100 or 1(2)IN101 would isolate the pneumatic supply to the individual ADS valve accumulators. This may have adverse affect on the system capability to maintain the ADS valves in the open position.

Alternative Frequency

These valves will be full-stroke exercised closed during cold shutdowns per sections 4.2.1.2(c) and 4.2.1.2(f) of OM-10.

Cold Shutdown Justification – CS-27
(Rev. 0)
(Page 1 of 2)

Description

It is not practicable to full-stroke close the HCU Accumulator Charging Water Check Valve nominally every 3 months per the requirements of OMa ISTC 4.5.2.

Affected Components

EPN	Class	Cat.	Description
1(2)C11-D001-115	N	C	HCU Accumulator Charging Water Check Valve

Function

There are 185 of each of the valves listed above, i.e., one for each of the 185 control rod drives.

1(2)C11-D001-115 (HCU Accumulator Charging Water Check Valve) has a safety function to close to prevent the loss of water pressure in the event that charging supply pressure is lost.

This valve has a function to open to allow charging water to pass from the control rod drive pumps to the hydraulic control units. Flow to the accumulators is required only during scram reset or system startup. This valve has no safety function to open.

Justification

The LCNS reactor vessels are equipped with bottom-entry hydraulically driven control rod drive mechanisms with high pressure water providing the hydraulic power. Each control rod (185 total) is operated by a hydraulic control unit (HCU),

Cold Shutdown Justification – CS-27
(Rev. 0)
(Page 2 of 2)

which consists of valves and an accumulator. The HCU is supplied charging and cooling water from the control rod drive pumps and the control rod operating cylinder exhausts to the scram discharge volume.

Various valves in the control rod drive system perform an active function in scramming the control rods to rapidly shut down the reactor. As outlined in Appendix A, NRC Staff Position 7 "Testing of Individual Scram Valves for Control Rods in Boiling Water Reactors" of NUREG-1482, the control rod drive system valves that perform an active function in scramming the reactor are the scram discharge volume vent and drain valves, scram inlet and outlet valves, the scram discharge header check valves, the charging water header check valves and the cooling water check valves.
It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation. Closure verification of this valve can only be performed by depressurizing the charging water header with the HCU pressurized. Depressurization of the charging header to < 1157 psig for a period of > 10 seconds during plant operation would cause an automatic scram of the reactor.

In earlier stages of the IST Program, these valves were tested in Refuel Outages only. The Justification had been that in order to perform a pressure decay test of the HCU accumulators to verify check valve closure, the control rod drive pumps had to be shutdown. Since the control rod drive pumps had to be shutdown, the reactor recirculation pumps also had to be shutdown because reactor recirculation pump seal supply was isolated. The shutdown of the reactor recirculation pumps would have increased the wear and stress on the pumps, increasing the number of cycles of plant equipment and possibly extend the length of the cold shutdown. This position was similar to the NRC position identified in section 3.1.1.4 of NUREG-1482 regarding the stopping of reactor coolant pumps for cold shutdown valve testing.

Due to process changes, the Surveillance for this testing, was changed, allowing a pressure decay test without shutting down the control rod drive pumps. The change involves the isolation of the charging water header from the pump discharge path, and pressure decay through a drain line on the charging water header. This change in procedure allows for closure testing of the HCU accumulator checks during cold shutdown periods.

Alternative Frequency

This valve will be full-stroke exercised closed during cold shutdown per OMa ISTC 4.5.2(b).

ATTACHMENT 7

REFUEL OUTAGE JUSTIFICATION INDEX
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Designator	Description	Revision
RJ-01	Feedwater Check Valves	02
RJ-02	Main Steam Relief Valve Vacuum Breakers	02
RJ-03	Drywell Nitrogen Valves	02
RJ-04	Deleted	N/A
RJ-05	Deleted	N/A
RJ-06	MSIV and ADS Accumulator Check Valves	02
RJ-07	Accumulator Check Valves to FW Testable Checks	02
RJ-08	Recirc Pump Seal Flow Check Valves	01
RJ-09	Deleted	N/A
RJ-10	Scram Inlet and Scram Outlet Valves	02
RJ-11	Excess Flow Check Valves	02
RJ-12	Injection Testable Check Valves	03
RJ-13	Deleted	N/A
RJ-14	RVWLIS Instrument Panel Check Valves	03
RJ-15	Deleted	N/A
RJ-16	Deleted	N/A
RJ-17	HPCS, LPCS, LPCI Injection Testable Check Valves	02
RJ-18	Feedwater Outboard Testable Check Valves	01
RJ-19	Shutdown Cooling Testable Check Valves	02
RJ-20	Drywell Instrument Check Valves	01
RJ-21	Scram Discharge Header Check Valves	02
RJ-22	Deleted	N/A
RJ-23	Main Steam System Alternate Shutdown Cooling Valves	0
RJ-24	Deleted	N/A
RJ-25	Deleted	N/A
RJ-26	SBLC System Injection Check Valves	01
RJ-27	Deleted	N/A
RJ-28	RCIC Turbine Exhaust Check Valves	01
RJ-29	RCIC Injection Testable Check Valves	01
RJ-30	RCIC Turbine Exhaust Vacuum Breaker Check Valves	01

REFUEL OUTAGE JUSTIFICATION INDEX

ATTACHMENT 8

REFUEL OUTAGE JUSTIFICATIONS

Reactor Refueling Justification - RJ-01
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to exercise close the Feedwater Check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F010A	1	AC	Feedwater Inboard Check Valve
1(2)B21-F010B	1	AC	Feedwater Inboard Check Valve

Function

The subject valves have a safety function to close (self-actuation) to isolate the primary reactor containment (penetration M-5 and M-6 respectively). Additionally, these valves have a safety function to close (self-actuation) to isolate the Reactor Coolant Pressure Boundary whenever normal feedwater flow becomes unavailable.

These valves have a function to be open during normal plant operation to provide a path for feedwater flow to the reactor vessel to maintain the desired water level. This is not a safety function. Open function testing to satisfy the bi-directional testing requirement of ISTC 4.5.2(a) is satisfied in the course of normal plant operation.

Justification

It is not practical to full-stroke these valves to the closed position on a quarterly (nominally every 3 months) basis during plant operation. The feedwater system serves as the main source of makeup water to the reactor vessel during plant operation. Closure of either of the subject valves would induce a plant transient due to reduced feedwater flow to the reactor vessel, unnecessarily challenge the plant operators and could subsequently cause a plant scram.

The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing. As described above, all of the subject check valves have a seat leakage limiting function as primary containment isolation valves. Therefore, these valves are individually leakage rate tested in accordance with the requirements of 10 CFR 50 Appendix J and Technical Specification Surveillance Requirement 3.6.1.1.

Reactor Refueling Justification - RJ-01
(Rev. 02)
(Page 2 of 2)

In order to manipulate the test connections and block valves to their proper position to perform a leakage rate test of the subject valves, an entry into the drywell is required. This is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing these leakage rate tests would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Additionally, in section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-02
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to perform a full-stroke exercise of the Main Steam Relief Valve (MSRV) Vacuum Breakers to the open or closed position nominally every 3 months or during cold shutdowns per the requirements of OM-10, Para. 4.3.2.1.

Affected Components

EPN	Class	Cat.	Description
1B21-F037A1/2*	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1B21-F037B1/2*	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037C1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037D1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037E1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037F1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1B21-F037G1/2*	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037H1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1B21-F037J1/2*	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037K1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037L1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037M1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1B21-F037N1/2*	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037P1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037R1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037S1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037U1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker
1(2)B21-F037V1/2	3	C	Safety Relief Valve Discharge Line Vacuum Breaker

* Valves A/B/G/J/N 1/2 permanently removed by DCP 9600382 on Unit 2.

Function

These valves have a safety function to open to collapse vacuum in the SRV discharge downcomer following SRV actuation in order to prevent water from the suppression pool from being drawn into the downcomer which could result in a serious water hammer condition upon subsequent re-actuation of the SRV.

The subject valves also have a closure safety function to prevent discharge of the SRV from being directed into the drywell.

Reactor Refueling Justification - RJ-02
(Rev. 02)
(Page 2 of 2)

These valves are not capacity certified and are only required to meet the requirements of OM-10.

Justification

It is impractical to perform a full stroke exercise of the subject valves during plant operation or during cold shutdowns. The only practical method available to perform a full-stroke exercise of these valves is by manually exercising the valve disk to its full open and full closed position while visually verifying valve obturator (disk) position. Access to the disk is gained from the intake port of the valve body.

In order to perform this test, access to the drywell area is required. Access to the drywell area is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing the exercise tests for the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Alternative Frequency

These valves will be manually full-stroke exercised open and closed during refueling outages per section 4.3.2.2(e) of OM-10.

Reactor Refueling Justification – RJ-03
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full stroke close the following drywell instrument nitrogen valves nominally every 3 months or during cold shutdowns per the requirements of OM-10, Para. 4.2.1.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN001A	2	A	Drywell Suction Isolation Valve
1(2)IN001B	2	A	Drywell Suction Isolation Valve

Function

The subject valves have a safety function to close to isolate the primary containment (penetration M-62 Unit 1 and penetration M-54 Unit 2) to mitigate the consequences of an accident. The subject valves automatically isolate on a Group 10 Containment Isolation signal.

The subject valves have a function to be open to allow the Drywell Pneumatic System (IN) gases to flow to support the proper operation of pneumatically controlled or operated loads located in the drywell. This is not a safety related function for the subject valves.

Justification

It is not practical to perform a full-stroke exercise of the subject valves during plant operation or during cold shutdowns. The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads located in the drywell during plant operation and during cold shutdowns. The distribution of the compressed gas is via two headers. The regulated header supplies all of the system requirements in the drywell (MSIVs, main steam safety relief valves, reactor recirculation sample valves and the recirculation pump seal water control valves) with the exception of the ADS valves. The ADS valve accumulators are supplied by the unregulated header. Additionally there are safety related nitrogen bottles (2 banks of 4) connected to the unregulated header outside of containment which will makeup gas to the unregulated header when pressure drops below 160 psig.

Reactor Refueling Justification – RJ-03
(Rev. 02)
(Page 2 of 2)

It is impractical to perform a full-stroke exercise of the subject valves during plant operation or during cold shutdowns. In order to perform a closure test of either 1(2)IN001A or 1(2)IN001B, the compressors would have to be shutdown to avoid an automatic compressor trip or compressor damage. A shutdown of the compressors would cause the shutdown of the entire IN system and unnecessary cycling of plant equipment. A backup gas supply from the instrument air system via 1(2)IN059 and 1(2)IN060 is available to provide backup air to operate the components such as the SRV's (non-ADS), MSIVs (inside the drywell) and the recirculation pump seal water control valves. However, use of this air supply line may cause dilution of the inerted containment atmosphere. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Additionally, it is not practical to close the subject valves during cold shutdowns. The compressors normally remain in operation during cold shutdowns. Additionally, the drywell is not routinely de-inerted during cold shutdowns.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.2.1.2(e) of OM-10.

Reactor Refueling Justification – RJ-04
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The Main Steam Isolation Valve Leakage Control System has been disconnected from the Main Steam System, has been downgraded to non-safety class (i.e., Class D), and is abandoned in place. The valves previously identified in this refueling outage justification have been deleted from the IST program.

