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TABLE OF ABBREVIATIONS

CLASSIFICATION

<u>Duke System Valve Class</u>	<u>Code Design Criteria</u>	<u>Designed for Seismic Loading</u>	<u>ANS Safety Class</u>
A	Class 1, ASME Section III, 1971	Yes	1
B	Class 2, ASME Section III, 1971	Yes	2
C	Class 3, ASME Section III, 1971	Yes	3
D	Class 2, ASME Section III, 1971	No	2
E	ANSI B31.1.0 (1967)	No	NNS
F	ANSI B31.1.0 (1967)	Yes	NNS
G	ANSI B31.1.0 (1967)	No	---
H	Duke Power Company Specification	No	---

LEGEND

LT	- Leak Test
MTO	- Movement Test Open
MTC	- Movement Test Closed
MTO,C	- Movement Test Open and Closed
Q	- Quarterly
CS	- Cold Shutdown
RF	- Refueling Outage
ST	- Stroke Time (cycle and time)
SP	- Setpoint
PC	- Procedure Check
CIV	- Containment Isolation Valve
PIV	- Pressure Isolation Valve
RR	- Relief Request
TS	- Technical Specification
CL	- Class
CAT	- Category
FS	- Fail Safe

Quarterly (Q)

Testing will be performed at least once per three (3) months.

Refueling Outage (RF)

Testing will be performed when the unit is shut down for refueling. Safety valves will be tested periodically per the testing schedule defined in ASME Subsection IWV-3510. Testing may be done while in No Mode as well as Modes 3, 4, 5, and 6.

Refueling Outage (RF*)

Valve will normally be tested during refueling outages, not to exceed 24 months per Appendix J to 10CFR50.

Refueling Outage (RF#)

Valve will normally be tested on a routine basis via a sample valve disassembly program (1 valve from a group of identical valves under similar system conditions). Failure of one valve of the group during a refueling outage will result in all remaining valves of the group being tested during that outage.

Setpoint (SP)

Valve will be tested to verify that it will relieve pressure at its specified setpoint. Testing will be performed per the requirements of IWV-3510.

Fail Safe (FS)

Valve will be tested to verify it will reposition to its design safe position upon loss of control air per IWV-3415.

RELIEF/JUSTIFICATION: RR-CA1

VALVE: 2CA-165, 2CA-166

FLOW DIAGRAM: MC-2592-1.1

CATEGORY: C

CLASS: C

FUNCTION: Prevents backflow from Aux. Feedwater System to Nuclear Service Water System

TEST REQUIREMENT: Full stroke exercise quarterly

BASIS: Neither full nor partial flow can be put through these valves without contaminating the Auxiliary Feedwater System with raw water. No means exist for alternate testing techniques using air or any other medium.

ALTERNATE TESTING: At least one of these two valves will be disassembled and full stroked during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive refueling outages. Failure of one valve to properly full stroke during a refueling outage will result in the remaining valves being disassembled and full stroked during that outage.

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RELIEF/JUSTIFICATION: RR-IA1

VALVE: 2IA-5360, 2IA-5370, 2IA-5380, 2IA-5390

FLOW DIAGRAM: MC-2499-IA1

CATEGORY: AC

CLASS: B

FUNCTION: Check containment pressure on reactor building side of airlock and relieve to containment to prevent overpressurization of airlock.

TEST REQUIREMENT: Verify proper valve movement.

BASIS: These valves are double isolation check valves and are arranged in series. There is no means to leak test the valves individually.

ALTERNATE TESTING: These valves will be verified closed by leak testing performed in accordance with Appendix J. The valves will be tested in series, not individually.

RELIEF/JUSTIFICATION: RR-NB1

VALVE: 2NB-262

FLOW DIAGRAM: MC-2556-3.0

CATEGORY: A, C

CLASS: B

FUNCTION: Provide containment isolation.

TEST REQUIREMENT: Verify proper valve movement once per three months.

BASIS: The system design does not provide any indication for verifying valve closure upon flow reversal.

ALTERNATE TESTING: Valve will be verified shut by leak test performed in accordance with Appendix J.

RELIEF/JUSTIFICATION: RR-NF1

VALVE: 2NF-229

FLOW DIAGRAM: MC-2558-4.0

CATEGORY: A,C

CLASS: B

FUNCTION: Provide containment isolation

TEST REQUIREMENT:

- 1) Verify proper valve movement once per three months.
- 2) 10CFR50 Appendix J requires measurement of local leak rate using air or nitrogen.

BASIS: The system design does not provide any indication for verifying valve closure upon flow reversal.

ALTERNATE TESTING:

- 1) Valve will be verified closed by leak test performed in accordance with Appendix J.
- 2) Leak Rate testing of the valve will be performed per Tech Spec 4.6.1.2.d.4).

RELIEF/JUSTIFICATION: RR-NF2 (Deleted per Rev. 12)

VALVE: 2NF-228A, 2NF-233B, 2NF-234A

RELIEF/JUSTIFICATION: RR-RV1
VALVE: 2RV-130, 2RV-126

RELIEF/JUSTIFICATION: RR-VI3

VALVE: 2VI-135, 2VI-136, 2VI-137, 2VI-138, 2VI-139, 2VI-140,
2VI-141, 2VI-142

FLOW DIAGRAM: MC-2605-1.3

CATEGORY: AC

CLASS: C

FUNCTION: Check instrument air from the main steam isolation
valve accumulator tank.

TEST REQUIREMENT: Cycle quarterly and leak test.

BASIS: These valves are double isolation check valves and are
arranged in series. There is no means to test the
valves individually. Testing these valves makes one
of the main steam isolation valves inoperable due to
depressurizing the accumulator tank.

ALTERNATE TESTING: These valves will be cycled and leak tested during
cold shutdown. Relief is required because two valves
at a time are tested in series, not individually.

RELIEF/JUSTIFICATION: CS-FW1
 VALVE: 2FW-27A
 FLOW DIAGRAM: MC-2571-1.0
 CATEGORY: B
 CLASS: B
 FUNCTION: Isolates low pressure injection from FWST
 TEST REQUIREMENT: Full stroke exercise quarterly.
 BASIS: Closure of this valve would render all low pressure injection inoperable.
 ALTERNATE TESTING: Valve will be cycled and timed during cold shutdown.

RELIEF/JUSTIFICATION: CS-FW2

VALVE: 2FW-28

FLOW DIAGRAM: MC-2571-1.0

CATEGORY: C

CLASS: B

FUNCTION: Prevents reverse flow to the FWST and prevents pressurizing the FWST.

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: 2FW-28 cannot be full stroked during power operation since the only full flow path is into the RCS by the Residual Heat Removal Pumps (ND). The ND Pumps cannot overcome RCS pressure.

ALTERNATE TESTING: Valve will be full stroke exercised at cold shutdown.

RELIEF/JUSTIFICATION: CS-ND4

VALVE: 2ND-70

FLOW DIAGRAM: MC-2561-1.0

CATEGORY: C

CLASS: B

FUNCTION: RHR to SI Suction Check

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: 2ND-70 cannot be full stroked during power operation since the only full flow path is into the RCS and this can only be performed during cold shutdown. The miniflow for ND Pump 2A does not pass through 2ND-70 so it cannot be partial stroked during power operation.

2ND-70 cannot be seat leak tested during power operation since the required valve lineup cannot be made without putting 2000 ppm boron water from the RWST into the Chemical and Volume Control Pump Suction. Additionally, with the RCS at normal operating pressure, the seat leakage cannot be identified.

ALTERNATE TESTING: 2ND-70 will be full stroke exercised and seat leak tested at cold shutdown and depressurized.

RELIEF/JUSTIFICATION:	CS 405	
VALVE:	2ND-71	
FLOW DIAGRAM:	MC-2561-1.0	
CATEGORY:	C	
CLASS:	B	
FUNCTION:	RHR to SI Suction Check	
TEST REQUIREMENT:	Full stroke exercise quarterly.	
BASIS:	Valve cannot be full stroked at power since the only full flow path is into the RCS and this can only be performed at cold shutdown. 2ND-71 cannot be partial stroked during power since the required valve lineup would render both trains of safety injection inoperable.	12
	2ND-71 cannot be leak tested with the RCS at normal operating pressure because the seat leakage cannot be identified.	
ALTERNATE TESTING:	Valve will be full stroked at cold shutdown and depressurized.	12

RELIEF/JUSTIFICATION: CS-ND6

VALVE: 2ND-8, 2ND-23

FLOW DIAGRAM: MC-2561-1.0

CATEGORY: C

CLASS: B

FUNCTION: Prevents reverse flow through the ND Pumps

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: 2ND-8 and 2ND-23 cannot be fully stroked during power operation since the only full flow path is into the RCS and the ND Pumps cannot overcome RCS pressure. The ND Pump recirc line is not large enough to accommodate full design flow.

ALTERNATE TESTING: Valves will be full stroke exercised at cold shutdown. Valves will be partial stroked quarterly.

The opposite train check valves will be tested closed during quarterly pump testing except when the opposite train of ND is in service.

RELIEF/JUSTIFICATION: CS-NI13

VALVE: 2NI-15, 2NI-354, 2NI-17, 2NI-347, 2NI-19, 2NI-348,
2NI-21, 2NI-349

FLOW DIAGRAM: MC-2562-1.0

CATEGORY: C

CLASS: A

FUNCTION: Provides safety injection flow path.

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: Full or partial stroke during power operation would
result in thermal shock to injection nozzles.

ALTERNATE TESTING: Valve will be full stroked at cold shutdown.

RELIEF/JUSTIFICATION: CS-NI14

VALVE: 2NI-12

FLOW DIAGRAM: MC-2562-1.0

CATEGORY: C

CLASS: B

FUNCTION: Provides safety injection flow path

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: Full or partial stroke during power operation would result in thermal shock to injection nozzles.

ALTERNATE TESTING: Valve will be full stroked at cold shutdown.

RELIEF/JUSTIFICATION: CS-N115

VALVE: 2N1-101

FLOW DIAGRAM: MC-2562-3.0

CATEGORY: C

CLASS: B

FUNCTION: Opens on flow from FWST to SI. Checks flow if RHR is supplying SI suction pressure.

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: Valve cannot be full stroked during power operation since the SI pumps cannot overcome RCS pressure.

ALTERNATE TESTING: Valve will be partial stroked quarterly and full stroked and leak tested at cold shutdown.

RELIEF/JUSTIFICATION: CS-NI16

VALVE: 2NI-116, 2NI-148

FLOW DIAGRAM: MC-2562-3.0

CATEGORY: C

CLASS: B

FUNCTION: Opens to flow from the NI Pump(s). Check flow from opposite train.

TEST REQUIREMENT: Verify proper valve movement once per three months.

BASIS: Valves cannot be full or partial stroked during power operation since the safety injection pumps cannot overcome RCS pressure.

ALTERNATE TESTING: Valves will be cycled full open during cold shutdown. Valves will be checked closed quarterly.

RELIEF/JUSTIFICATION: CS-NI17

VALVE: 2NI-128, 2NI-159, 2NI-160, 2NI-156, 2NI-124, 2NI-157

FLOW DIAGRAM: MC-2562-3.0

CATEGORY: A,C

CLASS: B

FUNCTION: Open on flow from the SI pumps to the RCS hot legs.
Reactor Coolant Boundary valve.

TEST REQUIREMENT: Verify proper valve movement once per three months and
leak test per Technical Specifications.

BASIS: Valves cannot be full or partial stroked during power
operation since the safety injection pumps cannot
discharge into the RCS at operating pressure.

ALTERNATE TESTING: Valves will be verified to fully cycle during cold
shutdown. Valves will be leak tested in accordance
with Tech Spec 4.4.6.2.2.

RELIEF/JUSTIFICATION: CS-NI18

VALVE: 2NI-165, 2NI-167, 2NI-169, 2NI-171

FLOW DIAGRAM: MC-2562-3.1

CATEGORY: A,C

CLASS: A

FUNCTION: SI discharge check valves to RCS cold legs. Reactor Coolant Boundary valves.

TEST REQUIREMENT: Full stroke exercise quarterly and leak test per Technical Specifications.

BASIS: Valves cannot be cycled during power operation since the SI pumps cannot overcome RCS pressure to permit flow through the valves.

ALTERNATE TESTING: Valves will be fully cycled during cold shutdown. Valves will be leak tested in accordance with Tech Spec 4.4.6.2.2.

RELIEF/JUSTIFICATION: CS-NI19

VALVE: 2NI-180, 2NI-181, 2NI-175, 2NI-176

FLOW DIAGRAM: MC-2562-3.1

CATEGORY: A,C

CLASS: A

FUNCTION: Opens on flow from the ND to the RCS. Reactor Coolant Boundary valve.

TEST REQUIREMENT: Verify proper valve movement once per three months and leak test per Technical Specifications.

BASIS: The discharge pressure of the ND Pumps is not sufficient for opening the valve to the Reactor Coolant System during power operation.

ALTERNATE TESTING: Valve will be verified to fully cycle during cold shutdown by acoustic emission monitoring. Valves will be leak tested in accordance with Technical Specifications.

RELIEF/JUSTIFICATION: CS-NI20

VALVE: 2NI-129, 2NI-125, 2NI-134, 2NI-126

FLOW DIAGRAM: MC-2562-3.0

CATEGORY: A,C

CLASS: A

FUNCTION: Opens on flow from the ND system to the NC Hot Legs.
Reactor Coolant Boundary valve.

TEST REQUIREMENT: Verify proper valve movement once per three months and
leak test per Technical Specifications.

BASIS: ND pumps do not develop enough discharge pressure to
overcome RCS pressure at power operation.

ALTERNATE TESTING: Valve will be verified to fully cycle during cold
shutdown by acoustic emission monitoring. Valves will
be leak tested in accordance with Technical
Specifications.

RELIEF/JUSTIFICATION: CS-NI21

VALVE: 2NI-136B

FLOW DIAGRAM: MC-2562-3.0

CATEGORY: B

CLASS: B

FUNCTION: Safety injection suction from RHR

TEST REQUIREMENT: Cycle time quarterly.

BASIS: Opening this valve during modes in which safety injection is required could seat the check valve from the refueling water storage tank, NI-101, in the event of a LOCA. The RHR pumps would start, seating the check valve and causing the safety injection pumps to runout the RHR pumps.

ALTERNATE TESTING: Valves will be cycle timed during cold shutdown.

RELIEF/JUSTIFICATION: CS-NS1

VALVE: 2NS-38B, 2NS-43A

FLOW DIAGRAM: MC-2563-1.0

CATEGORY: B

CLASS: B

FUNCTION: Containment Spray Header Isolation

TEST REQUIREMENT: Cycle time quarterly.