Reactor Refueling Justification – RJ-05
(Rev. 01)

This Reactor Refueling Justification has been deleted.

This refueling outage justification was deleted in revision 1 of the program.

Reactor Refueling Justification – RJ-06
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full-stroke close the MSIV and ADS accumulator check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F024A/B/C/D	3	AC	Inbd MSIV Accumulator Check Valve
1(2)B21-F029A/B/C/D	3	AC	Outbd MSIV Accumulator Check Valve
1(2)B21-F040C/D/E/R/S/U/V	3	AC	ADS Accumulator Check Valves

Function

These valves have a function to open to allow pressurized gas to pass the MSIV and ADS accumulators to operate the valves. This is not a safety function for the MSIV valves. This function is discussed in detail in RJ-33 for the ADS valves.

These valves have a safety function to close to isolate non-safety related instrument air or nitrogen from the gas stored in the safety related accumulators. Accumulator pressure is required to ensure proper operation of the MSIVs and ADS valves to mitigate the consequences of an accident.

Justification

It is impractical to perform a full-stroke exercise to the closed position during plant operation or during cold shutdowns. The inboard MSIV accumulator check valves and the ADS accumulator check valves are located inside primary containment. The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing.

In order to manipulate the test connection valves and block valves to their proper position to perform a leakage rate test of the subject valves, an entry into the drywell is required. This is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant

Reactor Refueling Justification – RJ-06
(Rev. 02)
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operation or cold shutdowns for the sole purpose of performing these leakage rate tests would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

The only practical method of verifying the full-stroke closure capability of the outboard MSIV accumulator check valves is by seat leakage testing. This is impractical during plant operation because seat leakage testing would require isolation of the instrument air supply to at least two outboard MSIV accumulators. This removes the fast-closure (3 to 5 second) capability of the MSIV's with the depressurized accumulators. In addition, isolation of the air supply could potentially result in the closure of an MSIV at power potentially leading to a plant scram. Additionally, in order to perform leakage rate testing of the subject vlaves, equipment would have to be setup in the drywell and in the steam tunnel. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Bi-directional testing is required regardless of safety function per ISTC 4.5.2(a). Open and closed tests need only be performed at an interval when it is practicable to perform both tests. Therefore, the MSIV accumulator check valves will also be exercise tested open during refueling outages after leak rate testing when forward flow is established to repressurize the accumulators. For the ADS accumulator check valves, open testing is discussed further in RJ-33.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification – RJ-07
(Rev. 02)

This Reactor Refueling Justification has been deleted.

The Instrument Air Accumulator Check Valves to Feedwater Testable Check Valves, 1(2)B21-F529A/B, are excluded from the IST Program since they do not perform a safety function in either the open or closed directions.

Reactor Refueling Justification – RJ-08
(Rev. 01)

Description

It is not practicable to full-stroke exercise the Reactor Recirculation Pump Seal Flow Check Valves to the closed position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B33-F013A/B	2	AC	RR Pump Seal Flow Check Valve
1(2)B33-F017A/B	2	AC	RR Pump Seal Flow Check Valve

Function

These valves have a function to open to allow CRD system water to pass to the reactor recirculation pump seal packages. This is not a safety function for these valves. Bi-directional exercising requirements of ISTC 4.5.2 are satisfied in the open direction in the course of normal plant operation. The open function is verified during operating rounds of upstream flow elements (1(2)B33-R004A/B) installed in series with these check valves.

These valves have a safety function to close to isolate the primary containment to mitigate the consequences of an accident.

Justification

It is impractical to perform a full-stroke exercise test of these valves during plant operation or during cold shutdowns. These valves are in the reactor recirculation pump seal purge lines. The reactor recirculation pump seals are provided with water from the control rod drive pumps to prevent coolant flow from leaking along the reactor recirculation pump shaft out into the drywell. The seal purge provides a continuous flow of clean, cool water. It is highly desirable to maintain this flow at all times. If the seal purge flow is interrupted, a backflow of reactor coolant water may carry foreign material into the seal package which could damage the seal surfaces and result in rapid seal wear. The seal purge line check valves are normally open during plant operation to allow cooling flow to the reactor recirculation pump seals. During plant shutdown conditions this flow path is also maintained in operation for the same reasons.

The only practical method of verifying the full-stroke closure capability of these valves is by seat leakage testing. It was determined in section 4.1.4 of NUREG-1482, that the need to setup test equipment in order to perform a seat leakage rate test to verify valve closure is adequate justification to defer backflow testing of a check valve to a refueling outage.

Reactor Refueling Justification – RJ-08
(Rev. 01)
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Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-09
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The test frequency for the main steam line inboard isolation valves has been changed to cold shutdown. Refer to CS-08.

Reactor Refueling Justification - RJ-10
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full-stroke open the following scram inlet and outlet valves nominally every 3 months or during cold shutdowns per the requirements of OM-10, Paras. 4.2.1.1.

Affected Components

EPN	Class	Cat.	Description
1(2)C11-D001-126	N	B	Scram Inlet Valve
1(2)C11-D001-127	N	B	Scram Outlet Valve
1(2)C11-D001-117	N	B	CRD HCU Scram Pilot Valve
1(2)C11-D001-118	N	B	CRD HCU Scram Pilot Valve

Function

There are 185 of each of the valves listed above, i.e., one for each of the 185 control rod drives.

1(2)C11-D001-126 (Scram Inlet Valve) has a safety function to open to supply pressurized water to the bottom of the drive piston in order to initiate a scram action. This valve has no safety function to close.

1(2)C11-D001-127 (Scram Outlet Valve) has a safety function to open to pass scram exhaust water to the scram discharge volume. This valve has no safety function to close.

1(2)C11-D001-117 and 1(2)C11-D001-118 (CRD HCU Scram Pilot Valves) have a safety function to reposition on receipt of a Reactor Protection System (RPS) trip signal to vent air from the actuators of Scram Inlet Valve 1(2)C11-D001-126 and Scram Discharge Valve 1(2)C11-D001-127 of its respective HCU to rapidly insert the associated Control Rod.

Justification

The LCNS reactor vessels are equipped with bottom-entry hydraulically driven control rod drive mechanisms with high pressure water providing the hydraulic power. Each control rod (185 total) is operated by a hydraulic control unit (HCU), which consists of valves and an accumulator. The HCU is supplied charging and cooling water from the control rod drive pumps and the control rod operating cylinder exhausts to the scram discharge volume.

Reactor Refueling Justification - RJ-10
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Various valves in the control rod drive system perform an active function in scramming the control rods to rapidly shut down the reactor. As outlined in Appendix A, NRC Staff Position 7 "Testing of Individual Scram Valves for Control Rods in Boiling Water Reactors" of NUREG-1482, the control rod drive system valves that perform an active function in scramming the reactor are the scram discharge volume vent and drain valves, scram inlet and outlet valves, the scram discharge header check valves, the charging water header check valves and the cooling water check valves. With the exception of the scram discharge volume vent and drain valves, exercising the other valves quarterly during power operations could result in the rapid insertion of one or more control rods more frequently than desired.

It is impractical to perform a full-stroke exercise of the scram inlet valve, scram outlet valve, the CRD HCU scram pilot valves and scram discharge check valve (open position only) during plant operation or during cold shutdowns. The scram inlet, outlet valves and the CRD HCU scram pilot valves are power operated valves that full-stroke in milliseconds and are not equipped with indication of valve position for both positions; therefore, measuring their full-stroke time is impractical. Verifying that the associated control rod meets the scram insertion time limits of Technical Specification 3.1.4 provides an acceptable alternative method of detecting degradation for these valves. The scram insertion times of all control rods is demonstrated prior to exceeding 40% rated thermal power after each reactor shutdown that is greater than or equal to 120 days. Additionally, a representative sample is tested at least every 120 days cumulative operation in Mode 1, and individual control rods are tested following maintenance on or modification to the control rod or control rod drive system which could affect their scram insertion time.

Also, trending the stroke times of these valves is impractical and unnecessary since they are indirectly stroke timed and no meaningful correlation between scram time and valves stroke time may be obtained and furthermore, conservative limits are placed on the control rod scram insertion times. This is consistent with guidance outlined in Appendix A, NRC Staff Position 7 "Testing of Individual Scram Valves for Control Rods in Boiling Water Reactors" of NUREG-1482.

Alternative Frequency

These valves will be full-stroke exercised open or to the vented position during refueling outages per section 4.2.1.2(e) of OM-10.

Reactor Refueling Justification - RJ-11
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to perform a full-stroke exercise of the excess flow check valves during nominally every 3 months or during cold shutdowns.

Affected Components

EPN	Class	Cat.	Description
All Excess Flow Check Valves in the IST program.	2	AC	Excess Flow Check Valves

Function

These valves have a safety function in the closed position to limit leakage through primary containment instrument penetrations in the event of an instrument line break downstream of the excess flow check valve.

These valves have a function in the open position to allow process liquids or gases to pass to the instrument(s) located downstream of the excess flow check valves. This is a non-safety function, and is tested per the requirements of ISTC 4.5.2 in the course of normal plant operations.

Justification

It is impractical to full-stroke exercise the subject excess flow check valves to the closed position during plant operation or during cold shutdowns. The subject valves are controlled leakage check valves which are designed to automatically close in the event of a downstream line rupture in which flow exceeds 6.5 gpm (water service), or if drywell pressure exceeds 2 psig (gas service). Upon closing, these valves are designed to allow a controlled leakage of approximately 0.5 gpm (water service) or 5 scfm (gas service). Exercising these valves requires that the instrumentation tubing downstream of each excess flow check valve be depressurized or drained (as applicable) and the closure function verified by change in the amount of flow. Draining or depressurizing the downstream side of these valves will separate the subject instrument from its source. These instruments provide indication of a large number of essential plant operational parameters such as reactor recirculation flow, main steam line flow, reactor pressure vessel level and pressure, jet pump flow, drywell pressure, RCIC steam supply flow, reactor recirculation pump flow, etc. This instrumentation supplies input to a large number of reactor protection type actuations such as ECCS initiation, Primary Containment Isolation, Secondary Containment Isolation, etc. Isolation and testing of the subject valves during plant operation would render

Reactor Refueling Justification - RJ-11
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their respective instrumentation inoperable and could cause an unexpected plant transient, equipment actuations or a plant scram.
Additionally, the performance of this closure test requires the installation of test equipment to monitor the expected change in flow when the valve moves to the check position. It was determined in section 4.1.4 of NUREG-1482, that the need to setup test equipment in order to verify valve closure is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-12
(Rev. 03)
(Page 1 of 2)

Description

It is not practicable to perform a full-stroke closure exercise of the following injection check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E22-F005	1	AC	HPCS Injection Inboard Check Valve
1(2)E21-F006	1	AC	LPCS Injection Inboard Check Valve
1(2)E12-F041A	1	AC	RHR Injection Inboard Check Valve
1(2)E12-F041B	1	AC	RHR Injection Inboard Check Valve
1(2)E12-F041C	1	AC	RHR Injection Inboard Check Valve

Function

These normally closed check valves have a safety related leakage limiting function in the closed position as reactor coolant pressure boundary isolation valves.

These valves have a safety function to open to allow the high pressure core spray system (HPCS), low pressure core spray (LPCS) and residual heat removal/low pressure coolant injection (RHR/LPCI) to pass water to cool the reactor core sufficiently to prevent excessive fuel cladding temperature following a break in the nuclear system piping. Open exercise testing of the subject valves is performed on a refueling outage frequency (Ref. RJ-17).

Justification

These normally closed check valves serve as the first isolation valve in the event of a system line break.

Since the subject valves are reactor coolant pressure boundary isolation valves, they are required to promptly isolate to mitigate the consequences of an accident.

Reactor Refueling Justification - RJ-12
(Rev. 03)
(Page 2 of 2)

The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing. As described above, all of the subject check valves have a seat leakage limiting function as reactor coolant pressure boundary pressure isolation valves. Therefore, these valves are individually leakage rate tested in accordance with the requirements of Technical Specification Surveillance Requirement 3.4.6.1.

In order to manipulate the test connection valves and block valves to their proper position to perform a leakage rate test of the subject valves, an entry into the drywell is required. This is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing these leakage rate tests would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Additionally, in order to perform leakage rate testing of the subject valves, equipment would have to be setup in the drywell. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-13
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The RHR pump minimum flow line check valves 1(2)E12-F046A/B/C are being disassembled each refueling outage in accordance with Condition Monitoring Plan CM-01.

Reactor Refueling Justification - RJ-14
(Rev. 03)
(Page 1 of 2)

Description

It is not practicable to verify closure capability of the Reactor Vessel Water Level Indication System (RVWLIS) Reference Leg Continuous Backfill Panel Check Valves position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)C11-F422B	2	AC	RVWLIS Instrument Panel B Check Valve
1(2)C11-F422D	2	AC	RVWLIS Instrument Panel D Check Valve
1(2)C11-F422F	2	AC	RVWLIS Instrument Panel F Check Valve
1(2)C11-F422G	2	AC	RVWLIS Instrument Panel G Check Valve
1(2)C11-F423B	2	AC	RVWLIS Instrument Panel B Check Valve
1(2)C11-F423D	2	AC	RVWLIS Instrument Panel D Check Valve
1(2)C11-F423F	2	AC	RVWLIS Instrument Panel F Check Valve
1(2)C11-F423G	2	AC	RVWLIS Instrument Panel G Check Valve

Function

These valves have a function to open to allow a continuous flow of water from the control rod drive system to pass to the reactor vessel level indicating system reference legs. This backfill water is provided to prevent non-condensable gases from separating in the reference legs, which could adversely affect the indication of reactor vessel level. This is not a safety function.

These valves have a safety function to close and limit primary containment leakage in the event of an accident and to maintain the instrument reference leg full to ensure accurate reactor water level signals and indications.

Justification

It is impractical to perform a full-stroke exercise of the subject valves to the closed position during plant operation or during cold shutdowns. The only practical method to verify individual valve closure is by the performance of a local leakage test to the requirement of 10 CFR 50 Appendix J and Technical Requirements Manual Technical Surveillance Requirement 3.3.n.2. This leakage test requires isolation of the reference leg backfill flow and venting and draining of piping. The isolation and draining of these portions of the system is not practical during plant operation. The reference leg backfill system is designed to provide a continuous flow of water to the reactor vessel level

Reactor Refueling Justification - RJ-14
(Rev. 03)
(Page 2 of 2)

instrument reference legs to prevent the introduction and propagation of non-condensable gases in the reference legs. The isolation of backfill flow for LLRT testing could adversely affect accuracy of the indication of reactor vessel level indication. Reactor vessel level indication is used as an input to numerous alarms and safety actuations (main turbine trip, reactor feed pump trip, HPCS actuation, PCIS, reactor recirculation trip, reactor scram and etc.).

Seat leakage testing of the subject valves during cold shutdowns is also impractical. As stated above, local leakage rate testing of the subject valves requires the isolation of the reference backfill lines, venting and draining of piping and the installation of test equipment. It was determined in section 4.1.4 of NUREG-1482, that the need to setup test equipment in order to perform a seat leakage rate test to verify valve closure is adequate justification to defer backflow testing of a check valve to a refueling outage.

Bi-directional exercising requirements of OMa-1996 ISTC 4.5.2 are satisfied in the open direction during the fill and vent process of leak rate testing on a refuel outage frequency. A refuel frequency for the open exercise testing is justified by ISTC 4.5.2(a), which states that open and close tests need only be performed at an interval when it is practicable to perform both tests.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-15
(Rev. 01)

This Refueling Outage Justification has been deleted.

This refueling outage justification was originally written to perform a sample disassembly technique for the subject valves that was redundant to the justification provided in Relief Request RV-1 for 0DG002, 1(2)DG002, 1(2)E22-F028, 1(2)FC044A and 1(2)FC044B. RV-1 was also deleted. The subject valves are tested in accordance with the requirements of section OMa-1996 ISTC and Appendix II.

Reactor Refueling Justification - RJ-16
(Rev. 01)

This Refueling Outage Justification has been deleted.

The Chilled Water Supply and Return Isolation Valves are now tested on a cold shutdown frequency. Refer to cold shutdown justification CS-20.

Refueling Outage Justification - RJ-17
(Rev. 02)

Description

It is not practicable to full or part-stroke open exercise the following HPCS, LPCS and LPCI/RHR injection check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E22-F005	1	AC	HPCS Injection Inboard Check Valve
1(2)E21-F006	1	AC	LPCS Injection Inboard Check Valve
1(2)E12-F041A	1	AC	RHR Injection Inboard Check Valve
1(2)E12-F041B	1	AC	RHR Injection Inboard Check Valve
1(2)E12-F041C	1	AC	RHR Injection Inboard Check Valve

Function

These normally closed check valves have a safety related leakage limiting function in the closed position as reactor coolant pressure boundary isolation valves. Closure testing of the subject valves is performed during refueling outages (Ref. RJ-12).

These valves have a safety function to open to allow the high pressure core spray system (HPCS), low pressure core spray (LPCS) and residual heat removal/low pressure coolant injection (RHR/LPCI) to pass water to cool the reactor core sufficiently to prevent excessive fuel cladding temperature following a break in the nuclear system piping.

Justification

The only method to verify a full-stroke open exercise of the valve internals is to flow inventory through the valve at a rate which meets or exceeds the required maximum accident condition flow. It is not practical to provide any flow through the LPCI/RHR and

Refueling Outage Justification - RJ-17
(Rev. 02)
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LPCS valves to perform a full or part-stroke exercise during plant operation. The LPCI/RHR and LPCS pumps have insufficient head to flow to the reactor during normal power operations. Additionally, the LPCI/RHR and LPCS injection isolation valves are interlocked to prevent their opening during plant operation when reactor coolant system pressure is > 500 psig. The reactor pressure interlock prevents the inadvertent opening of these valves during power operation to protect the lower design pressure rated LPCI/RHR and LPCS system piping located outside of the reactor containment from overpressurization.

It is not practical to pass any flow through the HPCS system to perform a full or part-stroke exercise of 1(2)E22-F005 during plant operation. HPCS is an emergency core cooling system that is designed to cool the reactor in the event of a coolant system pipe break. If the HPCS system were operated during plant operation, relatively cold water would be directly injected into the reactor at power. This could cause a reactor reactivity excursion and/or level transient which would unnecessarily challenge plant operators and possibly result in a reactor scram.

It is not practical to perform a full or part-stroke exercise of the LPCS and HPCS injection check valves during cold shutdowns. The LPCS and HPCS pumps take suction off of the suppression pool. The injection of suppression pool water into the reactor vessel would upset the chemical condition of the reactor vessel and reactor coolant system. The cleanup required to restore the proper chemical conditions of reactor coolant system could significantly delay plant startup.

It is not practical to perform a full or part-stroke exercise of the RHR system injection check valves during cold shutdowns. During cold shutdowns the RHR system would be operating in the shutdown cooling mode of operation to remove the decay heat of the reactor fuel and associated reactor coolant system components. The RHR system would normally take suction from the reactor via the recirculation loop "A" suction lines and returned to the reactor via the recirculation loop "A" or "B" discharge (shutdown cooling) lines. Plant procedures allow the use of the LPCI/RHR injection paths to the reactor vessel during shutdown cooling operations but the use of this path is not recommended when either of the shutdown cooling paths are available. Use of the LPCI/RHR injection paths during the shutdown cooling mode of operation when the reactor vessel is being cooled can thermally stress the LPCI nozzles in the reactor vessel possibly leading to their pre-mature failure.

Alternative Frequency

These valves will be full-stroke exercised open during refueling outages per section 4.5.2(c) of ISTC.

Refueling Outage Justification - RJ-18
(Rev. 02)
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Description

It is not practicable to full or part-stroke close exercise the following feedwater system testable check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F032A	1	A/C	A Feedwater Line Otbd. Testable Check Valve
1(2)B21-F032B	1	A/C	B Feedwater Line Otbd. Testable Check Valves

Function

The subject valves have a safety function to close (Group 2 PCIS) to isolate the primary reactor containment (penetration M-5 and M-6). Additionally, these valves have a safety function to close (self-actuation) to isolate the Reactor Coolant Pressure Boundary whenever normal feedwater flow becomes unavailable.

These valves have a function to be open during normal plant operation to provide a path for feedwater flow to the reactor vessel to maintain the desired water level. This is not a safety function. Open function testing to satisfy the bi-directional testing requirements of ISTC 4.5.2(a) are satisfied in the course of normal plant operations.

Justification

~~It is not~~ practical to full-stroke these valves to the closed position on a quarterly (nominally every 3 months) basis during plant operation. The feedwater system serves as the main source of makeup water to the reactor vessel during plant operation. Full closure of either of the subject valves would induce a plant transient due to reduced feedwater flow to the reactor vessel, unnecessarily challenge the plant operators and could subsequently cause a plant scram.

Refueling Outage Justification - RJ-18
(Rev. 02)
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Since the subject valves are containment isolation valves and are used to isolate reactor coolant pressure boundary as a result of a feedwater break, they are required to promptly isolate to mitigate the consequences of an accident. As identified in Appendix A (Question Group 25 (modified response); pg. A-18 & A-19) of NUREG-1482, if a prompt closure of these valves on cessation or reversal of flow is required to accomplish a safety-related function, closure must be verified by reverse flow testing or such other positive means as acoustic monitoring or radiography.

The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing. As described above, all of the subject check valves have a seat leakage limiting function as primary containment isolation valves. Therefore, these valves are individually leakage rate tested in accordance with the requirements of 10 CFR 50 Appendix J and Technical Specification Surveillance Requirement 3.6.1.1.1.

In order to manipulate the test block valves to their proper position to perform a leakage rate test of the subject valves, an entry into the drywell is required. This is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing these leakage rate tests would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Additionally, in section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages due to their prompt closure function (without the air actuator) per section 4.5.2(c) of ISTC.

Refueling Outage Justification - RJ-19
(Rev. 02)
(Page 1 of 2)

Description

It is not practicable to full stroke close exercise the shutdown cooling check valves nominally every 3 months per the requirements of ISTC, Para. 4.5.1 or cold shutdowns.