BASIS: Opening either of these valves during modes in which the Residual Heat Removal (RHR) system is required would divert flow from the Reactor Coolant system cold legs if the RHR system were to automatically initiate. The flowrate would not meet the initial flowrate requirements for a large break LOCA in modes 1 through 4.

ALTERNATE TESTING: Valves will be cycle timed during cold shutdown.

RELIEF/JUSTIFICATION: CS-NV3 (Deleted per Rev. 12)

VALVE: 2NV-1A, 2NV-2A

RELIEF/JUSTIFICATION: CS-NV5 (Deleted per Rev. 12)

VALVE: 2NV-22

RELIEF/JUSTIFICATION: CS-NV6 (Deleted per Rev. 12)

VALVE: 2NV-1007, 2NV-1008, 2NV-1009, 2NV-1010

RELIEF/JUSTIFICATION: CS-NV10 (Deleted per Rev. 12)

VALVE: 2NV-459A

RELIEF/JUSTIFICATION: CS-NV14

VALVE: 2NV-225, 2NV-231

FLOW DIAGRAM: MC-2554-3.1

CATEGORY: C

CLASS: B

FUNCTION: Opens on flow from the Centrifugal Charging Pump(s).

TEST REQUIREMENT: Verify proper valve movement every three months.

BASIS: Valve cannot be full stroke exercised during power operation because this would result in an increase in the RCS boron inventory and could result in a plant shutdown. To fully stroke 2NV-225 and 2NV-231 the full centrifugal charging pump flow would have to go through the valves. The reactor coolant system letdown capacity would not be enough to maintain volume control tank level. The additional flow would have to come from the refueling water storage tank which has a boron concentration of 2000 ppm.

ALTERNATE TESTING: Valve will be full stroked during cold shutdown and partial stroked with normal use.

RELIEF/JUSTIFICATION: CS-NV15

VALVE: 2NV-223

FLOW DIAGRAM: MC-2554-3.1

CATEGORY: C

CLASS: B

FUNCTION: Opens on flow alignment from FWST. Closes to ensure sufficient centrifugal charging pump suction pressure when RHR is used as a suction source.

TEST REQUIREMENT: Verify proper valve movement every three months.

BASIS: Testing of these valve requires opening 2NV-221A or 2NV-222B. Failure of one of these valves in the open position aligns the FWST to the suction of the charging pumps with no means of isolating the flow path. This would result in an increase in boron inventory in the RCS and could result in a plant shutdown.

ALTERNATE TESTING: Valve will be full stroked and leak tested during cold shutdown.

RELIEF/JUSTIFICATION: CS-NV16

VALVE: 2NV-1046

FLOW DIAGRAM: MC-2554-3.0

CATEGORY: C

CLASS: B

FUNCTION: Opens on reciprocating charging pump recirc. flow.
Closes to prevent diversion of flow to the centrifugal
charging pump suctions.

TEST REQUIREMENT: Verify proper valve movement once every 3 months.

BASIS: Testing this valve on line would result in adding
2000 ppm borated water to the centrifugal charging
pump suction resulting in a reactor power transient.

ALTERNATE TESTING: Valve will be verified to seat closed during cold
shutdown.

RELIEF/JUSTIFICATION: CS-RN1 (Deleted per Rev. 12)

VALVE: 2RN-21A, 2RN-22A, 2RN-25B, 2RN-26B

RELIEF/JUSTIFICATION: CS-RN4

VALVE: 2RN-42A

FLOW DIAGRAM: MC-2574-4.0

CATEGORY: B

CLASS: C

FUNCTION: Isolates Nuclear Service Water System Non-Essential Header

TEST REQUIREMENT: Cycle and time valve every three months.

BASIS: Failure of this valve in the closed position during testing would inhibit cooling flow to heat exchangers. This action could result in damage to the equipment served by these heat exchangers. This equipment includes the PD charging pump and the computer room A/C.

ALTERNATE TESTING: This valve will be tested during cold shutdown.

RELIEF/JUSTIFICATION: CS-SM2 (Deleted per Rev. 12)

VALVE: 2SM-9AB, 2SM-10AB, 2SM-11AB, 2SM-12AB

RELIEF/JUSTIFICATION: CS-VG1

VALVE: 2VG-17, 2VG-18, 2VG-19, 2VG-20

FLOW DIAGRAM: MC-2609-4.0

CATEGORY: C

CLASS: C

FUNCTION: Open to provide diesel generator control air from individual starting air banks.

TEST REQUIREMENT: Full stroke exercise quarterly.

BASIS: To test these valves, the diesel generator would have to be started on a single bank of control air which would be a degraded condition. This is not justified for quarterly starts.

ALTERNATE TESTING: Valves will be full stroke exercised during cold shutdown.

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** NUCLEAR SERVICE WATER									
ORN-0002B	C	1574-1.0	K-10	B	ST-Q	-	-	-	12
ORN-0003A	C	1574-1.0	K-10	B	ST-Q	-	-	-	12
ORN-0004AC	C	1574-1.0	F-13	B	ST-Q	-	-	-	16
ORN-0005B	C	1574-1.0	E-12	B	ST-Q	-	-	-	12
ORN-0007A	C	1574-1.0	J-09	B	ST-Q	-	-	-	12
ORN-0009B	C	1574-1.0	D-09	B	ST-Q	-	-	-	12
ORN-0010AC	C	1574-1.0	G-11	B	ST-Q	-	-	-	12
ORN-0011B	C	1574-1.0	F-11	B	ST-Q	-	-	-	12
ORN-0012AC	C	1574-1.0	I-11	B	ST-Q	-	-	-	12
ORN-0013A	C	1574-1.0	J-11	B	ST-Q	-	-	-	12
ORN-0014A	C	1574-1.0	I-13	B	ST-Q	-	-	-	12
ORN-0015B	C	1574-1.0	F-13	B	ST-Q	-	-	-	12
ORN-0147AC	C	1574-1.0	H-02	B	ST-Q	-	-	-	12
ORN-0148AC	C	1574-1.0	H-03	B	ST-Q	-	-	-	16
ORN-0149A	C	1574-1.0	J-07	B	ST-Q	-	-	-	12
ORN-0150A	C	1574-1.0	I-06	B	ST-Q	-	-	-	12
ORN-0151B	C	1574-1.0	F-06	B	ST-Q	-	-	-	12
ORN-0152B	C	1574-1.0	E-07	B	ST-Q	-	-	-	12
ORN-0283AC	C	1574-1.0	F-02	B	ST-Q	-	-	-	12
ORN-0284B	C	1574-1.0	F-02	B	ST-Q	-	-	-	12
ORN-0301AC	C	1574-1.0	G-10	B	ST-Q	-	-	-	12
ORN-0302B	C	1574-1.0	F-10	B	ST-Q	-	-	-	12

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** STEAM GENERATOR BLOWDOWN RECYCLE									
1BB-0001B	B	1580-1.0	H-02	B	ST-Q	-	-	-	-
1BB-0002B	B	1580-1.0	H-04	B	ST-Q	-	-	-	-
1BB-0003B	B	1580-1.0	H-10	B	ST-Q	-	-	-	-
1BB-0004B	B	1580-1.0	H-10	B	ST-Q	-	-	-	-
1BB-0005A	B	1580-1.0	F-02	B	ST-Q	-	-	-	-
1BB-0006A	B	1580-1.0	F-04	B	ST-Q	-	-	-	-
1BB-0007A	B	1580-1.0	F-12	B	ST-Q	-	-	-	-
1BB-0008A	B	1580-1.0	F-10	B	ST-Q	-	-	-	-

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** AUXILIARY FEEDWATER									
1CA-0007AC	C	1592-1.1	B-10	B	ST-Q	-	-	-	-
1CA-0008	C	1592-1.1	B-11	C	MTC-Q	-	CA2	RF#	14
1CA-0009B	C	1592-1.1	C-05	B	ST-Q	-	-	-	-
1CA-0010	C	1592-1.1	C-05	C	MTC-Q	-	CA2	RF#	14
1CA-0011A	C	1592-1.1	B-04	B	ST-Q	-	-	-	-
1CA-0012	C	1592-1.1	B-03	C	MTC-Q	-	CA2	RF#	14
1CA-0015A	C	1592-1.1	D-03	B	ST-Q	-	-	-	-
1CA-0018B	C	1592-1.1	D-04	B	ST-Q	-	-	-	-
1CA-0020AB	C	1592-1.1	I-10	AC	ST-Q	LT	-	-	16
1CA-0022	C	1592-1.1	I-10	C	MTO-Q	-	-	-	-
1CA-0026	C	1592-1.1	I-04	C	MTO-Q	-	-	-	-
1CA-0027A	C	1592-1.1	J-05	AC	ST-Q	LT	-	-	16
1CA-0031	C	1592-1.1	I-07	C	MTO-Q	-	-	-	-
1CA-0032B	C	1592-1.1	J-08	AC	ST-Q	LT	-	-	16
1CA-0036AB	C	1592-1.0	L-10	B	ST-Q	-	-	-	-
1CA-0037	B	1592-1.0	K-14	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0038B	B	1592-1.0	J-14	B	ST-Q	-	-	-	-
1CA-0040B	C	1592-1.0	G-14	B	ST-Q	-	-	-	16
1CA-0041	B	1592-1.0	H-14	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0042B	B	1592-1.0	I-14	B	ST-Q	-	-	-	-
1CA-0044B	C	1592-1.0	C-11	B	ST-Q	-	-	-	-
1CA-0045	B	1592-1.0	C-09	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0046B	B	1592-1.0	D-08	B	ST-Q	-	-	-	-
1CA-0048AB	C	1592-1.0	K-08	B	ST-Q	-	-	-	-
1CA-0049	B	1592-1.0	H-08	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0050B	B	1592-1.0	G-08	B	ST-Q	-	-	-	-
1CA-0052AB	C	1592-1.0	K-07	B	ST-Q	-	-	-	-
1CA-0053	B	1592-1.0	H-07	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0054AC	B	1592-1.0	G-07	B	ST-Q	-	-	-	-
1CA-0056A	C	1592-1.0	C-04	B	ST-Q	-	-	-	16
1CA-0057	B	1592-1.0	C-06	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0058A	B	1592-1.0	D-07	B	ST-Q	-	-	-	-
1CA-0060A	C	1592-1.0	G-01	B	ST-Q	-	-	-	-
1CA-0061	B	1592-1.0	H-01	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0062A	B	1592-1.0	I-01	B	ST-Q	-	-	-	-
1CA-0064AB	C	1592-1.0	L-04	B	ST-Q	-	-	-	-
1CA-0065	B	1592-1.0	K-01	C	MTO,C-Q	-	-	CS-CA1	-
1CA-0066AC	B	1592-1.0	J-01	B	ST-Q	-	-	-	-
1CA-0086A	C	1592-1.1	C-14	B	ST-Q	-	-	-	-
1CA-0116B	C	1592-1.1	E-14	B	ST-Q	-	-	-	-
1CA-0161C								DELETED	16
1CA-0162C								DELETED	16
1CA-0165	C	1592-1.1	C-14	C	MTO,C-Q	-	CA1	RF#	16
1CA-0166	C	1592-1.1	F-14	C	MTO,C-Q	-	CA1	RF#	16

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** FEEDWATER									
1CF-0017AB	F	1591-1.1	K-03	B	ST-Q	-	-	CS-CF2	-
1CF-0020AB	F	1591-1.1	K-06	B	ST-Q	-	-	CS-CF2	-
1CF-0023AB	F	1591-1.1	K-09	B	ST-Q	-	-	CS-CF2	-
1CF-0026AB	B	1591-1.1	H-03	B	ST-Q	-	-	CS-CF1	-
1CF-0028AB	B	1591-1.1	H-06	B	ST-Q	-	-	CS-CF1	-
1CF-0030AB	B	1591-1.1	H-09	B	ST-Q	-	-	CS-CF1	-
1CF-0032AB	F	1591-1.1	K-13	B	ST-Q	-	-	CS-CF2	-
1CF-0035AB	B	1591-1.1	H-13	B	ST-Q	-	-	CS-CF1	-
1CF-0104AB	F	1591-1.1	K-12	B	ST-Q	-	-	CS-CF4	13
1CF-0105AB	F	1591-1.1	K-09	B	ST-Q	-	-	CS-CF4	13
1CF-0106AB	F	1591-1.1	K-05	B	ST-Q	-	-	CS-CF4	13
1CF-0107AB	F	1591-1.1	K-02	B	ST-Q	-	-	CS-CF4	13
1CF-0126B	B	1591-1.1	H-14	B	ST-Q	-	-	CS-CF3	12
1CF-0127B	B	1591-1.1	H-10	B	ST-Q	-	-	CS-CF3	12
1CF-0128B	B	1591-1.1	H-07	B	ST-Q	-	-	CS-CF3	12
1CF-0129B	B	1591-1.1	H-03	B	ST-Q	-	-	CS-CF3	12
1CF-0134A	B	1591-1.1	G-13	B	ST-Q	-	-	-	12
1CF-0135A	B	1591-1.1	G-10	B	ST-Q	-	-	-	12
1CF-0136A	B	1591-1.1	G-07	B	ST-Q	-	-	-	12
1CF-0137A	B	1591-1.1	G-05	B	ST-Q	-	-	-	12
1CF-0151B	B	1591-1.1	G-12	B	ST-Q	-	-	-	12
1CF-0152	B	1591-1.1	F-12	C	MTC-Q	-	-	CS-CF5	-
1CF-0153B	B	1591-1.1	F-08	B	ST-Q	-	-	-	12
1CF-0154	B	1591-1.1	F-08	C	MTC-Q	-	-	CS-CF5	-
1CF-0155B	B	1591-1.1	F-07	B	ST-Q	-	-	-	12
1CF-0156	B	1591-1.1	E-07	C	MTC-Q	-	-	CS-CF5	-
1CF-0157B	B	1591-1.1	G-12	B	ST-Q	-	-	-	12
1CF-0158	B	1591-1.1	F-12	C	MTC-Q	-	-	CS-CF5	-

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR ENGINE FUEL OIL									
1FD-0092	C	1609-3.0	E-13	C	MTO,C-Q	-	-	-	16
1FD-0093	C	1609-3.0	J-14	C	MTO,C-Q	-	-	-	16
1FD-0104	C	1609-3.1	E-13	C	MTO,C-Q	-	-	-	16
1FD-0105	C	1609-3.1	J-14	C	MTO,C-Q	-	-	-	16