Affected Components

EPN	Class	Cat.	Description
1(2)E12-F050A	1	A/C	Shutdown Cooling Check Valve
1(2)E12-F050B	1	A/C	Shutdown Cooling Check Valve

Function

These valves have a safety function to close (self-actuation) to isolate the Reactor Coolant Pressure Boundary whenever normal feedwater flow becomes unavailable.

These valves do not have an open safety function, but are tested in the open direction on a refuel frequency to meet the bi-directional testing requirements of ISTC 4.5.2(a). A refuel frequency for the open exercise testing is justified by ISTC 4.5.2(a), which states that open and close tests need only be performed at an interval when it is practicable to perform both tests.

Justification

These normally closed testable check valves serve as the first isolation valve in the event of a system line break.

It is not practical to perform a full-stroke exercise of the subject valves to the closed position during plant operation or cold shutdowns. The subject valves are used to isolate reactor coolant pressure boundary as a result of an RHR system piping break. As such, they are required to promptly isolate to mitigate the consequences of an accident. As identified in Appendix A (Question Group 25 (modified response); pg. A-18 & A-19) of NUREG-1482, if a prompt closure of these valves on cessation or reversal of flow is required to accomplish a safety-related function, closure must be verified by reverse flow testing or such other positive means as acoustic monitoring or radiography.

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The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing. As described above, all of the subject check valves have a seat leakage limiting function as reactor coolant boundary pressure isolation valves. Therefore, these valves are individually leakage rate tested in accordance with the requirements of Technical Specification Surveillance Requirement 3.4.6.1.

In order to manipulate the test block and test connection valves to their proper position to perform a leakage rate test of the subject valves, an entry into the drywell is required. This is not practical during plant operation or cold shutdowns. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing these leakage rate tests would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Additionally, in section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

The subject valves shall be full-stroke exercised to the closed position during refueling outages per section 4.5.2(c) of ISTC.

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Description

It is not practicable to full stroke close the following drywell instrument nitrogen valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Paras. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)IN018	2	AC	Drywell Nitrogen to Drywell Check Valve
1(2)IN043	3	C	ADS Supply Check Valve
1(2)IN044	3	C	ADS Supply Check Valve

Function

1(2)IN018 has a safety function to close to isolate the primary containment (penetration M-60) to mitigate the consequences of an accident. 1(2)IN043 and 1(2)IN044 have a safety function to close to prevent the safety related nitrogen supply gas from the nitrogen bottle bank from supplying the non-safety related IN header. The nitrogen bottle banks are expected to be used only when the normally operating IN system is incapable of meeting the ADS valve accumulator pressure requirements.

The subject valves have a function to be open to allow the Drywell Pneumatic System (IN) gases to flow to support the proper operation of pneumatically controlled or operated loads located in the drywell. This is not a safety related function for the subject valves. For the ADS Supply Checks, open exercise testing is performed on a refueling frequency to satisfy bi-directional testing requirements of ISTC. A refuel frequency for the open exercise testing is justified by ISTC 4.5.2(a), which states that open and close tests need only be performed at an interval when it is practicable to perform both tests.
1(2)IN018 check valves open exercise testing is discussed in Condition Monitoring Plan CM09.

Justification

It is not practical to perform a full-stroke exercise of the subject valves during plant operation or during cold shutdowns. The purpose of the IN system is to supply instrument quality compressed gas for the continuous operation of pneumatically controlled or operated loads located in the drywell during plant operation and during cold shutdowns. The distribution of the compressed gas is via two headers. The regulated header supplies all of the system requirements in the drywell (MSIVs, main steam safety relief valves, reactor recirculation sample valves, recirculation pump seal water control valves and RHR, RCIC,

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HPCS and LPCS testable check valves) with the exception of the ADS valves. The ADS valve accumulators are supplied by the unregulated header. Additionally there are safety related nitrogen bottles (2 banks of 4) connected to the unregulated header outside of containment which will makeup gas to the unregulated header when pressure drops below 160 psig.

The only practical method to verify the full-stroke closure capability of these valves utilizing flow is by seat leakage testing. As described above, 1(2)IN018 has a leakage limiting function as a containment isolation valve. Therefore, 1(2)IN018 is individually leakage rate tested in accordance with the requirements of Technical Specification Surveillance Requirement 3.6.1.1.1. In order to manipulate the test connection valves and block valves to their proper position to perform a leakage rate test of the subject valves, the regulated gas supply to the MSIVs (inside containment), main steam safety relief valves, reactor recirculation sample valves, recirculation pump seal water control valves and other components. This is not practical during plant operation or cold shutdowns. In order to perform leakage rate testing of the subject valves, test equipment would have to be setup. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

As identified above, the only practical method to perform a full-stroke closure exercise test of 1(2)IN043 and 1(2)IN044 is to perform a seat leakage type test. The ADS valves are required to be operable in operational conditions 1, 2 and 3 as required by Technical Specification 3.4.4. In order to manipulate the test connection valves and block valves to their proper position to perform a leakage rate test of the subject valves, the un-regulated gas supply to the ADS valves must be isolated. In order to perform leakage rate testing of the subject valves, test equipment would have to be setup. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised closed during refueling outages per section 4.5.2(c) of ISTC.

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Description

It is not practicable to full-stroke open the following check valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)C11-D001-114	2	C	Scram Discharge Header Check Valve

Function

There are 185 of each of the valve listed above, i.e., one for each of the 185 control rod drives.

1(2)C11-D001-114 (Scram Discharge Header Check Valve) has a safety function in the open direction to allow scram discharge exhaust flow to pass to the scram discharge volume.

Justification

The LCNS reactor vessels are equipped with bottom-entry hydraulically driven control rod drive mechanisms with high pressure water providing the hydraulic power. Each control rod (185 total) is operated by a hydraulic control unit (HCU), which consists of valves and an accumulator. The HCU is supplied charging and cooling water from the control rod drive pumps and the control rod operating cylinder exhausts to the scram discharge volume.

Various valves in the control rod drive system perform an active function in scramming the control rods to rapidly shut down the reactor. As outlined in Appendix A, NRC Staff Position 7 "Testing of Individual Scram Valves for Control Rods in Boiling Water Reactors" of NUREG-1482, the control rod drive system valves that perform an active function in scramming the reactor are the scram discharge volume vent and drain valves, scram inlet and outlet valves, the scram discharge header check valves, the charging water header check valves and the cooling water check valves.

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It is impractical to perform a full or part-stroke exercise of the scram discharge check valve to the open position during plant operation or during cold shutdowns. In order to perform a full or part-stroke exercise of the subject valves during power operation would require scramming each control rod during plant operation on a quarterly basis. This is not desirable and could cause localized reactor reactivity changes.

Verifying that the associated control rod meets the scram insertion time limits of Technical Specification 3.1.4 provides an acceptable method alternative method of detecting degradation for these valves. The scram insertion times of all control rods is demonstrated prior to exceeding 40% rated thermal power after each reactor shutdown that is greater than or equal to 120 days. Additionally, at least 10% of the control rods are tested, on a rotating basis at least once per 120 days cumulative operation in Mode 1, and individual control rods are tested following maintenance on or modification to the control rod or control rod drive system which could affect their scram insertion time.

Alternative Frequency

This valve will be full-stroke exercised open during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-22
(Rev. 01)

This Reactor Refueling Justification has been deleted.

This Refueling Justification for the HCU Accumulator Charging Water Check Valves is superseded by Cold Shutdown Justification CS-27.

Reactor Refueling Justification - RJ-23
(Rev. 0)

Description

The subject valves will be full-stroke exercised on a refueling outage basis in accordance with section 4.2.1 of OM-10.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F020	N	B	Main Steam Equalizing Line Upstream Valve
1(2)B21-F021	N	B	Main Steam Line Drain Stop to Main Cond. Valve
1(2)B21-F070	N	B	Main Steam Line Drain Upstr. Orifice Bypass Valve
1(2)B21-F071	N	B	Main Steam Line Drain Upstr. Orifice Bypass Valve
1(2)B21-F072	N	B	Main Steam Line Drain Upstr. Orifice Bypass Valve
1(2)B21-F073	N	B	Main Steam Line Drain Upstr. Orifice Bypass Valve
1(2)B21-F418A	N	B	Main Steam Auxiliary Stop Valve
1(2)B21-F418B	N	B	Main Steam Auxiliary Stop Valve

Function

The subject valves have no safety function identified. These valves are used to support the operation of the MSIV alternate leakage treatment path.

Justification

Section 4.2.1.1 of OM-10 requires that power operated valves be tested nominally every 3 months if they have a safety function(s) which require testing in accordance with the requirements of the Code. Since these valves are not ASME Code Class 1, 2 or 3, they are not required to be tested within the scope of the IST program in accordance with the requirements of 10 CFR 50.55a paragraphs (f)(1), (f)(2) and (f)(3). However, Section 2.2 of NUREG-1482 identifies that if a commitment is made to include a component in the IST program, the component is considered within the scope of the program.

As a result of a response to an NRC comment (Comment 2.C of letter dated February 4, 1996; Responses to NRC Comments-MSIV-LCS) concerning the reliability of the alternate leakage path (including boundary valves), a commitment was made to include the subject valves in the IST program. It was identified that these valves will be full-stroke exercised once each refueling outage. The inclusion of the subject valves within the scope of the IST program and exercised on a refueling outage frequency meets the commitment to the NRC.

Alternative Frequency

The subject valves shall be full-stroke exercised each refueling outage as identified in the above identified commitment.

Reactor Refueling Justification - RJ-24
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The test frequency for 1(2)FC044A/B was revised from refuel to every 3 months per the requirements of OM-10, Paras. 4.3.2.1 (ISTC 4.5.1).

Reactor Refueling Justification - RJ-25
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The test frequency for 1(2)C41-F001 A/B was revised from refuel to every 3 months per the requirements of OM-10, Para. 4.2.2.1.

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(Rev. 01)
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Description

It is not practicable to full-stroke open or close the subject valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)C41-F006	1	C	SBLC Injection Line Outboard Check Valve
1(2)C41-F007	1	AC	SBLC Injection Line Inboard Check Valve

Function

These valves have a safety function to open to allow the SBLC inventory or sodium pentaborate to pass to the reactor in order to shut it down in response to an Anticipated Transient Without Scram (ATWS) event.

These valves have a safety function to close to isolate containment penetration M-34 once either of the explosively actuated Squib Valves is actuated.

Justification

It is impractical to perform a full-stroke exercise of the subject valves to the open or closed position nominally every 3 months during plant operation or during cold shutdowns. In order to perform a full-stroke exercise of the subject valves to the open position, the SBLC system is injected into the reactor vessel. This would require actuation of the explosively actuated injection (squib) valves and the injection of the sodium pentaborate solution or demineralized water.

The squib valves (1(2)C41-F004A/B) are single use type valves that serve as a zero leakage seal between the SBLC and reactor coolant system and act as primary containment isolation valves. Once actuated, these valves and their used charges must be replaced and the leakage function re-established. This would render the SBLC system inoperable. Technical Specification 3.1.7 requires that the SBLC system be operable during operational conditions 1 and 2.

The injection of the sodium pentaborate solution during plant operation would cause an unnecessary reactivity excursion of the reactor possibly causing a plant shutdown. Injection of the sodium pentaborate solution during cold shutdowns would delay plant startup to restore the reactor coolant system water chemistry to the proper conditions.

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The injection of demineralized water during plant operation or cold shutdowns is also impractical. The injection of demineralized water would also require the actuation of either of the squib valves.

It is impractical to perform a closure test of the subject valves during plant operation or cold shutdowns. In order to perform a closure test of the subject valves, boundary valve 1(2)C41-F008 must be isolated. This valve is located inside of the drywell. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of isolating this valve to perform a closure test of the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Alternative Frequency

These valves will be full-stroke exercised to the open and closed position during refueling outages per section 4.5.2(c) of ISTC and Condition Monitoring Plan CM12.

Reactor Refueling Justification - RJ-27
(Rev. 01)

This Reactor Refueling Justification has been deleted.

1(2)G33-F039, RWCU Return Isolation Check Valves, are excluded from the Program since they do not perform a safety function in either the open or closed directions.

Reactor Refueling Justification - RJ-28
(Rev. 01)

Description

It is not practicable to full-stroke close the subject valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F040	2	AC	RCIC Turbine Exhaust Check Valve

Function

This valve has a safety function to open to allow exhaust steam from the RCIC turbine to be quenched in the Suppression Pool.

This valve has a safety function to close for containment isolation (Penetration M-76). This valve also has a closure function to prevent backflow from the suppression pool into the RCIC Pump turbine in the event that 1E51-F080 or 1E51-F086 is closed following shutdown of the RCIC System.

Justification

It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation or during cold shutdowns. The RCIC system is designed to assure adequate core cooling in the event of a reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without actuation of any of the Emergency Core Cooling System equipment. The RCIC is required to be operable whenever reactor pressure exceeds 150 psig in accordance with LCNS Technical Specification 3.5.3.

Closure verification of the subject valves can only be performed utilizing a leakage type test when the RCIC system is isolated and shutdown (inoperable). Additionally, performance of this test requires the installation of test equipment and the opening of various vent connections. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised to the closed position during refueling outages per Section 4.5.2(c) of ISTC.

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Description

It is not practicable to full-stroke open or closed the subject valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F065	1	AC	RCIC Injection Otbd Testable Check Valve
1(2)E51-F066	1	AC	RCIC Injection Inbd Testable Check Valve

Function

These valves have a safety function to open to allow RCIC injection flow to pass to the Reactor Vessel to mitigate the consequence of an accident.

These valves have a safety function to close to act as reactor coolant system pressure isolation valves.

Justification

It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation or during cold shutdowns. The RCIC system is designed to assure adequate core cooling in the event of a reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without actuation of any of the Emergency Core Cooling System equipment. The RCIC is required to be operable whenever reactor pressure exceeds 150 psig in accordance with LCNS Technical Specification 3.5.3.

These valves are located in the main injection line to the reactor vessel. Closure verification of the subject valves can only be performed utilizing a leakage type test when the RCIC system is isolated and shutdown (inoperable). In order to perform the leakage test, the reactor vessel must be shutdown and at atmospheric pressure and a blind flange installed in the main injection line between 1(2)E51-F066 and the reactor vessel (inside the drywell). Additionally, performance of this test requires the installation of test equipment and the opening of various vent connections.

Reactor Refueling Justification - RJ-29
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In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage. Additionally, the drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing a closure test of the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

It is impractical to perform a full or part-stroke exercise of the subject valves to the open position during plant operation. 1(2)E51-F065 and 1(2)E51-F066 are located in the main RCIC injection line to the reactor vessel downstream of the injection line isolation valve (1(2)E51-F013). In order to perform a full-stroke exercise of these valves, the RCIC pump must be started, the RCIC injection isolation valve opened and flow forwarded to the reactor vessel. The injection of RCIC system flow into the reactor vessel during power operations would inject large amounts of relatively cold water into the reactor vessel which could cause a reactivity excursion, level control problems and possible subsequent reactor scram. Per ISTC 4.5.2(a) open and closed tests need only be performed at an interval when it is practicable to perform both tests.

Alternative Frequency

These valves will be full-stroke exercised to the open and closed position during refueling outages per section 4.5.2(c) of ISTC.

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Description

It is not practicable to full-stroke open or closed the subject valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F082	2	C	RCIC Turbine Exh. Vac. Bkr Dwnstr. Check Valve
1(2)E51-F084	2	C	RCIC Turbine Exh. Vac. Bkr Upstr. Check Valve

Function

These valves have a safety function to open to equalize pressure between the suppression chamber atmosphere and the RCIC pump turbine exhaust header when the steam condenses and creates a vacuum.

These valves have a safety function to close to prevent bypass leakage of steam from the RCIC turbine exhaust header into the air space of the suppression chamber.

Justification

It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation or during cold shutdowns. The RCIC system is designed to assure adequate core cooling in the event of a reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without actuation of any of the Emergency Core Cooling System equipment. The RCIC is required to be operable whenever reactor pressure exceeds 150 psig in accordance with LCNS Technical Specification 3.5.3.

These valves are located in the vacuum relief line from the RCIC turbine exhaust piping to the suppression pool. The only practical method to actuate these check valves to the open position is to pressurize various segments of the volume between containment isolation valves 1E51-F080 and 1E51-F086, then vent off the pressure through another test connection. The only practical method to verify the closure capability of these valves is to perform a leakage type test. Both of the methods described above involve the closure of the isolation valves 1E51-F080 and 1E51-F086 which would render the RCIC system inoperable.

In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

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Alternative Frequency

These valves will be full-stroke exercised to the open and closed position during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-31
(Rev. 02)

Description

It is not practicable to full-stroke exercise the subject valves to the closed position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F028	2	C	RCIC Cndsr Vacuum Pump Dsch Check Valve

Function

This valve has a safety function in the closed position as a containment isolation valve for containment penetration M-81. Additionally, this valve isolates the non-safety related barometric condenser vacuum pump discharge piping from safety related containment penetration piping.

Note that this valve does not have a safety function in the open direction. To satisfy bi-directional testing requirements of ISTC 4.5.2(a), this valve is exercised open during quarterly testing.

Justification

It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation or during cold shutdowns. The RCIC system is designed to assure adequate core cooling in the event of a reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without actuation of any of the Emergency Core Cooling System equipment. The RCIC is required to be operable whenever reactor pressure exceeds 150 psig in accordance with LCNS Technical Specification 3.5.3.

These valves are located in the RCIC barometric condenser vacuum pump discharge line to the suppression pool. The only practical method to verify the closure capability of these valves is to perform a leakage type test. The performance of this leakage test requires the isolation of the vacuum pump discharge line isolation valve 1(2)E51-F069 and the setup of test equipment.

In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

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Alternative Frequency

These valves will be full-stroke exercised to the closed position during refueling outages per section 4.5.2(c) of ISTC.

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(Rev. 01)
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Description

It is not practicable to full-stroke exercise the subject valves to the closed position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1B21-F036A*	3	AC	SRV Accumulator Inlet Check Valve
1B21-F036B*	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036C	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036D	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036E	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036F	3	AC	SRV Accumulator Inlet Check Valve
1B21-F036G*	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036H	3	AC	SRV Accumulator Inlet Check Valve
1B21-F036J*	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036K	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036L	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036M	3	AC	SRV Accumulator Inlet Check Valve
1B21-F036N*	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036P	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036R	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036S	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036U	3	AC	SRV Accumulator Inlet Check Valve
1(2)B21-F036V	3	AC	SRV Accumulator Inlet Check Valve

* Valves A/B/G/J/N permanently removed on Unit 2 per DCP 9600382.

Function

These valves have a safety function to close to permit the SRV's to be operated in the "relief" mode of operation in the event of a loss of the drywell pneumatic system gas supply.

Justification

It is impractical to perform a full-stroke exercise of these valves to the closed position during plant operation or during cold shutdowns. The safety function of the SRV's is to prevent overpressurization of the reactor coolant system, which could lead to failure of the reactor coolant pressure boundary.

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The SRV's provide three main protection functions. These functions are overpressure protection, overpressure safety operation and depressurization operation. For power operated relief valve operation, each valve is provided with a pressure sensing device which operates at various setpoints. When the set pressure is reached, a solenoid air valve actuates the pneumatic piston/cylinder and linkage assembly to open the valves. The SRV can also be operated in the power actuated mode by remote-manual controls from the main control room. Each SRV is provided with its own pneumatic accumulator and inlet check valve. These accumulators assure that the valve can be opened following failure of their non-safety related air supply.

The accumulators, check valves and associated test connections are physically located inside of the drywell. The drywell at LCNS is inerted during plant operation as required by Technical Specification 3.6.3.2 to protect against a burn or explosion of hydrogen gas generated by the reactor core metal-water reaction as a result of a loss of coolant accident. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of performing a closure test of the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

ISTC requires that all check valves be exercise tested in both directions regardless of safety function. Open and close tests need only be performed at a frequency when it is practicable to perform both tests. Therefore, these valves will be exercised open on a refuel frequency.

Alternative Frequency

These valves will be full-stroke exercised to the closed position during refueling outages per section 4.5.2(c) of ISTC.

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Description

It is not practicable to full-stroke exercise the subject valves to the open position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B21-F040C	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040D	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040E	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040R	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040S	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040U	2	AC	ADS Accumulator Inlet Check Valve
1(2)B21-F040V	2	AC	ADS Accumulator Inlet Check Valve

Function

These valves have a safety function to close to permit the ADS valves to be operated in the event of a loss of the drywell pneumatic system gas supply (Ref. RJ-06).

This valve has a function to open to allow pressurized gas to pass to the ADS valve accumulator from the safety related nitrogen bottle banks to support the operation of its respective ADS valve.

Justification

It is impractical to perform a full-stroke exercise of these valves to the open position during plant operation or during cold shutdowns. The safety function of the SRV's is to prevent overpressurization of the reactor coolant system which could lead to failure of the reactor coolant pressure boundary.

In order to exercise these valves to the position required to fulfill their safety function, the ADS valves must be stroked and the ADS accumulators observed to be recharging. Exercising the ADS valves solely for the purpose of testing the subject check valves during plant operation is impractical. The ADS valves when opened at full operating pressure would cause a significant challenge to the plant operators. It is expected that reactor pressure will significantly decrease and that there will be a reduction in reactor inventory which could result in a plant scram.

Reactor Refueling Justification - RJ-33
(Rev. 01)
(Page 2 of 2)

It is impractical to exercise these valves to the open position during cold shutdowns. The only method to exercise these valves without entering the drywell is to stroke the individual ADS valves. Exercising the ADS valves for the sole purpose of performing an exercise test on the subject check valves would cause unnecessary cycling of the ADS valves and could lead to their premature failure. Section 2.4.5 of NUREG-1482 identifies that impractical conditions justifying test deferrals are those that could result in an unnecessary plant shutdown, cause unnecessary challenges to safety systems, place undue stress on components, cause unnecessary cycling of equipment, or unnecessarily reduce the life expectancy of the plant systems and components.

An alternative to the exercising of the ADS valves exists to test the subject valves but it would require an entry into the drywell to open a vent connection on the air accumulator. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of testing the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power.

Alternative Frequency

These valves will be full-stroke exercised to the open position during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification - RJ-34
(Rev. 01)

This Reactor Refueling Justification has been deleted.