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VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** REFUELING WATER									
1FW-0001A	B	1571-1.0	E-11	B	ST-Q	-	-	-	-
1FW-0001	P	1571-1.0	D-01	A	LT-RF	-	-	PASSIVE	-
1FW-0005	B	1571-1.0	C-07	AC	LT-RF	-	-	PASSIVE	-
1FW-0011	B	1571-1.0	C-02	A	LT-RF	-	-	PASSIVE	-
1FW-0013	B	1571-1.0	D-02	A	LT-RF	-	-	PASSIVE	-
1FW-0027A	B	1571-1.0	C-12	B	ST-Q	-	-	CS-FW1	-
1FW-0028	B	1571-1.0	B-11	C	MTO,C-Q	-	-	CS-FW2	14
1FW-0032B	B	1571-1.0	E-11	B	ST-Q	-	-	-	-
1FW-0033A	B	1571-1.0	F-11	B	ST-Q	-	-	-	-
1FW-0049B	B	1571-1.0	F-10	B	ST-Q	-	-	-	-
1FW-0052	E	1571-1.0	I-05	C	MTO-Q	-	-	-	-
1FW-0067	B	1571-1.0	C-01	AC	LT-RF	-	-	PASSIVE	-

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** AIRLOCK									
11A-5080	B	1499-1A1	N/A	A	ST-Q	LT-RF	-	-	16
11A-5160	B	1499-1A1	N/A	A	ST-Q	LT-RF	-	-	16
11A-5340	B	1499-1A1	N/A	AC	LT-RF	-	-	-	16
11A-5350	B	1499-1A1	N/A	AC	LT-RF	-	-	-	16
11A-5360	C	1499-1A1	N/A	AC	LT-RF	-	1A1	-	16
11A-5370	C	1499-1A1	N/A	AC	LT-RF	-	1A1	-	16
11A-5380	C	1499-1A1	N/A	AC	LT-RF	-	1A1	-	16
11A-5390	C	1499-1A1	N/A	AC	LT-RF	-	1A1	-	16

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** COMPONENT COOLING									
1KC-0001A	C	1573-1.0	C-07	B	ST-Q	-	-	-	-
1KC-0002B	C	1573-1.0	C-08	B	ST-Q	-	-	-	-
1KC-0003A	C	1573-1.0	C-07	B	ST-Q	-	-	-	-
1KC-0005	C	1573-1.0	F-04	C	MTO-Q	-	-	-	-
1KC-0008	C	1573-1.0	F-04	C	MTO-Q	-	-	-	-
1KC-0011	C	1573-1.0	F-11	C	MTO-Q	-	-	-	-
1KC-0014	C	1573-1.0	F-11	C	MTO-Q	-	-	-	-
1KC-0018B	C	1573-1.0	C-08	B	ST-Q	-	-	-	-
1KC-0047	B	1573-4.0	L-12	AC	MTC-Q	LT-RF	KC5	MT-RF	-
1KC-0050A	C	1573-1.0	K-07	B	ST-Q	-	-	-	-
1KC-0051A	C	1573-1.0	J-05	B	ST-Q	-	-	-	-
1KC-0053B	C	1573-1.0	K-08	B	ST-Q	-	-	-	-
1KC-0054B	C	1573-1.0	J-10	B	ST-Q	-	-	-	-
1KC-0056A	C	1573-1.1	E-02	B	ST-Q	-	-	-	-
1KC-0057A	C	1573-1.1	D-06	B	ST-Q	-	-	-	-
1KC-0081B	C	1573-1.1	E-13	B	ST-Q	-	-	-	-
1KC-0082B	C	1573-1.1	D-09	B	ST-Q	-	-	-	-
1KC-0228B	C	1573-1.0	K-08	B	ST-Q	-	-	-	-
1KC-0230A	C	1573-1.0	K-07	B	ST-Q	-	-	-	-
1KC-0279	B	1573-3.1	K-04	AC	MTC-Q	LT-RF	KC3	MT-RF	-
1KC-0280	B	1573-3.1	D-01	AC	MTC-Q	LT-RF	KC1	MT-RF	-
1KC-0305B	B	1573-3.1	D-14	B	ST-Q	-	-	-	-
1KC-0315B	B	1573-3.1	L-13	B	ST-Q	-	-	-	-
1KC-0320A	B	1573-3.1	C-10	A	ST-Q	LT-RF	-	CS-KC4	-
1KC-0322	B	1573-3.1	C-09	AC	MTC-Q	LT-RF	KC2	MT-RF	-
1KC-0332B	B	1573-3.1	D-01	A	ST-Q	LT-RF	-	CS-KC3	-
1KC-0333A	B	1573-3.1	G-01	A	ST-Q	LT-RF	-	CS-KC3	-
1KC-0338B	B	1573-3.1	D-12	A	ST-Q	LT-RF	-	CS-KC2	-
1KC-0340	B	1573-3.1	E-12	AC	MTC-Q	LT-RF	KC4	MT-RF	16
1KC-0424B	B	1573-3.1	L-04	A	ST-Q	LT-RF	-	CS-KC1	-
1KC-0425A	B	1573-3.1	L-06	A	ST-Q	LT-RF	-	CS-KC1	-
1KC-0429B	B	1573-4.0	K-12	A	ST-Q	LT-RF	-	-	-
1KC-0430A	B	1573-4.0	K-10	A	ST-Q	LT-RF	-	-	-
1KC-0800	C	1573-1.1	I-11	C	SP-3R	-	-	10 PSIG	16
1KC-0897	C	1573-1.0	K-2	C	MTC-Q	-	-	-	16
1KC-0903	C	1573-1.0	K-13	C	MTC-Q	-	-	-	16
1KC-0958	C	1573-1.0	I-8	C	MTC-Q	-	-	-	16
1KC-0972	C	1573-1.1	J-10	C	SP-3R	-	-	15 PSIG	16

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR COOLING WATER									
1KD-0009	C	1609-1.0	E-14	B	FS-Q	-	-	-	16
1KD-0029	C	1609-1.1	E-14	B	FS-Q	-	-	-	16

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** RADIATION MONITORING									
IMI-5580	B	1499-MI7	N/A	A	ST-Q	LT-RF	-	-	16
IMI-5581	B	1499-MI7	N/A	A	ST-Q	LT-RF	-	-	16
IMI-5582	B	1499-MI7	N/A	A	ST-Q	LT-RF	-	-	16
IMI-5583	B	1499-MI7	N/A	A	ST-Q	LT-RF	-	-	16

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** BORON RECYCLE									
1NB-0260B	B	1556-3.0	G-05	A	ST-Q	LT-RF	-	-	-
1NB-0262	B	1556-3.0	G-03	AC	MTC-Q	LT-RF	NB1	MT-RF	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** REACTOR COOLANT									
1NC-0001	A	1553-2.0	J-09	C	SP-3Y	-	-	2485 PSIG	-
1NC-0002	A	1553-2.0	J-10	C	SP-3Y	-	-	2485 PSIG	-
1NC-0003	A	1553-2.0	J-11	C	SP-3Y	-	-	2485 PSIG	-
1NC-0031B	A	1553-2.0	H-06	B	ST-Q	-	-	-	-
1NC-0032B	A	1553-2.0	J-06	B	ST-Q	-	-	CS-NC1	16
1NC-0033A	A	1553-2.0	H-04	B	ST-Q	-	-	-	-
1NC-0034A	A	1553-2.0	J-04	B	ST-Q	-	-	CS-NC1	16
1NC-0035B	A	1553-2.0	H-02	B	ST-Q	-	-	-	-
1NC-0036B	A	1553-2.0	J-02	B	ST-Q	-	-	CS-NC1	16
1NC-0053B	B	1553-2.1	I-10	A	ST-Q	LT-RF	-	-	-
1NC-0054A	B	1553-2.1	I-08	A	ST-Q	LT-RF	-	-	-
1NC-0056B	B	1553-2.1	E-13	A	ST-Q	LT-RF	-	-	-
1NC-0057	B	1553-2.1	G-12	AC	LT-RF	-	-	PASSIVE	-
1NC-0141	B	1553-4.0	B-06	A	PC-Q	LT-RF	-	PASSIVE	-
1NC-0142	B	1553-4.0	B-05	A	PC-Q	LT-RF	-	PASSIVE	-
1NC-0195B	B	1553-4.0	K-07	A	LT-RF	-	-	PASSIVE	-
1NC-0196A	B	1553-4.0	I-07	A	LT-RF	-	-	PASSIVE	-
1NC-0259	B	1553-4.0	I-07	AC	MTC-Q	LT-RF	NC1	MT-RF*	-
1NC-0261	B	1553-4.0	B-07	AC	MTC-Q	LT-RF	NC1	MT-RF*	-
1NC-0272AC	A	1553-2.1	L-07	B	ST-Q	-	-	CS-NC2	16
1NC-0273AC	A	1553-2.1	L-07	B	ST-Q	-	-	CS-NC2	16
1NC-0274B	A	1553-2.1	K-07	B	ST-Q	-	-	CS-NC2	16
1NC-0275B	A	1553-2.1	K-07	B	ST-Q	-	-	CS-NC2	16

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** RESIDUAL HEAT REMOVAL									
1ND-0001B	A	1561-1.0	I-13	A	ST-Q	LT-TS	-	CS-ND1 PIV	-
1ND-0002AC	A	1561-1.0	H-13	A	ST-Q	LT-TS	-	CS-ND1 PIV	-
1ND-0004B	B	1561-1.0	E-12	B	ST-Q	-	-	-	-
1ND-0008	B	1561-1.0	D-08	C	MTQ,C-Q	-	-	CS-ND6	14
1ND-0014	B	1561-1.0	D-03	B	ST-Q	-	-	-	-
1ND-0015B	B	1561-1.0	E-03	B	ST-Q	-	-	CS-ND3	-
1ND-0019A	B	1561-1.0	H-12	B	ST-Q	-	-	-	-
1ND-0023	B	1561-1.0	J-08	C	MTQ,C-Q	-	-	CS-ND6	14
1ND-0029	B	1561-1.0	J-03	B	ST-Q	-	-	-	-
1ND-0030A	B	1561-1.0	I-03	B	ST-Q	-	-	CS-ND3	-
1ND-0058A	B	1561-1.0	K-03	B	ST-Q	-	-	CS-ND2	-
1ND-0067B	B	1561-1.0	B-09	B	ST-Q	-	-	-	-
1ND-0068A	B	1561-1.0	L-09	B	ST-Q	-	-	-	-
1ND-0070	B	1561-1.0	K-03	C	MTQ,C-Q	-	-	CS-ND4	14
1ND-0071	B	1561-1.0	C-04	C	MTQ,C-Q	-	-	CS-ND5	14

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VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** ICE CONDENSOR REFRIGATION									
INF-0228A	B	1558-4.0	H-13	A	ST-Q	LT-RF	-	LT per TS	16
INF-0229	B	1558-4.0	F-13	AC	MTC-Q	LT-RF	NF1	MT-RF*	-
INF-0233B	B	1558-4.0	K-12	A	ST-Q	LT-RF	-	LT per TS	16
INF-0234A	B	1558-4.0	K-13	A	ST-Q	LT-RF	-	LT per TS	16

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** SAFETY INJECTION									
INI-0009A	B	1562-1.0	H-09	B	ST-Q	-	-	CS-NI1	-
INI-0010B	B	1562-1.0	G-09	B	ST-Q	-	-	CS-NI1	-
INI-0012	B	1562-1.0	G-08	C	MTO-Q	-	-	CS-NI14	14
INI-0015	A	1562-1.0	K-07	C	MTO-Q	-	-	CS-NI13	14
INI-0017	A	1562-1.0	I-07	C	MTO-Q	-	-	CS-NI13	14
INI-0019	A	1562-1.0	F-07	C	MTO-Q	-	-	CS-NI13	14
INI-0021	A	1562-1.0	D-07	C	MTO-Q	-	-	CS-NI13	14
INI-0047A	B	1562-2.0	K-05	A	ST-Q	LT-RF	-	-	-
INI-0048	B	1562-2.0	K-03	AC	MTC-Q	LT-RF	NI3	MT-RF*	-
INI-0054A								DELETED	13
INI-0059	A	1562-2.0	D-13	AC	MTO,C-Q	LT-TS	NI4	PIV RF#	-
INI-0060	A	1562-2.0	D-14	AC	MTO,C-Q	LT-TS	NI6	PIV RF#	-
INI-0065B								DELETED	13
INI-0070	A	1562-2.0	H-13	AC	MTO,C-Q	LT-TS	NI4	PIV RF#	-
INI-0071	A	1562-2.0	H-13	AC	MTO,C-Q	LT-TS	NI6	PIV RF#	-
INI-0076A								DELETED	13
INI-0081	A	1562-2.1	C-03	AC	MTO,C-Q	LT-TS	NI6	PIV RF#	-
INI-0082	A	1562-2.1	C-03	AC	MTO,C-Q	LT-TS	NI6	PIV RF#	-
INI-0088B								DELETED	13
INI-0093	A	1562-2.1	C-08	AC	MTO,C-Q	LT-TS	NI4	PIV RF#	-
INI-0094	A	1562-2.1	C-08	AC	MTO,C-Q	LT-TS	NI6	PIV RF#	-
INI-0095A	B	1562-2.1	F-12	A	ST-Q	LT-RF	-	-	-
INI-0096B	B	1562-2.1	E-13	A	ST-Q	LT-RF	-	-	-
INI-0100B	B	1562-3.0	F-13	B	ST-Q	-	-	CS-NI3	-
INI-0101	B	1562-3.0	F-13	C	MTO,C-Q	-	-	CS-NI15	14
INI-0103A	B	1562-3.0	J-14	B	ST-Q	-	-	-	-
INI-0114	B	1562-3.0	I-09	C	MTO-Q	-	-	-	-
INI-0115B	B	1562-3.0	H-09	B	ST-Q	-	-	-	-
INI-0116	B	1562-3.0	J-09	C	MTO,C-Q	-	-	CS-NI16	14
INI-0118A	B	1562-3.0	H-07	B	ST-Q	-	-	-	-
INI-0120B	B	1562-3.0	J-07	A	ST-Q	LT-RF	-	-	-
INI-0121A	B	1562-3.0	J-06	B	ST-Q	-	-	CS-NI5	-
INI-0124	A	1562-3.0	J-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
INI-0125	A	1562-3.0	I-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI20	14
INI-0126	A	1562-3.0	J-02	AC	MTO,C-Q	LT-TS	-	PIV CS-NI20	14
INI-0128	A	1562-3.0	I-04	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
INI-0129	A	1562-3.0	I-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI20	14
INI-0134	A	1562-3.0	G-04	AC	MTO,C-Q	LT-TS	-	PIV CS-NI20	14
INI-0135B	B	1562-3.0	E-14	B	ST-Q	-	-	-	-
INI-0136B	B	1562-3.0	C-14	B	ST-Q	-	-	CS-NI21	16
INI-0143	B	1562-3.0	F-09	C	MTO,C-Q	-	-	-	-
INI-0144B	B	1562-3.0	G-09	B	ST-Q	-	-	-	-
INI-0147A	B	1562-3.0	G-11	B	ST-Q	-	-	CS-NI4	-
INI-0148	B	1562-3.0	D-09	C	MTO,C-Q	-	-	CS-NI16	14
INI-0150B	B	1562-3.0	E-07	B	ST-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
1NI-0152B	B	1562-3.0	D-06	B	ST-Q	-	-	CS-NI6	-
1NI-0156	A	1562-3.0	D-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
1NI-0157	A	1562-3.0	D-02	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
1NI-0159	A	1562-3.0	B-04	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
1NI-0160	A	1562-3.0	B-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	14
1NI-0162A	B	1562-3.1	K-11	B	ST-Q	-	-	CS-NI7	-
1NI-0165	A	1562-3.1	J-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	14
1NI-0167	A	1562-3.1	J-05	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	14
1NI-0169	A	1562-3.1	J-06	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	14
1NI-0171	A	1562-3.1	J-07	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	14
1NI-0173A	B	1562-3.1	I-12	B	ST-Q	-	-	CS-NI8	-
1NI-0175	A	1562-3.1	I-08	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	14
1NI-0176	A	1562-3.1	H-08	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	14
1NI-0178B	B	1562-3.1	F-12	B	ST-Q	-	-	CS-NI9	-
1NI-0180	A	1562-3.1	F-06	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	14
1NI-0181	A	1562-3.1	D-05	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	14
1NI-0183B	B	1562-3.0	G-03	B	ST-Q	-	-	CS-NI10	-
1NI-0184B	B	1562-3.1	D-12	B	ST-Q	-	-	CS-NI11	-
1NI-0185A	B	1562-3.1	B-12	B	ST-Q	-	-	CS-NI11	-
1NI-0332A	B	1562-3.0	L-14	B	ST-Q	-	-	-	-
1NI-0333B	B	1562-3.0	L-12	B	ST-Q	-	-	-	-
1NI-0334B	B	1562-3.0	L-11	B	ST-Q	-	-	-	-
1NI-0347	A	1562-1.0	I-07	C	MTO-Q	-	-	CS-NI13	14
1NI-0348	A	1562-1.0	F-07	C	MTO-Q	-	-	CS-NI13	14
1NI-0349	A	1562-1.0	D-07	C	MTO-Q	-	-	CS-NI13	14
1NI-0354	A	1562-1.0	K-07	C	MTO-Q	-	-	CS-NI13	14
1NI-G430A	B	1562-2.0	E-04	B	ST-Q	-	-	CS-NI2	-
1NI-0431B	B	1562-2.0	J-04	B	ST-Q	-	-	CS-NI2	-
1NI-0436	B	1562-2.1	G-11	AC	MTC-Q	LT-RF	NI5	MT-RF*	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** NUCLEAR SAMPLING									
1NM-0003AC	B	1572-1.0	K-03	A	ST-Q	LT-RF	-	-	-
1NM-0006AC	B	1572-1.0	J-03	A	ST-Q	LT-RF	-	-	-
1NM-0007B	B	1572-1.0	K-06	A	ST-Q	LT-RF	-	-	-
1NM-0022AC	B	1572-1.0	J-12	A	ST-Q	LT-RF	-	-	-
1NM-0025AC	B	1572-1.0	K-12	A	ST-Q	LT-RF	-	-	-
1NM-0026B	B	1572-1.0	K-08	A	ST-Q	LT-RF	-	-	-
1NM-0069	B	1572-1.1	G-09	AC	LI-RF	-	-	PASSIVE	-
1NM-0072B	B	1572-1.1	I-06	A	ST-Q	LT-RF	-	-	-
1NM-0075B	B	1572-1.1	I-08	A	ST-Q	LT-RF	-	-	-
1NM-0078B	B	1572-1.1	I-09	A	ST-Q	LT-RF	-	-	-
1NM-0081B	B	1572-1.1	I-11	A	ST-Q	LT-RF	-	-	-
1NM-0082A	B	1572-1.1	E-09	A	ST-Q	LT-RF	-	-	-
1NM-0187A	B	1572-3.0	K-01	B	ST-Q	-	-	-	-
1NM-0190A	B	1572-3.0	K-02	B	ST-Q	-	-	-	-
1NM-0191B	B	1572-3.0	I-02	B	ST-Q	-	-	-	-
1NM-0197B	B	1572-3.0	K-05	B	ST-Q	-	-	-	-
1NM-0200B	B	1572-3.0	K-06	B	ST-Q	-	-	-	-
1NM-0201A	B	1572-3.0	I-06	B	ST-Q	-	-	-	-
1NM-0207A	B	1572-3.0	K-08	B	ST-Q	-	-	-	-
1NM-0210A	B	1572-3.0	K-09	B	ST-Q	-	-	-	-
1NM-0211B	B	1572-3.0	I-09	B	ST-Q	-	-	-	-
1NM-0217B	B	1572-3.0	K-11	B	ST-Q	-	-	-	-
1NM-0220B	B	1572-3.0	K-12	B	ST-Q	-	-	-	-
1NM-0221A	B	1572-3.0	I-12	B	ST-Q	-	-	-	-
1NM-0420	B	1572-1.0	J-03	AC	MTC-Q	LT-RF	NM1	MT-RF*	-
1NM-0421	B	1572-1.0	J-12	AC	MTC-Q	LT-RF	NM1	MT-RF*	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COGR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT SPRAY									
1NS-0001B	B	1563-1.0	C-13	B	ST-Q	-	-	-	-
1NS-0003B	B	1563-1.0	B-13	B	ST-Q	-	-	-	-
1NS-0004	B	1563-1.0	B-12	C	MTQ, C-Q	-	NS2	RF#	16
1NS-0012B	B	1563-1.0	C-04	B	ST-Q	-	-	-	-
1NS-0013	B	1563-1.0	B-02	C	MTQ-Q	-	NS1	RF#	-
1NS-0015B	B	1563-1.0	D-04	B	ST-Q	-	-	-	-
1NS-0016	B	1563-1.0	D-02	C	MTQ-Q	-	NS1	RF#	-
1NS-0018A	B	1563-1.0	G-13	B	ST-Q	-	-	-	-
1NS-0020A	B	1563-1.0	F-13	B	ST-Q	-	-	-	-
1NS-0021	B	1563-1.0	F-12	C	MTQ, C-Q	-	NS2	RF#	16
1NS-0029A	B	1563-1.0	F-04	B	ST-Q	-	-	-	-
1NS-0030	B	1563-1.0	F-02	C	MTQ-Q	-	NS1	RF#	-
1NS-0032A	B	1563-1.0	H-04	B	ST-Q	-	-	-	-
1NS-0033	B	1563-1.0	H-02	C	MTQ-Q	-	NS1	RF#	-
1NS-0038B	B	1563-1.0	J-05	B	ST-Q	-	-	CS-NS1	16
1NS-0041	B	1563-1.0	J-03	C	MTQ-Q	-	NS1	RF#	-
1NS-0043A	B	1563-1.0	K-05	B	ST-Q	-	-	CS-NS1	16
1NS-0046	B	1563-1.0	K-03	C	MTQ-Q	-	NS1	RF#	-
1NS-5550B	B	1499-NS8	N/A	A	ST-Q	LT-RF	-	-	16
1NS-5551A	B	1499-NS8	N/A	A	ST-Q	LT-RF	-	-	16

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CHEMICAL AND VOLUME CONTROL									
INV-0001A								DELETED	16
INV-0002A								DELETED	16
INV-0007B	B	1554-1.2	J-10	B	ST-Q	-	-	CS-NV2	-
INV-0021A	A	1554-1.2	E-03	B	ST-Q	-	-	CS-NV4	16
INV-0022								DELETED	16
INV-0024B	A	1554-1.2	D-06	B	ST-Q	-	-	-	16
INV-0025B	A	1554-1.2	D-07	B	ST-Q	-	-	-	16
INV-0035A	B	1554-1.2	K-07	B	ST-Q	-	-	-	14
INV-0094AC	B	1554-1.1	J-13	B	ST-Q	-	-	CS-NV1	-
INV-0095B	B	1554-1.1	H-13	B	ST-Q	-	-	CS-NV1	-
INV-0141A	B	1554-2.0	B-08	B	ST-Q	-	-	CS-NV7	-
INV-0142B	B	1554-2.0	B-07	B	ST-Q	-	-	CS-NV7	-
INV-0150B	B	1554-2.0	F-02	B	ST-Q	-	-	CS-NV12	12
INV-0151A	B	1554-2.0	G-02	B	ST-Q	-	-	CS-NV12	12
INV-0221A	B	1554-3.1	H-01	B	ST-Q	-	-	CS-NV9	-
INV-0222B	B	1554-3.1	I-01	B	ST-Q	-	-	CS-NV9	-
INV-0223	B	1554-3.1	I-02	C	MTO,C-Q	-	-	CS-NV15	14
INV-0225	B	1554-3.1	F-05	C	MTO,C-Q	-	-	CS-NV14	14
INV-0227	B	1554-3.1	E-06	C	MTO,C-Q	-	-	-	-
INV-0231	B	1554-3.1	F-10	C	MTO,C-Q	-	-	CS-NV14	14
INV-0233	B	1554-3.1	E-10	C	MTO,C-Q	-	-	-	-
INV-0244A	B	1554-3.0	K-08	B	ST-Q	-	-	CS-NV8	-
INV-0245B	B	1554-3.0	K-09	B	ST-Q	-	-	CS-NV8	-
INV-0264	B	1554-3.1	J-10	C	MTO-Q	-	-	CS-NV11	-
INV-0265B	B	1554-3.1	J-09	B	ST-Q	-	-	CS-NV13	12
INV-0411	C	1554-5.0	C-02	C	MTO-Q	-	NV4	RF#	12
INV-0413	C	1554-5.0	B-02	C	MTO-Q	-	NV4	RF#	12
INV-0457A	B	1554-1.2	I-07	B	ST-Q	-	-	-	16
INV-0458A	B	1554-1.2	J-07	B	ST-Q	-	-	-	-
INV-0459A								DELETED	14
INV-0842AC								DELETED	16
INV-0844								DELETED	16
INV-0849AC	B	1554-1.3	F-08	A	ST-Q	LT-RF	-	-	-
INV-1002	B	1554-1.3	F-10	AC	MTC-Q	LT-RF	NV1	RF	16
INV-1007								DELETED	16
INV-1008								DELETED	16
INV-1009								DELETED	16
INV-1010								DELETED	16
INV-1012C								DELETED	16
INV-1013C								DELETED	16
INV-1046	B	1554-3.0	H-12	C	MTC-Q	-	-	CS-NV16	16

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TWO- AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	PR	TEST ALTERNATIVES/ REMARKS	F E V
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** FIRE PROTECTION

1RF-0821A	B	1599-2.2	E-05	A	LT-RF	-	-	PASSIVE	-
1RF-0823	B	1599-2.2	E-07	AC	MTC-Q	LT-RF	RF1	MT-RF*	-
1RF-0832A	B	1599-2.2	I-05	A	LT-RF	-	-	PASSIVE, U2CIV	-
1RF-0834	B	1599-2.2	I-08	AC	MTC-Q	LT-RF	RF1	MT-RF*, U2CIV	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** NUCLEAR SERVICE WATER									
1RN-0016A	C	1574-1.1	J-03	B	ST-Q	-	-	-	-
1RN-0018B	C	1574-1.1	E-02	B	ST-Q	-	-	-	-
1RN-0021A	C	1574-1.1	J-02	B	ST-Q	-	-	-	16
1RN-0022A	C	1574-1.1	H-05	B	ST-Q	-	-	-	16
1RN-0025B	C	1574-1.1	C-04	B	ST-Q	-	-	-	16
1RN-0026B	C	1574-1.1	G-05	B	ST-Q	-	-	-	16
1RN-0028	C	1574-1.1	J-09	C	MTO-Q	-	-	-	-
1RN-0030	C	1574-1.1	E-09	C	MTO-Q	-	-	-	-
1RN-0040A	C	1574-1.1	I-12	B	ST-Q	-	-	-	-
1RN-0041B	C	1574-1.1	F-12	B	ST-Q	-	-	U1 & U2 SIGNAL	-
1RN-0042A	C	1574-4.0	B-09	B	ST-Q	-	-	CS-RN4	16
1RN-0043A	C	1574-1.1	F-12	B	ST-Q	-	-	U1 & U2 SIGNAL	-
1RN-0063B	C	1574-1.0	I-02	B	ST-Q	-	-	CS-RN5	16
1RN-0064A	C	1574-1.0	I-02	B	ST-Q	-	-	CS-RN5	16
1RN-0068A	C	1574-1.1	K-12	B	ST-Q	-	-	-	16
1RN-0069A	C	1574-2.0	K-03	B	ST-Q	-	-	-	-
1RN-0070A	C	1574-2.0	F-03	B	ST-Q	-	-	-	-
1RN-0073A	C	1574-2.0	I-03	B	ST-Q	-	-	-	-
1RN-0086A	C	1574-2.0	D-09	B	ST-Q	-	-	-	-
1RN-0089A	C	1574-2.0	J-10	B	ST-Q	-	-	-	-
1RN-0103A	C	1574-2.1	C-06	B	ST-Q	-	-	-	16
1RN-0112A	C	1574-2.0	I-06	B	ST-Q	-	-	-	16
1RN-0113	C	1574-2.0	D-13	C	MTO-Q	-	RN1	RF#	-
1RN-0114A	C	1574-2.1	B-11	B	ST-Q	-	-	-	16
1RN-0117A	C	1574-2.0	I-08	B	ST-Q	-	-	-	16
1RN-0126A	C	1574-2.1	D-09	B	ST-Q	-	-	-	16
1RN-0130A	C	1574-2.1	C-10	B	ST-Q	-	-	-	16
1RN-0134A	C	1574-2.1	C-07	B	ST-Q	-	-	-	-
1RN-0137A	C	1574-2.1	H-07	B	ST-Q	-	-	-	-
1RN-0140A	C	1574-2.0	E-13	B	ST-Q	-	-	-	16
1RN-0161B	C	1574-1.1	B-13	B	ST-Q	-	-	-	16
1RN-0162B	C	1574-3.0	K-03	B	ST-Q	-	-	-	-
1RN-0166A	C	1574-2.0	J-02	B	ST-Q	-	-	-	16
1RN-0170B	C	1574-3.0	I-01	B	ST-Q	-	-	-	16
1RN-0171B	C	1574-3.0	E-03	B	ST-Q	-	-	-	-
1RN-0174B	C	1574-3.0	I-03	B	ST-Q	-	-	-	-
1RN-0187B	C	1574-3.0	E-10	B	ST-Q	-	-	-	-
1RN-0190B	C	1574-3.0	J-10	B	ST-Q	-	-	-	-
1RN-0204B	C	1574-3.1	C-05	B	ST-Q	-	-	-	16
1RN-0213B	C	1574-3.0	J-06	B	ST-Q	-	-	-	16
1RN-0214	C	1574-3.0	D-13	C	MTO-Q	-	RN1	RF#	-
1RN-0215B	C	1574-3.1	B-11	B	ST-Q	-	-	-	16
1RN-0218B	C	1574-3.0	I-08	B	ST-Q	-	-	-	16
1RN-0227B	C	1574-3.1	E-10	B	ST-Q	-	-	-	16
1RN-0231B	C	1574-3.1	C-10	B	ST-Q	-	-	-	16