1E12-F445/448/451, RHRSW Keep-Fill Cross Tie Check Valves, are tested every 3 months per requirements of ISTC, Para. 4.5.1.

Reactor Refueling Justification - RJ-35
(Rev. 01)

This Reactor Refueling Justification has been deleted.

The requirement to exercise the Main Steam Safety Relief Valves has been deleted. Reference Technical position TP-CWE-IST-98-03 for justification.

Reactor Refueling Justification - RJ-36
(Rev. 02)

Description

It is not practicable to full-stroke exercise the subject valves to the open or closed position nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)B33-F395	2	AC	Reactor Recirc Loop Process Sampling Inbd Bypass Check Valves

Function

1(2)B33-F395 have a safety function to open to relieve pressure between the containment isolation valves as a result of an accident.

1(2)B33-F395 have a safety function to close to act as as a containment isolation valve for penetration M-36.

Justification

It is impractical to perform an exercise test of the subject valves during plant operation or during cold shutdowns. The only practical method to exercise the subject valves is to perform a leakage rate test. In order to perform a leakage rate test to exercise the subject valves, an entry must be made into the drywell to setup test equipment and manipulate the block valves and test connection valves. Entry into the drywell during plant operation or cold shutdowns for the sole purpose of testing the subject valves would require that the drywell be de-inerted. Section 3.1.1.3 of NUREG-1482 identifies that de-inerting during cold shutdowns for the sole purpose of performing these tests is impractical because the time and effort needed to de-inert, re-inert and replace the lost nitrogen gas could delay the return to power. Additionally, performance of this test requires the installation of test equipment and the opening of various vent connections. In section 4.1.4 of NUREG-1482, it was determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valve to a refueling outage.

Alternative Frequency

These valves will be full-stroke exercised during refueling outages per section 4.5.2(c) of ISTC.

Reactor Refueling Justification – RJ-37
(Rev. 01)

Description

It is not practicable to full-stroke open the 1(2)E51-F030 valves nominally every 3 months or during cold shutdowns per the requirements of ISTC, Para. 4.5.1.

Affected Components

EPN	Class	Cat.	Description
1(2)E51-F030	2	C	RCIC Pump Sup Pool Suct Check Valve

Function

These valves have a safety function to open to allow RCIC injection flow to pass to the Reactor Vessel to mitigate the consequence of an accident.

1(2)E51-F030 have a safety function to close to prevent the backflow of water from the Cycled Condensate Storage Tank to the suppression pool in the event that the upstream motor operated valve 1(2)E51-F031 is opened.

Justification

It is not practical to full stroke exercise this valve quarterly or during Cold Shutdowns. Full opening requires a full-flow test of the RCIC Pump while taking a suction from the Suppression Pool. Full flow testing of the RCIC Pump is performed quarterly by LOS-RI-Q3 or LOS-RI-Q5 in the CY Tank to CY Tank lineup. To return flow to the Suppression Pool would require installing the blind side of a spectacle flange in the return line to the CY Tank in order to maintain Primary Containment integrity, opening locked closed, manually operated Containment Isolation Valves 1E51-F362 and 1E51-F363 and lifting a lead which removes the interlock which keeps 1E51-F022 and 1E51-F059 closed if 1E51-F031 is open.

This valve is partially stroked quarterly after the full flow pump test by closing the return valves to the CY Tank which causes min flow bypass valve 1E51-F019 to open, then shifting suction to the Suppression Pool. Full open testing is performed during startup after refueling by lining up from the Suppression Pool through the full flow test line to the CY Tank. This transfer requires Chemistry Department approval.

Alternative Test

These valves will be full-stroke exercised open during refueling outages per section 4.5.2(c) of ISTC.

ATTACHMENT 9

STATION TECHNICAL POSITION INDEX

Designator	Description	Revision
TP-01	Deleted	N/A
TP-02	Water Leg Pump Check Valves	0
TP-03	Deleted	N/A
TP-04	Seat Leakage Testing per 10 CFR 50 Appendix J	01
TP-05	Deleted	N/A
TP-06	Control Rod Drive Cooling Water Check Valves	01
TP-07	Testing of Valves with both active and Passive Safety Functions.	0

ATTACHMENT 10

STATION TECHNICAL POSITIONS

Technical Position - TP-01
(Rev. 0)

This technical position regarding the limiting values of full-stroke time for power operated valves has been deleted. This information is included in the IST program administrative procedure.

Technical Position - TP-02
(Rev. 0)

Title

Water Leg Pump Check Valves

Issue Discussion

The function of each Water Leg Pump (WLP) is to maintain the associated ECCS pump discharge lines filled and pressurized when ECCS is in standby. Without the WLP the discharge lines could depressurize and drain. This condition could lead to severe water hammer of the discharge piping in the event the ECCS pump is required to operate. The ECCS lines are provided with instrumentation to provide continuous pressure monitoring to ensure that the discharge lines are filled and pressurized within allowable pressure limits as delineated in plant Technical Specifications. There are no specific flow requirements associated with the WLP discharge check valves: the design basis of the water leg pumps is to maintain the associated ECCS system pressurized within allowable pressure limits.

Position

Pressure maintenance is considered adequate to monitor the opening capability of these valves, but because of the essentially static flow conditions, the system is vented through a high point vent (flow is verified) to ensure the valves are exercised open and capable of passing flow. This is considered to be an acceptable exercise test of the discharge check valves because the check valves are exercised to the position required to fulfill their function in accordance with section 4.3.2.2 (a) of OM-10.

The WLP discharge check valves are closure tested by starting the associated ECCS pump, verifying full flow requirements are met, and measuring WLP discharge pressure. Once measured, the manual stop valve downstream of the check valve will be closed and the WLP discharge pressure measured again. If the difference between the two discharge pressures is greater than 1.0 psid, then the WLP discharge check valve may not be closed.

The following check valves will be tested as described above:

EPN	Class	Cat.	Description
1(2)E22-F007	2	C	HPCS Water Leg Pump Discharge Check
1(2)E21-F033	2	C	LPCS Water Leg Pump Discharge Check
1(2)E12-F084A	2	C	LPCS Water Leg Pump Discharge Check
1(2)E12-F084B	2	C	RHR Water Leg Pump Discharge Check
1(2)E12-F084C	2	C	RHR Water Leg Pump Discharge Check
1(2)E51-F061	2	C	RCIC Water Leg Pump Dsch Check Valve

Technical Position - TP-03
(Rev. 0)

This technical position regarding the limiting values of full-stroke time for power operated valves has been deleted. This information will be added to the IST program administrative procedure.

Technical Position - TP-04
(Rev. 01)

Title

Seat Leakage Testing per 10 CFR 50 Appendix J

Issue Discussion

Category A containment isolation valves are to be tested as required by ASME/ANSI OM-10 and 10CFR50 Appendix J. Technical Specification SR3.6.1.1.1 surveillance testing for measuring valve leakage is consistent with the requirements of 10 CFR 50 Appendix J.

ASME/ANSI OM-10 requires testing of containment isolation valves using 10CFR50 Appendix J acceptance criteria, but also requires leakage criteria for each valve or group of valves.

Position

Primary containment Category A isolation valves will be tested in accordance with the requirements of Technical Specification 3.6.1.1.1 and 10CFR50 Appendix J. Technical Specification SR3.6.1.1.1 surveillance testing for measuring valve leakage is consistent with the requirements of Appendix J to 10 CFR 50.

Maximum leakage rates will be established for each valve or group of valves. When valves are tested in parallel, a leakage criterion will be established for the combined leakage of the valves.

Technical Position - TP-05
(Rev. 01)

This Technical Position regarding skid mounted components has been superseded by Corporate Technical Position TP-EXE-IST-00-04.

Technical Position - TP-06
(Rev. 01)

Title

Control Rod Drive Cooling Water Check Valves (typical of 185)
(1C11-D001-138)

Issue Discussion

These valves are non-ASME Safety Class valves which function as a part of each Control Rod Drive Hydraulic Control Unit (HCU). As identified in NRC Staff Position 7 " Testing Individual Scram Valves for Control Rods in Boiling Water Reactors" of Appendix A of NUREG-1482 (also Generic Letter 89-04), industry experience has shown that normal control rod motion may verify the cooling water header check valve moving to its safety function position. This can be demonstrated because rod motion may not occur if this check valve were to fail in the open position. When a drive is in motion, pressure in the manifold to the drive insert riser is higher than the cooling water pressure and the check valve closes to stop the flow of cooling water to the drives.

Position

Generic Letter 89-04, Position 7, recognizes the ability to conduct normal rod motion as providing verification that this valve moves to its safety related position. A single-notch rod insertion surveillance is performed for all withdrawn control rods not required to have their directional control valves disarmed in accordance with LOS-AA-W1. This test is performed weekly in accordance with Technical Specification Surveillance Requirement 3.1.3.2 when above the low power setpoint of the Rod Worth Minimizer. Non-safety open exercise testing per the requirements of ISTC 4.5 is not applicable to these skid mounted valves [TP-EXE-IST-00-04].

Technical Position - TP-07
(Rev. 0)

Title

Testing of power operated valves with both active and passive safety functions that require stroke time testing.

Issue Discussion

The IST Program requires valves to be exercised to the position(s) required to fulfill their safety function(s). In addition, valves with remote position indication shall have their position indication verified. The Code does not restrict position indication to active valves.

Position

Several valves included in the plant are designed to perform passive safety functions during accident conditions and then based on plant accident response are designed to change positions to perform another (active) function. Once in their final position, there exist no conditions in which they would be required to be placed in their original passive position.

These valves are typically emergency core cooling system valves, which require changing position during different phases of the accident. After the original passive safety function (e.g. provide flow path) is performed, the valves are repositioned to perform the active safety function (e.g. provide containment isolation). The valves are not required to return to their original position.

Based on ASME Inquiry OMI 98-07, these valves with passive functions in one direction and active in the other, will be exercised to only their active position. If these valves have position indication, the position indication verification will include verification of both positions.

ATTACHMENT 11

CORPORATE TECHNICAL POSITION INDEX

Designator	Description	Date
TP-CWE-IST-98-01, Rev 0	Instrument Accuracy Requirements for Pump Testing	9/28/98
TP-EXE-IST-98-02, Rev. 4 (EXE98-02)	Excess Flow Check Valve Testing	6/8/01
TP-CWE-IST-98-03, Rev. 0 (CWE98-03)	Elimination of PIT and Exercise Testing for Safety and Relief Valves	1/20/99
TP-CWE-IST-99-01, Rev. 0	Repair Activities for Valves Exceeding Seat Leakage Test Acceptance Criteria	2/1/99
TP-CWE-IST-00-02, Rev. 0 (CWE00-02)	Check Valve Condition Monitoring	8/14/00
TP-EXE-IST-00-04, Rev. 1 (EXE00-04)	Classification of Skid Mounted Components	6/8/01
TP-EXE-IST-01-01, Rev. 0 (EXE01-01)	Non-Safety Check Valve Exercise Testing by Normal Operations	4/9/01
TP-EXE-IST-01-02, Rev. 0	Thermal Relief Valve Scoping	4/27/01
TP-EXE-IST-01-03, Rev. 0	Justification for Exception to Exercise Check Valves after Reassembly	4/9/01

ATTACHMENT 12

CORPORATE TECHNICAL POSITIONS

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September 28, 1998

ComEd IST Program Technical Position
Instrument Accuracy Requirements for Pump Testing

Purpose

This paper clarifies the instrument accuracy requirements of OM-1987 with OMa-1988, Part 6, Paragraph 4.6.1.1 and Table 1. It is applicable to pump testing at all ComEd stations. The need for this position was identified at Quad Cities during the 1998 AE Inspection during which the accuracy of pressure and flow gauges used for pump testing was called into question. This position is only applicable to Section XI testing of pumps. This is an interim position until it is validated by the ASME OM-6 Working Group through the inquiry process.