Duke Power Company
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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOP	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
1RN-0235B	C	1574-3.1	E-07	B	ST-Q	-	-	-	-
1RN-0238B	C	1574-3.1	I-07	B	ST-Q	-	-	-	-
1RN-0240B	C	1574-3.0	E-13	B	ST-Q	-	-	-	16
1RN-0252B	C	1574-4.0	E-02	A	ST-Q	LT-RF	-	CS-RN2	16
1RN-0253A	C	1574-4.0	C-02	A	ST-Q	LT-RF	-	CS-RN2	16
1RN-0276A	C	1574-4.0	J-02	A	ST-Q	LT-RF	-	CS-RN3	16
1RN-0277B	C	1574-4.0	I-02	A	ST-Q	LT-RF	-	CS-RN3	16
1RN-0279B	C	1574-1.0	K-02	B	ST-Q	-	-	-	-
1RN-0296A	C	1574-1.0	I-01	B	ST-Q	-	-	-	-
1RN-0297B	C	1574-1.0	G-02	B	ST-Q	-	-	-	-
1RN-0299A	C	1574-1.0	K-02	B	ST-Q	-	-	-	-
1RN-0442	C	1574-2.0	J-11	B	ST-Q	-	-	-	16
1RN-0445	C	1574-2.0	J-11	B	ST-Q	-	-	-	16
1RN-0457	C	1574-3.0	J-11	B	ST-Q	-	-	-	16
1RN-0460	C	1574-3.0	J-11	B	ST-Q	-	-	-	16

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT VENTILATION COOLING WATER									
1RV-0032A	B	1604-3.0	K-10	A	ST-Q	LT-RF	-	CS-RV1	-
1RV-0033B	B	1604-3.0	K-12	A	ST-Q	LT-RF	-	CS-RV1	-
1RV-0076A	B	1604-3.0	C-12	A	ST-Q	LT-RF	-	CS-RV1	-
1RV-0077B	B	1604-3.0	C-10	A	ST-Q	LT-RF	-	CS-RV1	-
1RV-0079A	B	1604-3.0	K-07	A	ST-Q	LT-RF	-	-	-
1RV-0080B	B	1604-3.0	K-05	A	ST-Q	LT-RF	-	-	-
1RV-0101A	B	1604-3.0	C-05	A	ST-Q	LT-RF	-	-	-
1RV-0102B	B	1604-3.0	C-07	A	ST-Q	LT-RF	-	-	-
1RV-0126	B	1604-3.0	B-12	AC	MTC-Q	LT-RF	RV1	MT-RF*	-
1RV-0130	B	1604-3.0	J-12	AC	MTC-Q	LT-RF	RV1	MT-RF*	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM TO AUX. EQUIPMENT									
1SA-0005	B	1593-1.2	F-04	C	MT0.C-Q	-	-	-	14
1SA-0006	B	1593-1.2	F-04	C	MT0.C-Q	-	-	-	14
1SA-0048ABC	B	1593-1.2	E-04	B	ST-Q	-	-	-	-
1SA-0049AB	B	1593-1.2	F-02	B	ST-Q	-	-	-	-

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Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM									
1SM-0001AB	B	1593-1.3	I-14	B	ST-Q	-	-	CS-SM1	-
1SM-0003AB	B	1593-1.3	C-14	B	ST-Q	-	-	CS-SM1	-
1SM-0005AB	B	1593-1.0	I-14	B	ST-Q	-	-	CS-SM1	-
1SM-0007AB	B	1593-1.0	C-14	B	ST-Q	-	-	CS-SM1	-
1SM-0009AB	B	1593-1.3	I-13	B	ST-Q	-	-	-	16
1SM-0010AB	B	1593-1.3	C-13	B	ST-Q	-	-	-	16
1SM-0011AB	B	1593-1.0	I-13	B	ST-Q	-	-	-	16
1SM-0012AB	B	1593-1.0	C-13	B	ST-Q	-	-	-	16

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM VENT TO ATMOSPHERE									
1SV-0001AB	B	1593-1.3	L-05	B	ST-Q	-	-	-	-
1SV-0002	B	1593-1.3	K-06	C	SP-5Y	-	-	1170 PSIG	-
1SV-0003	B	1593-1.3	K-07	C	SP-5Y	-	-	1190 PSIG	-
1SV-0004	B	1593-1.3	K-09	C	SP-5Y	-	-	1205 PSIG	-
1SV-0005	B	1593-1.3	K-11	C	SP-5Y	-	-	1220 PSIG	-
1SV-0006	B	1593-1.3	K-12	C	SP-5Y	-	-	1225 PSIG	-
1SV-0007ABC	B	1593-1.3	G-05	B	ST-Q	-	-	-	-
1SV-0008	B	1593-1.3	E-06	C	SP-5Y	-	-	1170 PSIG	-
1SV-0009	B	1593-1.3	E-07	C	SP-5Y	-	-	1190 PSIG	-
1SV-0010	B	1593-1.3	E-09	C	SP-5Y	-	-	1205 PSIG	-
1SV-0011	B	1593-1.3	E-11	C	SP-5Y	-	-	1220 PSIG	-
1SV-0012	B	1593-1.3	E-12	C	SP-5Y	-	-	1225 PSIG	-
1SV-0013AB	B	1593-1.0	L-04	B	ST-Q	-	-	-	-
1SV-0014	B	1593-1.0	K-05	C	SP-5Y	-	-	1170 PSIG	-
1SV-0015	B	1593-1.0	K-07	C	SP-5Y	-	-	1190 PSIG	-
1SV-0016	B	1593-1.0	K-09	C	SP-5Y	-	-	1205 PSIG	-
1SV-0017	B	1593-1.0	K-10	C	SP-5Y	-	-	1220 PSIG	-
1SV-0018	B	1593-1.0	K-12	C	SP-5Y	-	-	1225 PSIG	-
1SV-0019AB	B	1593-1.0	G-04	B	ST-Q	-	-	-	-
1SV-0020	B	1593-1.0	E-05	C	SP-5Y	-	-	1170 PSIG	-
1SV-0021	B	1593-1.0	E-07	C	SP-5Y	-	-	1190 PSIG	-
1SV-0022	B	1593-1.0	E-09	C	SP-5Y	-	-	1205 PSIG	-
1SV-0023	B	1593-1.0	E-10	C	SP-5Y	-	-	1220 PSIG	-
1SV-0024	B	1593-1.0	E-12	C	SP-5Y	-	-	1225 PSIG	-

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Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
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** BREATHING AIR

1VB-0049B	B	16C5-3.1	G-02	A	ST-Q	LT-RF	-	-	-
1VB-0050	B	1605-3.1	E-04	AC	MTC-Q	LT-RF	VB1	MT-RF*	-

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Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTROL AREA VENTILATION									
1VC-0001A	NA	1578-1	I-13	B	ST-Q	-	-	-	16
1VC-0002A	NA	1578-1	I-13	B	ST-Q	-	-	-	16
1VC-0003B	NA	1578-1	I-13	B	ST-Q	-	-	-	16
1VC-0004B	NA	1578-1	H-13	B	ST-Q	-	-	-	16
1VC-0009A	NA	1578-1	E-13	B	ST-Q	-	-	-	16
1VC-0010A	NA	1578-1	D-13	B	ST-Q	-	-	-	16
1VC-0011B	NA	1578-1	E-13	B	ST-Q	-	-	-	16
1VC-0012B	NA	1578-1	D-13	B	ST-Q	-	-	-	16

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
IVE-0005A	T	1564-1	G-04	A	ST-Q	LT-RF	-	-	-
IVE-0006B	B	1564-1	G-04	A	ST-Q	LT-RF	-	-	-
IVE-0008A	B	1564-1	J-02	B	ST-Q	-	-	-	-
IVE-0010A	B	1564-1	H-03	A	ST-Q	LT-RF	-	-	-
IVE-0011	B	1564-1	H-03	AC	LT-RF	-	-	PASSIVE	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR STARTING AIR									
1VG-0003	C	1609-4.0	J-12	C	MTO-Q	-	-	-	16
1VG-0004	C	1609-4.0	E-12	C	MTO-Q	-	-	-	16
1VG-0017	C	1609-4.0	J-06	C	MTO-Q	-	-	CS-VG1	16
1VG-0018	C	1609-4.0	I-06	C	MTO-Q	-	-	CS-VG1	16
1VG-0019	C	1609-4.0	E-06	C	MTO-Q	-	-	CS-VG1	16
1VG-0020	C	1609-4.0	D-06	C	MTO-Q	-	-	CS-VG1	16
1VG-0061	C	1609-4.0	K-02	B	ST-Q	-	-	-	16
1VG-0062	C	1609-4.0	K-02	B	ST-Q	-	-	-	16
1VG-0063	C	1609-4.0	H-02	B	ST-Q	-	-	-	16
1VG-0064	C	1609-4.0	I-02	B	ST-Q	-	-	-	16
1VG-0065	C	1609-4.0	E-02	B	ST-Q	-	-	-	16
1VG-0066	C	1609-4.0	F-02	B	ST-Q	-	-	-	16
1VG-0067	C	1609-4.0	C-02	B	ST-Q	-	-	-	16
1VG-0068	C	1609-4.0	C-02	B	ST-Q	-	-	-	16
1VG-0115	C	1609-4.0	K-09	C	MTO-Q	-	-	-	-
1VG-0116	C	1609-4.0	H-09	C	MTO-Q	-	-	-	-
1VG-0117	C	1609-4.0	F-09	C	MTO-Q	-	-	-	-
1VG-0118	C	1609-4.0	C-09	C	MTO-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** INSTRUMENT AIR									
1VI-0040	B	1605-1.3	H-04	AC	MTC-Q	LT-RF	VI2	MT-RF*	16
1VI-0124	B	1605-1.2	D-03	AC	MTC-Q	LT-RF	VI1	MT-RF*	16
1VI-0129B	B	1605-1.17	J-06	A	ST-Q	LT-RF	-	-	16
1VI-0135	C	1605-1.13	I-10	AC	MTC-Q	LT	VI3	-	16
1VI-0136	C	1605-1.13	I-10	AC	MTC-Q	LT	VI3	-	16
1VI-0137	C	1605-1.13	J-04	AC	MTC-Q	LT	VI3	-	16
1VI-0138	C	1605-1.13	J-03	AC	MTC-Q	LT	VI3	-	16
1VI-0139	C	1605-1.13	H-04	AC	MTC-Q	LT	VI3	-	16
1VI-0140	C	1605-1.13	H-03	AC	MTC-Q	LT	VI3	-	16
1VI-0141	C	1605-1.13	I-09	AC	MTC-Q	LT	VI3	-	16
1VI-0142	C	1605-1.13	I-09	AC	MTC-Q	LT	VI3	-	16
1VI-0148B	B	1605-1.14	C-04	A	ST-Q	LT-RF	-	-	16
1VI-0149	B	1605-1.2	I-03	AC	MTC-Q	LT-RF	VI1	MT-RF*	16
1VI-0150B	B	1605-1.14	B-03	A	ST-Q	LT-RF	-	-	16
1VI-0160B	B	1605-1.17	C-06	A	ST-Q	LT-RF	-	-	16
1VI-0161	B	1605-1.3	E-04	AC	MTC-Q	LT-RF	VI2	MT-RF*	16
1VI-0362A	B	1605-1.2	I-02	A	ST-Q	LT-RF	-	-	16

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT PURGE VENTILATION									
1VP-0001B	B	1576-1	I-06	A	LT-TS	-	-	-	14
1VP-0002A	B	1576-1	I-07	A	LT-TS	-	-	-	14
1VP-0003B	B	1576-1	K-06	A	LT-TS	-	-	-	14
1VP-0004A	B	1576-1	K-07	A	LT-TS	-	-	-	14
1VP-0006B	B	1576-1	E-06	A	LT-TS	-	-	-	14
1VP-0007A	B	1576-1	E-07	A	LT-TS	-	-	-	14
1VP-0008B	B	1576-1	D-06	A	LT-TS	-	-	-	14
1VP-0009A	B	1576-1	D-07	A	LT-TS	-	-	-	14
1VP-0010A	B	1576-1	J-08	A	LT-TS	-	-	-	14
1VP-0011B	B	1576-1	J-09	A	LT-TS	-	-	-	14
1VP-0012A	B	1576-1	I-08	A	LT-TS	-	-	-	14
1VP-0013B	B	1576-1	I-09	A	LT-TS	-	-	-	14
1VP-0015A	B	1576-1	F-08	A	LT-TS	-	-	-	14
1VP-0016B	B	1576-1	F-09	A	LT-TS	-	-	-	14
1VP-0017A	B	1576-1	B-07	A	LT-TS	-	-	-	14
1VP-0018B	B	1576-1	B-06	A	LT-TS	-	-	-	14
1VP-0019A	B	1576-1	B-08	A	LT-TS	-	-	-	14
1VP-0020B	B	1576-1	B-09	A	LT-TS	-	-	-	14

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT AIR RELEASE AND ADDITION									
1VQ-0001A	B	1585-1.0	J-04	A	ST-Q	LT-RF	-	-	16
1VQ-0002B	B	1585-1.0	J-06	A	ST-Q	LT-RF	-	-	16
1VQ-0005B	B	1585-1.0	E-06	A	ST-Q	LT-RF	-	-	16
1VQ-0006A	B	1585-1.0	E-03	A	ST-Q	LT-RF	-	-	16