Position

- The accuracy requirements of OM-1987 with OMa-1988, Part 6, Paragraph 4.6.1.1 and Table 1 apply to the accuracy to which installed instruments are calibrated.
- For instrument loops, the accuracy requirements apply to the accuracy to which the instrument loop is calibrated. If the instrument loop is not calibrated as a loop, then a loop accuracy calculation is performed.
- To calculate loop accuracy, either the reference accuracies for individual components or the calibration accuracies for the individual components should be summed using square root of the sum of squares.

Justification.

This position is based on a review of code interpretations and definitions in recent versions of the Code. Discussions with ASME OM-6 working group members indicate that this position is consistent with industry practice and code intent. The purpose of the accuracy requirements in the code is to ensure that measurements can be used to trend pump performance and identify degradation. Calibration of instruments to the criteria in Table 1 of OM-6 provides the level of quality and assurance to fulfill this purpose. A code inquiry will be issued to formalize this position and change the status of this technical position to final.

Interpretation 91-3 states that Table 1 of Part 6 applies only to the calibration of the instrument. (This was in response to a question on whether the final indication of flow rate on an analog instrument must be within 2% of full scale of actual process flow rate, taking into account attributes such as orifice plate tolerances, tap locations, and process temperatures.)

Question 1 of Interpretation 95-07 states that it is the intent of Part 6 "to consider only the instrument's reference accuracy, such as supplied by the instrument manufacturer, in determination of instrument loop accuracy." An instrument loop is defined in the code as "two or more instruments or components working together to provide a single output." It was this interpretation that led to the assumption during the AE inspection that the only permissible way to determine loop accuracy was to combine reference accuracies of the individual loop components using square root of the sum of squares. However, discussions with OM-6 working group members indicate that the intent of this interpretation was to

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clarify that loop accuracy calculations did not need to consider environmental effects, process effects, and vibration effects on loop accuracy (see Question 2 of Interpretation 95-07).

Section 5.5.4 of NUREG 1482 discusses the accuracy of flow rate instrument loops. It states that the accuracy for analog instruments specified in Section XI IWP and OM-6 applies only to the calibration of the instruments.

Starting with the OM-1994 addendum of the code, the definition of instrument accuracy is clarified to read, "the allowable inaccuracy of an instrument loop based on the square root of the sum of the square of the inaccuracies of each instrument or component in the loop when considered separately. Alternatively, the allowable inaccuracy of the instrument loop may be based on the output for a known input into the instrument loop." From this definition, it is clear that calibration of an instrument or instrument loop to the OM Code accuracy criteria meets the Code requirements.

References

1. US NRC letter to Commonwealth Edison (Oliver Kingsley) dated May 6, 1998; "Quad Cities Nuclear Power Station – Design Inspection (NRC Inspection Report Nos. 50-254/98-201 and 50-265/98-201)"; Section E1.2.3.2a (Instrument Uncertainty – ASME XI)
2. ASME OM Code-1987 with OMa-1988, Part 6; "Inservice Testing of Pumps in Light Water Reactor Power Plants"
3. ASME OM Code-1995, Subsection ISTB; "Inservice Testing of Pumps in Light Water Reactor Power Plants"
4. OM Code-1990 Interpretations and OM Code-1995 Interpretations
5. NUREG-1482; "Guidelines for Inservice Testing of Nuclear Power Plants"

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Exelon IST Program Technical Position
Excess Flow Check Valve Testing

Purpose

The purpose of this position paper is to eliminate leakage testing and clarify open testing for excess flow check valves. Closure testing at pressures less than design pressure is adequate to meet IST requirements. Open testing is satisfied in the course of normal plant operations. This position supports goals to reduce outage duration by eliminating unnecessary critical path work. This position is only applicable to Dresden, LaSalle and Quad Cities Stations.

Position

- No leakage testing of excess flow check valves is required to meet IST and Appendix J requirements.
- Closure testing of excess flow check valves can be performed at all system pressures between 600 psig and the system design basis pressure. Acceptance criteria for the test shall be audible click denoting valve closure or significant reduction in flow. For LaSalle excess flow check valves, position indication testing may be performed in conjunction with closure testing at reduced system pressure.
- Open (non-safety direction) exercise testing is satisfied through normal plant operations.

Justification.

- Excess flow check valves (EFCV) are utilized in BWR containments to limit the release of fluid in the event of an instrument line break.
- These valves are classified as containment isolation valves. However, isolation of instrument lines during a LOCA is not prudent, since these instrument lines provide safety functions for reactor protection and containment isolation which need to be operable during a LOCA. Consequently, the valve disks are drilled to intentionally allow leakage past the valve.
- ASME OM Code-1987 with OMa-1988, Part 10 defers to Appendix J of 10CFR50 for leakage testing of containment isolation valves.
- In reference 1, the NRC provides Quad Cities with an exemption from Appendix J testing of instrument lines as long as the these lines are not isolated during 10-year ILRT tests.
- LaSalle UFSAR Table 6.2.21 indicates that instrument line pressure integrity is verified during periodic Type A (ILRT) testing. No requirement for Type C (LLRT) valve leakage testing exists. The analysis for Instrument Line Break in Section 15.6.2 does not take any credit for excess flow check valves.

Technical Specifications

- LaSalle, Dresden and Quad Cities Tech Spec SR 3.6.1.3.8 requires the excess flow check valves (EFCVs) to be demonstrated to be operable at least once per 24 months by verifying each EFCV actuates to the isolation position on an actual or simulated instrument line break.
- The Dresden and Quad Cities TS Bases state; The test is performed by blowing down the instrument line during an inservice leak or hydrostatic test and verifying a distinctive 'click' when the poppet valve seats, or a quick reduction in flow.

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- Dresden UFSAR 6.2.4.2.1 states; Instrument lines are exempt from Type C testing provided they are not isolated from containment during the performance of a Type A ILRT.
- Check valves are designed to close when the flow rate past the valve disk is sufficient to pull the disk to the closed position. System pressure has little impact on check valve performance during the closure test. In fact, a higher system pressure is likely to create a higher flow rate through the valve while it is open. Therefore, testing the valves at lower than design pressure should be conservative with respect to closure capability.
- The LaSalle excess flow check valve drawings indicate that this valve is designed to fully close at only 10 psid differential pressure. Therefore, past problems with dual indication during closure tests were not caused by testing at less than design pressure.
- A review of industry practices indicates that several other utilities only require closure testing of the subject valves. These utilities specify minimum test pressures between 200 psig and 600 psig to ensure flow rates and pressure across the valves are sufficient to allow satisfactory performance.
- Non-safety direction (open) testing requirements of OMa-1996 ISTC 4.5 are satisfied in the course of normal plant operations (Ref. 3) by proper operation of associated instruments. At LaSalle, position indication testing further verifies opening of the poppet post closure testing.

References

1. USNRC letter from Domenic Vassallo to Dennis Farrar dated June 12, 1984.
2. ASME OM Code-1987 with OMa-1988, Part 10, "Inservice Testing of Valves in Light-Water Reactor Power Plants".
3. Exelon IST Program Technical Position, TP-EXE-IST-01-01, "Non-Safety Check Valve Exercise Testing by Normal Operations".
4. ASME OM Code-1995 with OMa-1996, ISTC 4.5, "Inservice Exercising Tests for Category C Check Valves".

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ComEd IST Program Technical Position
Elimination of PIT and Exercise Testing for Safety and Relief Valves

Purpose

The purpose of this technical position is to clarify that no Inservice Testing Program requirement exists for performing Position Indication Tests and Exercise tests of safety and relief valves at ComEd stations.

Background

Inservice Testing Programs at ComEd stations currently require that safety and relief valves be tested in accordance with both OM-10 (IVW-3000 for Dresden) and OM-1 requirements. Consequently, Exercise Tests are performed on ComEd relief valves in accordance with OM-10 / IWV-3000. For valves with auxiliary operating devices, stroke times are measured when exercising the valves. In addition, Position Indication Tests are performed for safety and relief valves with remote position indication.

Position

- OM-10 (ISTB) defers to OM-1 (OM Code Appendix I) for relief valve testing requirements.
- OM-1 and later editions of the ASME OM Code do not require Exercising Tests for safety and relief valves.
- Exercising at a frequency greater than OM-1 setpoint testing shall be performed when required by Tech Specs or when valve performance history indicates that exercising is needed to keep the valve setpoint from increasing. However, stroke timing during exercising is not required, unless a commitment to measure stroke time has been made to the NRC.
- OM-1 and later editions of the ASME OM Code do not require Position Indication Tests for safety and relief valves.

Justification

- NUREG 1482, Section 4.3.9 states "As licensees began applying the requirements of OM-1, it became clear that clarifications were needed. The OM working group has clarified several issues in the 1994 addenda to the 1990 OM Code. The clarifications discussed below may be used without further NRC approval. Other clarifications identified by licensees may also be used without further NRC approval if it is determined to be clarification only and is documented in the IST program or test procedures, as necessary."
- In the ASME OMa 1996 edition of the Code, a new paragraph was added at the end of Section ISTC section 1.2. This paragraph states, "Category A and B Safety and

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- Relief valves are excluded from the requirements of ISTC 4.1, Valve Position Verification and ISTC 4.2, Inservice Exercising Test."
- Summary of Public Workshops, Section 2.4.18 states, "Licensees should note that the OM Code has been revised (i.e., in the 1996 Addenda) to clarify that Category A and B safety and relief valves are excluded from the requirements of ISTC 4.1, Valve Position Verification, and ISTC 4.2, Inservice Exercising Test. Therefore, these valves will only be required to be tested in accordance with Appendix I. As discussed in NUREG-1482, Section 4.3.9, clarifications may be used without further NRC approval." (emphasis added)
- A comparison of Appendix I in ASME OM 1995 with Appendix I in ASME OMa 1996 indicates that no new testing requirements were added as replacements for ISTC 4.1, Valve Position Verification and ISTC 4.2, Inservice Exercising Test. Consequently, it is appropriate to classify the subject 1996 code change as a clarification.
- Stroke time measurements have not benefited ComEd in preventing safety and relief valve failures. In fact, exercising tests have been attributed to subsequent seat leakage failures, especially for fast stroking relief valves. Consequently, exercising is only appropriate when valve performance history indicates that exercising on a frequency greater than OM-1 setpoint testing is needed to prevent setpoint elevation due to adhesion between the seat and disk.
- Position indication testing serves little purpose for valves that are not susceptible to mispositioning. Position indication testing at ComEd has not identified problems with stuck open relief valves being remotely indicated as closed.