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McGuire Nuclear Station
PUMP AND VALVE IN SERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** STATION AIR									
1VS-0012B	B	1605-2.2	K-05	A	ST-Q	LT-RF	-	-	-
1VS-0013	B	1605-2.2	I-05	AC	MTC-Q	LT-RF	VS1	MT-RF*	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONT. AIR RETURN EXCHANGE AND HYDROGEN ADD.									
1VX-0001A	B	1557-1	I-03	B	ST-Q	-	-	-	-
1VX-0002B	B	1557-1	I-12	B	ST-Q	-	-	-	-
1VX-0030	B	1557-1	J-03	AC	MTC-Q	LT-RF	VX1	MT-RF	-
1VX-0031A	B	1557-1	J-13	A	ST-Q	LT-RF	-	-	16
1VX-0033B	B	1557-1	J-12	A	ST-Q	LT-RF	-	-	16
1VX-0034	B	1557-1	K-12	A	LT-RF	-	-	PASSIVE	-
1VX-0040	B	1557-1	K-03	A	LT-RF	-	-	PASSIVE	-

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
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** EQUIPMENT DECONTAMINATION

1WE-0013	B	1568-1.0	E-08	A	LT-RF	-	-	PASSIVE	-
1WE-0023	B	1568-1.0	E-10	A	LT-RF	-	-	PASSIVE	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** LIQUID WASTE RECYCLE									
1WL-0001B	B	1565-1.1	L-11	A	ST-Q	LT-RF	-	-	-
1WL-0002A	B	1565-1.1	K-13	A	ST-Q	LT-RF	-	-	-
1WL-0024	B	1565-1.1	J-14	AC	MTC-Q	LT-RF	WL2	MT-RF*	-
1WL-0039A	B	1565-1.1	J-05	A	ST-Q	LT-RF	-	-	-
1WL-0041B	B	1565-1.1	K-05	A	ST-Q	LT-RF	-	-	-
1WL-0064A	B	1565-1.0	J-03	A	ST-Q	LT-RF	-	-	-
1WL-0065B	B	1565-1.0	K-05	A	ST-Q	LT-RF	-	-	-
1WL-0264	B	1565-1.0	J-02	AC	LT-RF	-	-	PASSIVE	-
1WL-0321A	B	1565-7.0	H-07	A	ST-Q	LT-RF	-	-	-
1WL-0322B	B	1565-7.0	I-06	A	ST-Q	LT-RF	-	-	-
1WL-0385	B	1565-7.0	H-07	AC	MTC-Q	LT-RF	WL3	MT-RF*	-
1WL-0466								DELETED	14
1WL-1301B	B	1565-1.0	G-03	A	ST-Q	LT-RF	-	-	-
1WL-1302A	A	1565-1.0	E-04	A	ST-Q	LT-RF	-	-	-

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR ROOM SUMP PUMP									
1WN-0003	C	1609-7.0	L-11	C	MT0,C-Q	-	-	-	-
1WN-0005	C	1609-7.0	K-11	C	MT0,C-Q	-	-	-	-
1WN-0007	C	1609-7.0	J-11	C	MTC-Q	-	-	-	-
1WN-0011	C	1609-7.0	F-11	C	MT0,C-Q	-	-	-	-
1WN-0013	C	1609-7.0	E-11	C	MT0,C-Q	-	-	-	-
1WN-0015	C	1609-7.0	D-11	C	MTC-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTROL AREA CHILLED WATER									
1YC-0002A	C	1618-1	H-02	B	ST-Q	-	-	-	-
1YC-0013	C	1618-1	K-09	C	MTO-Q	-	-	-	-
1YC-0014	C	1618-1	K-10	C	MTO-Q	-	-	-	-
1YC-0016A	C	1618-1	J-12	B	ST-Q	-	-	-	-
1YC-0017B	C	1618-1	H-12	B	ST-Q	-	-	-	-
1YC-0027B	C	1618-1	E-14	B	ST-Q	-	-	-	-
1YC-0029A	C	1618-1	G-12	B	ST-Q	-	-	-	-
1YC-0030A	C	1618-1	F-14	B	ST-Q	-	-	-	-
1YC-0038A	C	1618-1	E-12	B	ST-Q	-	-	-	-
1YC-0039B	C	1618-1	F-12	B	ST-Q	-	-	-	-
1YC-0040B	C	1618-1	E-12	B	ST-Q	-	-	-	-
1YC-0054	C	1618-1	H-09	B	FS-Q	-	-	-	16
1YC-0076	C	1618-1	H-04	B	FS-Q	-	-	-	16
1YC-0083B	C	1618-1	F-02	B	ST-Q	-	-	-	-
1YC-0094	C	1618-1	C-09	C	MTO-Q	-	-	-	-
1YC-0095	C	1618-1	C-10	C	MTO-Q	-	-	-	-
1YC-0099B	C	1618-1	D-12	B	ST-Q	-	-	-	-
1YC-0113	C	1618-1	F-09	B	FS-Q	-	-	-	16
1YC-0135	C	1618-1	F-04	B	FS-Q	-	-	-	16
1YC-0148	C	1618-2	E-02	B	FS-Q	-	-	-	16
1YC-0162	C	1618-2	E-03	B	FS-Q	-	-	-	16
1YC-0176	C	1618-2	E-05	B	FS-Q	-	-	-	16
1YC-0190	C	1618-2	E-07	B	FS-Q	-	-	-	16
1YC-0204	C	1618-2	E-08	B	FS-Q	-	-	-	16
1YC-0219	C	1618-2	E-10	B	FS-Q	-	-	-	16
1YC-0232	C	1618-2	E-12	B	FS-Q	-	-	-	16
1YC-0246	C	1618-2	E-14	B	FS-Q	-	-	-	16
1YC-0347	C	1618-4	G-05	B	FS-Q	-	-	-	16
1YC-0357	C	1618-4	G-12	R	FS-Q	-	-	-	16

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAKEUP DEMINERALIZED WATER									
1YM-0115B	B	1601-2.4	C-09	A	ST-Q	LT-RF	-	-	-
1YM-0116	B	1601-2.4	C-11	AC	MTC-Q		YM1	RF*	-

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McGuire Nuclear Station
PUMP AND VALVE INSPECTION
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** STEAM GENERATOR BLOWDOWN RECYCLE									
2BB-0001B	B	2580-1.0	H-02	B	ST-Q	-	-	-	-
2BB-0002B	B	2580-1.0	H-04	B	ST-Q	-	-	-	-
2BB-0003B	B	2580-1.0	H-12	B	ST-Q	-	-	-	-
2BB-0004B	B	2580-1.0	H-10	B	ST-Q	-	-	-	-
2BB-0005A	B	2580-1.0	F-02	B	ST-Q	-	-	-	-
2BB-0006A	B	2580-1.0	F-04	B	ST-Q	-	-	-	-
2BB-0007A	B	2580-1.0	F-12	B	ST-Q	-	-	-	-
2BB-0008A	B	2580-1.0	F-10	B	ST-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAI	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** AUXILIARY FEEDWATER									
2CA-0007AC	C	2592-1.1	B-10	B	ST-Q	-	-	-	-
2CA-0008	C	2592-1.1	B-11		MTC-Q	-	CA2	RF#	10
2CA-0009B	C	2592-1.1	C-05	B	ST-Q	-	-	-	-
2CA-0010	C	2592-1.1	C-05	C	MTC-Q	-	CA2	RF#	10
2CA-0011A	C	2592-1.1	B-04	B	ST-Q	-	-	-	-
2CA-0012	C	2592-1.1	B-03	C	MTC-Q	-	CA2	RF#	10
2CA-0015A	C	2592-1.1	D-03	B	ST-Q	-	-	-	-
2CA-0018B	C	2592-1.1	D-03	B	ST-Q	-	-	-	-
2CA-0020AB	C	2592-1.1	I-10	AC	ST-Q	LT	-	-	12
2CA-0022	C	2592-1.1	I-10	C	MTO-Q	-	-	-	-
2CA-0026	C	2592-1.1	I-04	C	MTO-Q	-	-	-	-
2CA-0027A	C	2592-1.1	J-05	AC	ST-Q	LT	-	-	12
2CA-0031	C	2592-1.1	I-07	C	MTO-Q	-	-	-	-
2CA-0032B	C	2592-1.1	I-08	AC	ST-Q	LT	-	-	12
2CA-0036AB	C	2592-1.0	L-10	B	ST-Q	-	-	-	-
2CA-0037	B	2592-1.0	K-14	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0038B	B	2592-1.0	J-14	B	ST-Q	-	-	-	-
2CA-0040B	C	2592-1.0	G-14	B	ST-Q	-	-	-	12
2CA-0041	B	2592-1.0	H-14	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0042B	B	2592-1.0	I-14	B	ST-Q	-	-	-	-
2CA-0044B	C	2592-1.0	C-11	B	ST-Q	-	-	-	12
2CA-0045	B	2592-1.0	C-09	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0046B	B	2592-1.0	D-08	B	ST-Q	-	-	-	-
2CA-0048AB	C	2592-1.0	K-08	B	ST-Q	-	-	-	-
2CA-0049	B	2592-1.0	H-08	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0050B	B	2592-1.0	G-08	B	ST-Q	-	-	-	-
2CA-0052AB	C	2592-1.0	K-07	B	ST-Q	-	-	-	-
2CA-0053	B	2592-1.0	H-07	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0054AC	B	2592-1.0	G-07	B	ST-Q	-	-	-	-
2CA-0056A	C	2592-1.0	C-04	B	ST-Q	-	-	-	-
2CA-0057	B	2592-1.0	C-06	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0058A	B	2592-1.0	D-07	B	ST-Q	-	-	-	-
2CA-0060A	C	2592-1.0	G-01	B	ST-Q	-	-	-	-
2CA-0061	B	2592-1.0	H-01	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0062A	B	2592-1.0	I-01	B	ST-Q	-	-	-	-
2CA-0064AB	C	2592-1.0	L-04	B	ST-Q	-	-	-	-
2CA-0065	B	2592-1.0	K-01	C	MTO, C-Q	-	-	CS-CA1	-
2CA-0066AC	B	2592-1.0	J-01	B	ST-Q	-	-	-	-
2CA-0086A	C	2592-1.1	C-14	B	ST-Q	-	-	-	-
2CA-0116B	C	2592-1.1	G-14	B	ST-Q	-	-	-	-
2CA-0161C								DELETED	12
2CA-0162C								DELETED	12
2CA-0165	C	2592-1.1	C-14	C	MTO, C-Q	-	CA1	RF#	12
2CA-0166	C	2592-1.1	G-14	C	MTO, C-Q	-	CA1	RF#	12

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** FEEDWATER									
2CF-0017AB	F	2591-1.1	K-03	B	ST-Q	-	-	CS-CF2	-
2CF-0020AB	F	2591-1.1	K-06	B	ST-Q	-	-	CS-CF2	-
2CF-0023AB	F	2591-1.1	K-09	B	ST-Q	-	-	CS-CF2	-
2CF-0026AB	B	2591-1.1	H-03	B	ST-Q	-	-	CS-CF1	-
2CF-0028AB	B	2591-1.1	H-06	B	ST-Q	-	-	CS-CF1	-
2CF-0030AB	B	2591-1.1	H-09	B	ST-Q	-	-	CS-CF1	-
2CF-0032AB	F	2591-1.1	K-13	B	ST-Q	-	-	CS-CF2	-
2CF-0035AB	B	2591-1.1	H-13	B	ST-Q	-	-	CS-CF1	-
2CF-0104AB	F	2591-1.1	K-12	B	ST-Q	-	-	CS-CF4	9
2CF-0105AB	F	2591-1.1	K-09	B	ST-Q	-	-	CS-CF4	9
2CF-0106AB	F	2591-1.1	K-05	B	ST-Q	-	-	CS-CF4	9
2CF-0107AB	F	2591-1.1	K-02	B	ST-Q	-	-	CS-CF4	9
2CF-0126B	B	2591-1.1	H-11	B	ST-Q	-	-	CS-CF3	8
2CF-0127B	B	2591-1.1	H-08	B	ST-Q	-	-	CS-CF3	8
2CF-0128B	B	2591-1.1	H-04	B	ST-Q	-	-	CS-CF3	8
2CF-0129B	B	2591-1.1	H-01	B	ST-Q	-	-	CS-CF3	8
2CF-0134A	B	2591-1.1	H-12	B	ST-Q	-	-	-	8
2CF-0135A	B	2591-1.1	G-09	B	ST-Q	-	-	-	8
2CF-0136A	B	2591-1.1	G-05	B	ST-Q	-	-	-	8
2CF-0137A	B	2591-1.1	G-02	B	ST-Q	-	-	-	8
2CF-0151B	B	2591-1.1	G-12	B	ST-Q	-	-	-	8
2CF-0152	B	2591-1.1	F-12	C	MTC-Q	-	-	CS-CF5	-
2CF-0153B	B	2591-1.1	G-11	B	ST-Q	-	-	-	8
2CF-0154	B	2591-1.1	F-11	C	MTC-Q	-	-	CS-CF5	-
2CF-0155B	B	2591-1.1	G-11	B	ST-Q	-	-	-	8
2CF-0156	B	2591-1.1	F-10	C	MTC-Q	-	-	CS-CF5	-
2CF-0157B	B	2591-1.1	G-12	B	ST-Q	-	-	-	8
2CF-0158	B	2591-1.1	F-12	C	MTC-Q	-	-	CS-CF5	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR ENGINE FUEL OIL									
2FD-0092	C	2609-3.0	E-13	C	MTO.C-Q	-	-	-	12
2FD-0093	C	2609-3.0	J-14	C	MTO.C-Q	-	-	-	12
2FD-0104	C	2609-3.1	E-13	C	MTO.C-Q	-	-	-	12
2FD-0105	C	2609-3.1	J-14	C	MTO.C-Q	-	-	-	12

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** REFUELING WATER									
2FW-0001A	B	2571-1.0	E-11	B	ST-Q	-	-	-	-
2FW-0004	B	2571-1.0	D-08	A	LT-RF	-	-	PASSIVE	-
2FW-0005	B	2571-1.0	C-07	AC	LT-RF	-	-	PASSIVE	-
2FW-0011	B	2571-1.0	C-02	A	LT-RF	-	-	PASSIVE	-
2FW-0013	B	2571-1.0	D-02	A	LT-RF	-	-	PASSIVE	-
2FW-0027A	B	2571-1.0	C-12	B	ST-Q	-	-	CS-FW1	-
2FW-0028	B	2571-1.0	B-11	C	MTO.C-Q	-	-	CS-FW2	10
2FW-0032B	B	2571-1.0	E-11	B	ST-Q	-	-	-	-
2FW-0033A	B	2571-1.0	F-11	B	ST-Q	-	-	-	-
2FW-0049B	B	2571-1.0	F-10	B	ST-Q	-	-	-	-
2FW-0052	E	2571-1.0	I-05	C	MTO-Q	-	-	-	-
2FW-0063	B	2571-1.0	C-03	AC	LT-RF	-	-	PASSIVE	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** AIRLOCK									
21A-5080	B	2499-1A1	N/A	A	ST-Q	LT-RF	-	-	12
21A-5160	B	2499-1A1	N/A	A	ST-Q	LT-RF	-	-	12
21A-5340	B	2499-1A1	N/A		LT-RF	-	-	-	12
21A-5350	B	2499-1A1	N/A		LT-RF	-	-	-	12
21A-5360	C	2499-1A1	N/A	AC	LT-RF	-	1A1	-	12
21A-5370	C	2499-1A1	N/A	AC	LT-RF	-	1A1	-	12
21A-5380	C	2499-1A1	N/A	AC	LT-RF	-	1A1	-	12
21A-5390	C	2499-1A1	N/A	AC	LT-RF	-	1A1	-	12

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** COMPONENT COOLING									
2KC-0001A	C	2573-1.0	C-07	B	ST-Q	-	-	-	-
2KC-0002B	C	2573-1.0	C-08	B	ST-Q	-	-	-	-
2KC-0003A	C	2573-1.0	C-07	B	ST-Q	-	-	-	-
2KC-0005	C	2573-1.0	F-04	C	MTO-Q	-	-	-	-
2KC-0008	C	2573-1.0	F-04	C	MTO-Q	-	-	-	-
2KC-0011	C	2573-1.0	F-11	C	MTO-Q	-	-	-	-
2KC-0014	C	2573-1.0	F-11	C	MTO-Q	-	-	-	-
2KC-0018B	C	2573-1.0	C-08	B	ST-Q	-	-	-	-
2KC-0047	B	2573-4.0	L-07	AC	MTC-Q	LT-RF	KC5	MT-RF	-
2KC-0050A	C	2573-1.0	K-07	B	ST-Q	-	-	-	-
2KC-0051A	C	2573-1.0	J-05	B	ST-Q	-	-	-	-
2KC-0053B	C	2573-1.0	K-08	B	ST-Q	-	-	-	-
2KC-0054B	C	2573-1.0	J-10	B	ST-Q	-	-	-	-
2KC-0056A	C	2573-1.1	F-02	B	ST-Q	-	-	-	-
2KC-0057A	C	2573-1.1	D-06	B	ST-Q	-	-	-	-
2KC-0081B	C	2573-1.1	E-13	B	ST-Q	-	-	-	-
2KC-0082B	C	2573-1.1	D-09	B	ST-Q	-	-	-	-
2KC-0228B	C	2573-1.0	K-08	B	ST-Q	-	-	-	-
2KC-0230A	C	2573-1.0	K-07	B	ST-Q	-	-	-	-
2KC-0279	B	2573-3.1	K-04	AC	MTC-Q	LT-RF	KC3	MT-RF	-
2KC-0280	B	2573-3.1	D-01	AC	MTC-Q	LT-RF	KC1	MT-RF	-
2KC-0305B	B	2573-3.1	D-14	B	ST-Q	-	-	-	-
2KC-0315B	B	2573-3.1	L-13	B	ST-Q	-	-	-	-
2KC-0320A	B	2573-3.1	C-10	A	ST-Q	LT-RF	-	CS-KC4	-
2KC-0322	B	2573-3.1	C-09	AC	MTC-Q	LT-RF	KC2	MT-RF	-
2KC-0332B	B	2573-3.1	D-01	A	ST-Q	LT-RF	-	CS-KC3	-
2KC-0333A	B	2573-3.1	G-01	A	ST-Q	LT-RF	-	CS-KC3	-
2KC-0338B	B	2573-3.1	D-12	A	ST-Q	LT-RF	-	CS-KC2	-
2KC-0340	B	2573-3.1	E-12	AC	MTC-Q	LT-RF	KC4	MT-RF	12
2KC-0424B	B	2573-3.1	L-04	A	ST-Q	LT-RF	-	CS-KC1	-
2KC-0425A	B	2573-3.1	L-06	A	ST-Q	LT-RF	-	CS-KC1	-
2KC-0429B	B	2573-4.0	K-07	A	ST-Q	LT-RF	-	-	-
2KC-0430A	B	2573-4.0	K-08	A	ST-Q	LT-RF	-	-	-
2KC-0800	C	2573-1.1	I-11	C	SP-3R	-	-	10 PSIG	12
2KC-0972	C	2573-1.1	K-08	C	SP-3R	-	-	15 PSIG	12

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR COOLING WATER									
2KD-0009	C	2609-1.0	E-14	B	FS-Q	-	-	-	12
2KD-0029	C	2609-1.1	E-14	B	FS-Q	-	-	-	12

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** RADIATION MONITORING									
2MI-5580	B	2499-MI7	N/A	A	ST-Q	LT-RF	-	-	12
2MI-5581	B	2499-MI7	N/A	A	ST-Q	LT-RF	-	-	12
2MI-5582	B	2499-MI7	N/A	A	ST-Q	LT-RF	-	-	12
2MI-5583	B	2499-MI7	N/A	A	ST-Q	LT-RF	-	-	12

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** BORON RECYCLE									
2NB-0260B	B	2556-3.0	G-05	A	ST-Q	LT-RF	-	-	-
2NB-0262	B	2556-3.0	G-03	AC	MTC-Q	LT-RF	NB1	MT-RF	-

Duke Power Company
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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** REACTOR COOLANT									
2NC-0001	A	2553-2.0	K-03	C	SP-3Y	-	-	2485 PSIG	-
2NC-0002	A	2553-2.0	K-04	C	SP-3Y	-	-	2485 PSIG	-
2NC-0003	A	2553-2.0	K-05	C	SP-3Y	-	-	2485 PSIG	-
2NC-0031B	A	2553-2.0	F-05	B	ST-Q	-	-	-	-
2NC-0032B	A	2553-2.0	G-05	B	ST-Q	-	-	CS-NC1	12
2NC-0033A	A	2553-2.0	F-03	B	ST-Q	-	-	-	-
2NC-0034A	A	2553-2.0	G-03	B	ST-Q	-	-	CS-NC1	12
2NC-0035B	A	2553-2.0	F-02	B	ST-Q	-	-	-	-
2NC-0036B	A	2553-2.0	G-02	B	ST-Q	-	-	CS-NC1	12
2NC-0053B	B	2553-2.1	H-10	A	ST-Q	LT-RF	-	-	-
2NC-0054A	B	2553-2.1	H-09	A	ST-Q	LT-RF	-	-	-
2NC-0056B	B	2553-2.1	D-14	A	ST-Q	LT-RF	-	-	-
2NC-0057	B	2553-2.1	F-10	AC	LT-RF	-	-	PASSIVE	-
2NC-0141	B	2553-4.0	C-07	A	PC-Q	LT-RF	-	PASSIVE	-
2NC-0142	B	2553-4.0	B-06	A	PC-Q	LT-RF	-	PASSIVE	-
2NC-0195B	B	2553-4.0	I-08	A	LT-RF	-	-	PASSIVE	-
2NC-0196A	B	2553-4.0	H-08	A	LT-RF	-	-	PASSIVE	-
2NC-0259	B	2553-4.0	H-08	AC	MTC-Q	LT-RF	NC1	MT-RF*	-
2NC-0261	B	2553-4.0	C-08	AC	MTC-Q	LT-RF	NC1	MT-RF*	8
2NC-0272AC	A	2553-2.1	J-09	B	ST-Q	-	-	CS-NC2	12
2NC-0273AC	A	2553-2.1	J-10	B	ST-Q	-	-	CS-NC2	12
2NC-0274B	A	2553-2.1	I-09	B	ST-Q	-	-	CS-NC2	12
2NC-0275B	A	2553-2.1	I-10	B	ST-Q	-	-	CS-NC2	12

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** RESIDUAL HEAT REMOVAL									
2ND-0001B	A	2561-1.0	I-13	A	ST-Q	LT-1S	-	CS-ND1 PIV	-
2ND-0002AC	A	2561-1.0	H-13	A	ST-Q	LT-TS	-	CS-ND1 PIV	-
2ND-0004B	B	2561-1.0	E-12	B	ST-Q	-	-	-	-
2ND-0008	B	2561-1.0	D-08	C	MT0,C-Q	-	-	CS-ND6	10
2ND-0014	B	2561-1.0	D-03	B	ST-Q	-	-	-	-
2ND-0015B	B	2561-1.0	E-03	B	ST-Q	-	-	CS-ND3	-
2ND-0019A	B	2561-1.0	H-12	B	ST-Q	-	-	-	-
2ND-0023	B	2561-1.0	J-08	C	MT0,C-Q	-	-	CS-ND6	10
2ND-0029A	B	2561-1.0	J-03	B	ST-Q	-	-	-	-
2ND-0030A	B	2561-1.0	I-03	B	ST-Q	-	-	CS-ND3	-
2ND-0058A	B	2561-1.0	K-03	B	ST-Q	-	-	CS-ND2	-
2ND-0067B	B	2561-1.0	B-09	B	ST-Q	-	-	-	-
2ND-0068A	B	2561-1.0	L-09	B	ST-Q	-	-	-	-
2ND-0070	B	2561-1.0	K-03	C	MT0,C-Q	-	-	CS-ND4	10
2ND-0071	B	2561-1.0	C-04	C	MT0,C-Q	-	-	CS-ND5	10

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** ICE CONDENSOR REFRIGATION									
2NF-0228A	B	2558-4.0	K-13	A	ST-Q	LT-RF	-	LT per TS	12
2NF-0229	B	2558-4.0	F-13	AC	MTC-Q	LT-RF	NF1	MT-RF*	-
2NF-0233B	B	2558-4.0	K-12	A	ST-Q	LT-RF	-	LT per TS	12
2NF-0234A	B	2558-4.0	K-13	A	ST-Q	LT-RF	-	LT per TS	12