References

1. ASME OM Code-1987 with OMa-1988, Part 10; "Inservice Testing of Valves in Light Water Reactor Power Plants"
2. ASME OM Code-1987, Part 1; "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices"
3. ASME OM Code-1995, Subsection ISTC; "Inservice Testing of Valves in Light Water Reactor Power Plants" and Appendix I; "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Plants"
4. ASME OMa Code-1996, Subsection ISTC; "Inservice Testing of Valves in Light Water Reactor Power Plants" and Appendix I; "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Plants"
5. Summary of Public Workshops Held in NRC Regions on Inspection Procedure 73756, "Inservice Testing of Pumps and Valves," And Answers to Panel Questions on Inservice Testing Issues; published July 18, 1997
6. NUREG-1482; "Guidelines for Inservice Testing of Nuclear Power Plants"

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Assumptions
None

Status
Final

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ComEd IST Program Technical Position
Repair Activities for Valves Exceeding Seat Leakage Test Acceptance Criteria

Purpose
The purpose of this technical position is to clarify code requirements for repairing valves that exceed seat leakage test acceptance criteria during Inservice Testing.

Background
On February 1, 1999, Dresden station performed testing on CRD check valves 3-0399-593 and 3-0399-594. The measured leakage rate of >2.0 gpm significantly exceeded the acceptance criteria of 0.01 gpm and the valves were declared inoperable. After flushing the line containing the valves, the measured leakage through the valves was 0 gpm. These 2 ½" spring-assisted lift-check valves were installed during the last Dresden Unit 3 outage and did not fail the previous IST seat leakage tests (refueling outage test periodicity).

Position
Flushing of lines containing valves that fail seat leakage testing requirements is considered sufficient corrective action provided the following conditions are met:
- A review of past valve performance history does not indicate seat leakage failures of the valves are repetitive.
- The seat leakage criterion is met following the flushing evolution.

Justification
- The ASME OM-10 Code and the AMSE IWV-3000 Code require that valves failing seat leakage tests be repaired or replaced.
- NUREG 1482 and the 1997 Inservice Testing Workshop Questions and Answers do not provide guidance on what activities constitute repair. However, NUREG 1482 states that repair activities for relief valve setpoint test failures are not limited to Section XI repair activities. (A Section XI repair or replacement activity is defined as a repair by welding, brazing, or metal removal of the pressure-retaining parts of a component or the replacement of pressure-retaining parts.) It is appropriate to assume that the same logic applied by the NRC in determining appropriate corrective actions for relief valve setpoint drift can be used to determine appropriate corrective actions for seat leakage failures.
- Debris on valve seats is a common cause of valve seat leakage problems. Flushing of lines is an effective method of removing debris that is preventing a valve from passing the seat leakage acceptance criteria. Past experiences with MSIVs at Quad Cities and other valves at ComEd stations support the use of flushing to eliminate isolated cases of seat leakage.

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- Repeated seat leakage failures indicate that the installed valve design is incompatible with system conditions (such as fluid cleanliness). Consequently, repetitive correction of seat leakage problems by flushing is not appropriate.
- Corporate Engineering notes that the Dresden valves have not previously experienced failures during IST testing. Therefore, flushing is an appropriate corrective actions for these valves.

References

1. ASME OM Code-1987 with OMa-1988, Part 10; "Inservice Testing of Valves in Light Water Reactor Power Plants"
2. ASME Section XI Article IWV-3000, "Test Requirements"
3. NUREG-1482; "Guidelines for Inservice Testing of Nuclear Power Plants"

Assumptions

None

Status

Final

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August 14, 2000
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ComEd IST Program Technical Position
Check Valve Condition Monitoring

Purpose
The purpose of this technical position is to provide the Corporate Inservice Testing (IST) Program position on implementing a check valve condition monitoring program. The condition monitoring process allows certain flexibility in establishing the types of tests, examination, and preventative maintenance activities and their associated intervals, when justified based on the valve's performance and operating condition.

Background
10CFR50.55a was revised 11/22/99 to endorse the ASME OMa-1996 Code which includes provisions (Appendix II) for implementing a check valve condition monitoring program for IST Check valves. A letter dated April 18, 2000 was sent to the NRC requesting approval to implement the check valve portion of the ASME OM Code-1995 Edition, 1996 Addenda, at all ComEd Nuclear Stations. By letter dated June 7, 2000 the NRC approved ComEd to implement ASME OMa-1996 and the modifications required to implement Appendix II for all check valves at all ComEd Stations. Corporate Engineering Programs issued Nuclear Engineering Standard NES-MS-08.5, Condition Monitoring for Inservice Testing of Check Valves on June 30, 2000.

Position
- All ComEd Stations will perform check valve testing in accordance with the ASME OMa-1996 Code, including Appendix II.

- Full implementation of the ASME OMa-1996 Code will be completed by September 1, 2001 (Reference 8 and 9).

- Check valves not included in the Appendix II program will be tested to the requirements of ASME OMa-1996 Code, ISTC 4.5.1 through 4.5.4.

- Referencing this technical position in the program plan indicates that test requirements for a check valve are supported by a condition monitoring plan meeting Reference 6 requirements.

- The following modifications to Appendix II are required by the NRC (Reference 9 and 10).

  - Valve opening and closing functions must be demonstrated when flow testing or examination methods (e.g., nonintrusive or disassembly and inspection) are used.

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- The initial interval for tests and associated examinations will not exceed two fuel cycles or 3 years, whichever is longer. Any extension of this interval will not exceed one fuel cycle per extension with the maximum interval not to exceed 10 years. Trending and evaluation of existing data will be used to reduce or extend the time interval between tests.

- If the Appendix II condition monitoring program is discontinued, then the requirements of ISTC 4.5.1 through 4.5.4 must be implemented.

- Check valve condition monitoring plans shall be developed in accordance with Nuclear Engineering Standard NES-MS-08.5, Condition Monitoring for Inservice Testing of Check Valves.

Justification

- The NRC recently endorsed the ASME OM Code-1995 Edition, 1996 Addenda (Reference 3 and 10) which allows the use of Appendix II as an alternative to certain check valve testing requirements in Subsection ISTC of the OM Code.

- ComEd implementation of ASME OMa-1996 (including the modifications required to implement Appendix II) for all check valves at all ComEd Stations was approved by NRC letter dated June 7, 2000.

- Implementation of condition monitoring for check valves provides the opportunity to optimize check valve testing requirements for valves in the IST program as discussed in Reference 6.

References

1. NSP-ER-3015, "Inservice Testing Program Implementing Procedure"

2. ER-AA-321, "Administrative Requirements for Inservice Testing"

3. ASME OMa Code-1996 Addendum to OM Code-1995 Edition, Appendix II, "Check Valve Condition Monitoring Program"

4. Nuclear Engineering Standard NES-MS-08.2, "Inservice Testing Plan Format and Content"

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5. Nuclear Engineering Standard NES-MS-08.1, "Inservice Testing Bases Document Format and Content"

6. Nuclear Engineering Standard NES-MS-08.5, "Condition Monitoring for Inservice Testing of Check Valves"

7. ER-AA-400, "Check Valve Monitoring and Preventive Maintenance Program"

8. ComEd letter dated April 18, 2000 to the NRC, "Request to implement a Portion of the 1995 Edition and the 1996 Addenda of the ASME Code for Operation and Maintenance of Nuclear Power Plants Regarding Appendix II, "Check Valve Condition Monitoring Program"

9. Nuclear Regulatory Commission letter dated June 7, 2000, "Approval to Implement a Check Valve Inservice Testing Program Using ASME OM Code-1995 Edition, OMa-1996 Addenda at the Commonwealth Edison Company Nuclear Stations (TAC Nos. MA8703, MA8704, MA8715, MA8716, MA8717, MA8718, MA8803, MA8804, MA8733, and MA8734)

10. Nuclear Regulatory Commission Final Rule 10CFR Part 50 "Industry Codes and Standards; Amended Requirements," (64 FR 63892) dated September 22, 1999

Assumptions
None

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Final

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Exelon IST Program Technical Position
Classification of Skid Mounted Components

Purpose

The purpose of this technical position is to clarify requirements for classification of various components including Diesel Oil Transfer Pumps as skid mounted components, and to clarify testing requirements of check valves designated as skid mounted.

Background

The ASME Code allows classification of some components as skid mounted when their satisfactory operation is demonstrated by the performance of major components. Testing of the major component is sufficient to satisfy IST testing requirements for skid mounted components. In the 1996a addenda to the ASME OM Code (endorsed by 10CFR50.55(a) in October 2000), the term skid-mounted was clarified by the addition of ISTA paragraph 1.7:

> ISTA 1.7 Definitions
>
> *Skid mounted components and component sub assemblies* – components integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these components are supplied by the manufacturer of the major component. Examples include: diesel skid-mounted fuel oil pumps and valves, steam admission and trip throttle valves for high-pressure coolant injection or auxiliary feedwater turbine-driven pumps, and solenoid-operated valve provided to control the air-operated valve.

This definition was further clarified in the 1998 ASME OM Code:

> ISTA-2000 DEFINITIONS
>
> *Skid mounted pumps and valves* – pumps and valves integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these pumps and valves are supplied by the manufacturer of the major component. Examples include:
>
> (a) diesel fuel oil pumps and valves;
> (b) steam admission and trip throttle valves for high-pressure coolant injection pumps;
> (c) steam admission and trip throttle valves for auxiliary feedwater turbine driven pumps;
> (d) solenoid-operated valves provided to control an air-operated valve.

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In section 3.4 of NUREG 1482, the NRC supports the designation of components as skid mounted:

> The staff has determined that the testing of the major component is an acceptable means for verifying the operational readiness of the skid-mounted and component subassemblies if the licensee documents this approach in the IST Program. This is acceptable for both Code class components and non-Code class components tested and tracked by the IST Program.

Subsection ISTC of OMa-1996, "Inservice Testing of Valves in Light-Water Reactor Power Plants", Paragraph 1.2, "Exclusions" states:

> "....Skid-mounted valves and component subassemblies are excluded from this Subsection provided they are tested as part of the major component and are determined by the Owner to be adequately tested."

Position

The 1998 ASME OM Code definition of skid mounted should be used for classification of components in the Exelon Inservice Testing Program. In addition, for a component to be considered skid mounted:

- The major component associated with the skid mounted component must be surveillance tested at a frequency sufficient to meet ASME OM Code test frequency for the skid mounted component.
- Satisfactory operation of the skid mounted component must be demonstrated by satisfactory operation of the major component.
- The IST Bases Document should describe the bases for classifying a component as skid mounted, and the IST Program Plan should reference this technical position for the component.

For Stations committed to the 1996 addenda of the 1995 OM Code for Inservice Exercise Testing of Category C Check Valves (ISTC 4.5 and Appendix II), testing as required by ISTC 4.5 does not apply for check valves designated as skid mounted.

Justification

Classification of components as skid mounted eliminates the need for testing of sub components that are redundant with testing of major components provided testing of the major components demonstrates satisfactory operation of the "skid mounted" components.

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As recognized in section 3.4 of NUREG 1482:

> Various pumps and valves procured as part of larger component subassemblies are often not designed to meet the requirements for components in ASME code classes 1, 2, and 3.

References

All references are called out in the text of the technical position.

Assumptions

None

Status

Final