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** SAFETY INJECTION									
2NI-0009A	B	2562-1.0	H-12	B	ST-Q	-	-	CS-NI1	-
2NI-0010B	B	2562-1.0	G-12	B	ST-Q	-	-	CS-NI1	-
2NI-0012	B	2562-1.0	G-09	C	MTQ-Q	-	-	CS-NI14	10
2NI-0015	A	2562-1.0	K-07	C	MTQ-Q	-	-	CS-NI13	10
2NI-0017	A	2562-1.0	I-04	C	MTQ-Q	-	-	CS-NI13	10
2NI-0019	A	2562-1.0	F-04	C	MTQ-Q	-	-	CS-NI13	10
2NI-0021	A	2562-1.0	C-07	C	MTQ-Q	-	-	CS-NI13	10
2NI-0047A	B	2562-2.0	K-05	A	ST-Q	LT-RF	-	-	-
2NI-0048	B	2562-2.0	K-03	AC	MTC-Q	LT-RF	NI3	MT-RF*	-
2NI-0054A								DELETED	9
2NI-0059	A	2562-2.0	D-13	AC	MTQ,C-Q	LT-TS	NI4	PIV RF#	-
2NI-0060	A	2562-2.0	D-14	AC	MTQ,C-Q	LT-TS	NI6	PIV RF#	-
2NI-0065B								DELETED	9
2NI-0070	A	2562-2.0	H-13	AC	MTQ,C-Q	LT-TS	NI	PIV RF#	-
2NI-0071	A	2562-2.0	H-14	AC	MTQ,C-Q	LT-TS	NI6	PIV RF#	-
2NI-0076A								DELETED	9
2NI-0081	A	2562-2.1	C-03	AC	MTQ,C-Q	LT-TS	NI4	PIV RF#	-
2NI-0082	A	2562-2.1	C-03	AC	MTQ,C-Q	LT-TS	NI6	PIV RF#	-
2NI-0088B								DELETED	9
2NI-0093	A	2562-2.1	C-08	AC	MTQ,C-Q	LT-TS	NI4	PIV RF#	-
2NI-0094	A	2562-2.1	C-08	AC	MTQ,C-Q	LT-TS	NI6	PIV RF#	-
2NI-0095A	B	2562-2.1	F-11	A	ST-Q	LT-RF	-	-	-
2NI-0096B	B	2562-2.1	E-13	A	ST-Q	LT-RF	-	-	-
2NI-0100B	B	2562-3.0	F-13	B	ST-Q	-	-	CS-NI3	-
2NI-0101	B	2562-3.0	F-13	C	MTQ,C-Q	-	-	CS-NI15	10
2NI-0103A	B	2562-3.0	I-14	B	ST-Q	-	-	-	-
2NI-0114	B	2562-3.0	I-09	C	MTQ-Q	-	-	-	-
2NI-0115B	B	2562-3.0	H-09	B	ST-Q	-	-	-	-
2NI-0116	B	2562-3.0	J-09	C	MTQ,C	-	-	CS-NI16	10
2NI-0118A	B	2562-3.0	H-07	B	ST-Q	-	-	-	-
2NI-0120B	B	2562-3.0	J-07	A	ST-Q	LT-RF	-	-	-
2NI-0121A	B	2562-3.0	J-06	B	ST-Q	-	-	CS-NI5	-
2NI-0124	A	2562-3.0	J-03	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0125	A	2562-3.0	I-03	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI20	10
2NI-0126	A	2562-3.0	J-02	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI20	10
2NI-0128	A	2562-3.0	I-04	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0129	A	2562-3.0	I-03	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI20	10
2NI-0134	A	2562-3.0	H-04	AC	MTQ,C-Q	LT-TS	-	PIV CS-NI20	10
2NI-0135B	B	2562-3.0	E-14	B	ST-Q	-	-	-	-
2NI-0136B	B	2562-3.0	C-14	B	ST-Q	-	-	CS-NI21	12
2NI-0143	B	2562-3.0	F-09	C	MTQ,C-Q	-	-	-	-
2NI-0144B	B	2562-3.0	G-09	B	ST-Q	-	-	-	-
2NI-0147A	B	2562-3.0	G-11	B	ST-Q	-	-	CS-NI4	-
2NI-0148	B	2562-3.0	D-09	C	MTQ,C	-	-	CS-NI16	10
2NI-0150B	B	2562-3.0	E-07	B	ST-Q	-	-	-	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
2NI-0152B	B	2562-3.0	D-06	B	ST-Q	-	-	CS-NI6	-
2NI-0156	A	2562-3.0	D-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0157	A	2562-3.0	D-02	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0159	A	2562-3.0	B-04	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0160	A	2562-3.0	B-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI17	10
2NI-0162A	B	2562-3.1	K-11	B	ST-Q	-	-	CS-NI7	-
2NI-0165	A	2562-3.1	J-03	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	10
2NI-0167	A	2562-3.1	J-05	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	10
2NI-0169	A	2562-3.1	J-06	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	10
2NI-0171	A	2562-3.1	J-07	AC	MTO,C-Q	LT-TS	-	PIV CS-NI18	10
2NI-0173A	B	2562-3.1	I-12	B	ST-Q	-	-	CS-NI8	-
2NI-0175	A	2562-3.1	I-08	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	10
2NI-0176	A	2562-3.1	H-08	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	10
2NI-0178B	B	2562-3.1	F-12	B	ST-Q	-	-	CS-NI9	-
2NI-0180	A	2562-3.1	F-07	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	10
2NI-0181	A	2562-3.1	D-08	AC	MTO,C-Q	LT-TS	-	PIV CS-NI19	10
2NI-0183B	B	2562-3.0	G-03	B	ST-Q	-	-	CS-NI10	-
2NI-0184B	B	2562-3.1	D-12	B	ST-Q	-	-	CS-NI11	-
2NI-0185A	B	2562-3.1	B-12	B	ST-Q	-	-	CS-NI11	-
2NI-0332A	B	2562-3.0	L-14	B	ST-Q	-	-	-	-
2NI-0333B	B	2562-3.0	L-12	B	ST-Q	-	-	-	-
2NI-0334B	B	2562-3.0	L-11	B	ST-Q	-	-	-	-
2NI-0347	A	2562-1.0	I-04	C	MTO-Q	-	-	CS-NI13	10
2NI-0348	A	2562-1.0	I-05	C	MTO-Q	-	-	CS-NI13	10
2NI-0349	A	2562-1.0	C-07	C	MTO-Q	-	-	CS-NI13	10
2NI-0354	A	2562-1.0	K-07	C	MTO-Q	-	-	CS-NI13	10
2NI-0430A	B	2562-2.0	F-04	B	ST-Q	-	-	CS-NI2	-
2NI-0431B	B	2562-2.0	J-04	B	ST-Q	-	-	CS-NI2	-
2NI-0436	B	2562-2.1	G-11	AC	LT-RF	MTC-Q	NT5	MT-RF*	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** NUCLEAR SAMPLING									
2NM-0003AC	B	2572-1.0	K-03	A	ST-Q	LT-RF	-	-	-
2NM-0006AC	B	2572-1.0	J-03	A	ST-Q	-	-	-	-
2NM-0007B	B	2572-1.0	K-06	A	ST-Q	LT-RF	-	-	-
2NM-0022AC	B	2572-1.0	J-12	A	ST-Q	LT-RF	-	-	-
2NM-0025AC	B	2572-1.0	K-12	A	ST-Q	LT-RF	-	-	-
2NM-0026B	B	2572-1.0	K-09	A	ST-Q	-	-	-	-
2NM-0069	B	2572-1.1	G-09	A	LT-RF	-	-	PASSIVE	-
2NM-0072B	B	2572-1.1	I-06	A	ST-Q	LT-RF	-	-	-
2NM-0075B	B	2572-1.1	I-03	A	ST-Q	LT-RF	-	-	-
2NM-0078B	B	2572-1.1	I-10	A	ST-Q	LT-RF	-	-	-
2NM-0081B	B	2572-1.1	I-11	A	ST-Q	LT-RF	-	-	-
2NM-0082A	B	2572-1.1	E-09	A	ST-Q	LT-RF	-	-	-
2NM-0187A	B	2572-3.0	K-01	B	ST-Q	-	-	-	-
2NM-0190A	B	2572-3.0	K-02	"	ST-Q	-	-	-	-
2NM-0191B	B	2572-3.0	I-02	L	ST-Q	-	-	-	-
2NM-0197B	B	2572-3.0	K-05	B	ST-Q	-	-	-	-
2NM-0200B	F	2572-3.0	K-06	B	ST-Q	-	-	-	-
2NM-0201A	B	2572-3.0	I-06	B	ST-Q	-	-	-	-
2NM-0207A	B	2572-3.0	K-08	B	ST-Q	-	-	-	-
2NM-0210A	B	2572-3.0	K-09	B	ST-Q	-	-	-	-
2NM-0211B	B	2572-3.0	I-09	B	ST-Q	-	-	-	-
2NM-0217B	B	2572-3.0	K-11	B	ST-Q	-	-	-	-
2NM-0220B	B	2572-3.0	K-12	B	ST-Q	-	-	-	-
2NM-0221A	B	2572-3.0	I-12	B	ST-Q	-	-	-	-
2NM-0420	B	2572-1.0	J-03	AC	MTC-Q	LT-RF	NM1	MT-RF*	-
2NM-0421	B	2572-1.0	J-12	AC	MTC-Q	LT-RF	NM1	MT-RF*	-

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT SPRAY									
2NS-0001B	B	2563-1.0	C-13	B	ST-Q	-	-	-	-
2NS-0003B	B	2563-1.0	B-13	B	ST-Q	-	-	-	-
2NS-0004	B	2563-1.0	C-12	C	MTO,C-Q	-	NS2	RF#	12
2NS-0012B	B	2563-1.0	C-04	B	ST-Q	-	-	-	-
2NS-0013	B	2563-1.0	B-02	C	MTO-Q	-	NS1	RF#	-
2NS-0015B	B	2563-1.0	D-04	B	ST-Q	-	-	-	-
2NS-0016	B	2563-1.0	D-02	C	MTO-Q	-	NS1	RF#	-
2NS-0018A	B	2563-1.0	G-13	B	ST-Q	-	-	-	-
2NS-0020A	B	2563-1.0	F-13	B	ST-Q	-	-	-	-
2NS-0021	B	2563-1.0	F-12	C	MTO,C-Q	-	NS2	RF#	12
2NS-0029A	B	2563-1.0	F-04	B	ST-Q	-	-	-	-
2NS-0030	B	2563-1.0	F-02	C	MTO-Q	-	NS1	RF#	-
2NS-0032A	B	2563-1.0	H-04	B	ST-Q	-	-	-	-
2NS-0033	B	2563-1.0	H-02	C	MTO-Q	-	NS1	RF#	-
2NS-0038B	B	2563-1.0	J-05	B	ST-Q	-	-	CS-NS1	12
2NS-0041	B	2563-1.0	J-03	C	MTO-Q	-	NS1	RF#	-
2NS-0043A	B	2563-1.0	K-05	B	ST-Q	-	-	CS-NS1	12
2NS-0046	B	2576-1.0	K-03	C	MTO-Q	-	NS1	RF#	-
2NS-5550B	B	2499-NS8	N/A	A	ST-Q	LT-RF	-	-	12
2NS-5551A	B	2499-NS8	N/A	A	ST-Q	LT-RF	-	-	12

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CHEMICAL AND VOLUME CONTROL									
2NV-0001A								DELETED	12
2NV-0002A								DELETED	12
2NV-0007B	B	2554-1.2	J-11	B	ST-Q	-	-	CS-NV2	-
2NV-0021A	A	2554-1.2	E-03	B	ST-Q	-	-	CS-NV4	12
2NV-0022								DELETED	12
2NV-0024B	A	2554-1.2	D-06	B	ST-Q	-	-	-	12
2NV-0025B	A	2554-1.2	D-07	B	ST-Q	-	-	-	12
2NV-0035A	B	2554-1.2	K-07	B	ST-Q	-	-	-	12
2NV-0094AC	B	2554-1.1	J-13	B	ST-Q	-	-	CS-NV1	-
2NV-0095B	B	2554-1.1	H-13	B	ST-Q	-	-	CS-NV1	-
2NV-0141A	B	2554-2.0	B-08	B	ST-Q	-	-	CS-NV7	-
2NV-0142B	B	2554-2.0	B-07	B	ST-Q	-	-	CS-NV7	-
2NV-0150B	B	2554-2.0	F-02	B	ST-Q	-	-	CS-NV12	8
2NV-0151A	B	2554-2.0	G-02	B	ST-Q	-	-	CS-NV12	8
2NV-0221A	B	2554-3.1	H-01	B	ST-Q	-	-	CS-NV9	-
2NV-0222B	B	2554-3.1	I-01	B	ST-Q	-	-	CS-NV9	-
2NV-0223	B	2554-3.1	I-02	C	MTO,C-Q	-	-	CS-NV15	10
2NV-0225	B	2554-3.1	F-05	C	MTO,C-Q	-	-	CS-NV14	10
2NV-0227	B	2554-3.1	E-06	C	MTO,C-Q	-	-	-	-
2NV-0231	B	2554-3.1	F-10	C	MTO,C-Q	-	-	CS-NV14	10
2NV-0233	B	2554-3.1	E-10	C	MTO,C-Q	-	-	-	-
2NV-0244A	B	2554-3.0	K-08	B	ST-Q	-	-	CS-NV8	-
2NV-0245B	B	2554-3.0	K-09	B	ST-Q	-	-	CS-NV8	-
2NV-0264	B	2554-3.1	J-10	C	MTO-Q	-	-	CS-NV11	-
2NV-0265B	B	2554-3.1	J-09	B	ST-Q	-	-	CS-NV13	8
2NV-0457A	B	2554-1.2	I-07	B	ST-Q	-	-	-	-
2NV-0458A	B	2554-1.2	J-07	B	ST-Q	-	-	-	-
2NV-0459A								DELETED	12
2NV-0842AC								DELETED	12
2NV-0844								DELETED	12
2NV-0849AC	P	2554-1.3	F-08	A	ST-Q	LT-RF	-	-	-
2NV-1002	B	2554-1.3	F-10	A,C	MTC-Q	LT-RF	NV1	MT-RF	12
2NV-1007								DELETED	12
2NV-1008								DELETED	12
2NV-1009								DELETED	12
2NV-1010								DELETED	12
2NV-1012C								DELETED	12
2NV-1013C								DELETED	12
2NV-1046	B	2554-3.0	H-12	C	MTC-Q	-	-	CS-NV16	12

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VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** NUCLEAR SERVICE WATER									
2RN-0016A	C	2574-1.1	J-03	B	ST-Q	-	-	-	-
2RN-0018B	C	2574-1.1	E-02	B	ST-Q	-	-	-	-
2RN-0021A	C	2574-1.1	J-02	B	ST-Q	-	-	-	12
2RN-0022A	C	2574-1.1	H-05	B	ST-Q	-	-	-	12
2RN-0025B	C	2574-1.1	C-04	B	ST-Q	-	-	-	12
2RN-0026B	C	2574-1.1	G-05	B	ST-Q	-	-	-	12
2RN-0028	C	2574-1.1	J-09	C	MTO-Q	-	-	-	-
2RN-0030	C	2574-1.1	E-09	C	MTO-Q	-	-	-	-
2RN-0040A	C	2574-1.1	I-12	B	ST-Q	-	-	-	-
2RN-0041B	C	2574-1.1	F-12	B	ST-Q	-	-	U2 & U1 SIGNAL	-
2RN-0042A	C	2574-4.0	B-09	B	ST-Q	-	-	CS-RN4	-
2RN-0043A	C	2574-1.1	F-12	B	ST-Q	-	-	U2 & U1 SIGNAL	-
2RN-0063B	C	2574-4.0	L-10	B	ST-Q	-	-	CS-RN5	-
2RN-0064A	C	2574-4.0	L-11	B	ST-Q	-	-	CS-RN5	-
2RN-0068A	C	2574-1.1	L-12	B	ST-Q	-	-	-	12
2RN-0069A	C	2574-2.0	K-07	B	ST-Q	-	-	-	-
2RN-0070A	C	2574-2.0	E-06	B	ST-Q	-	-	-	-
2RN-0073A	C	2574-2.0	I-06	B	ST-Q	-	-	-	-
2RN-0086A	C	2574-2.0	D-12	B	ST-Q	-	-	-	-
2RN-0089A	C	2574-2.0	J-12	B	ST-Q	-	-	-	-
2RN-0103A	C	2574-2.1	C-06	B	ST-Q	-	-	-	12
2RN-0112A	C	2574-2.0	I-08	B	ST-Q	-	-	-	12
2RN-0113	C	2574-2.0	D-13	C	MTO-Q	-	RN1	RF	-
2RN-0114A	C	2574-2.1	B-11	B	ST-Q	-	-	-	12
2RN-0117A	C	2574-2.0	I-10	B	ST-Q	-	-	-	12
2RN-0126A	C	2574-2.1	D-10	B	ST-Q	-	-	-	8
2RN-0130A	C	2574-2.1	C-10	B	ST-Q	-	-	-	12
2RN-0134A	C	2574-2.1	C-07	B	ST-Q	-	-	-	-
2RN-0137A	C	2574-2.1	H-07	B	ST-Q	-	-	-	-
2RN-0140A	C	2574-2.0	E-14	B	ST-Q	-	-	-	12
2RN-0161B	C	2574-1.1	B-12	B	ST-Q	-	-	-	12
2RN-0162B	C	2574-3.0	J-07	B	ST-Q	-	-	-	-
2RN-0166A	C	2574-2.0	I-01	B	ST-Q	-	-	-	-
2RN-0170B	C	2574-3.0	I-01	B	ST-Q	-	-	-	-
2RN-0171B	C	2574-3.0	F-07	B	ST-Q	-	-	-	-
2RN-0174B	C	2574-3.0	I-07	B	ST-Q	-	-	-	-
2RN-0187B	C	2574-3.0	F-12	B	ST-Q	-	-	-	-
2RN-0190B	C	2574-3.0	J-12	B	ST-Q	-	-	-	-
2RN-0204B	C	2574-3.1	C-05	B	ST-Q	-	-	-	12
2RN-0213B	C	2574-3.0	J-08	B	ST-Q	-	-	-	12
2RN-0214	C	2574-3.0	D-14	C	MTO-Q	-	RN1	RF	-
2RN-0215B	C	2574-3.1	B-11	B	ST-Q	-	-	-	12
2RN-0218B	C	2574-3.0	I-10	B	ST-Q	-	-	-	12
2RN-0227B	C	2574-3.1	E-10	B	ST-Q	-	-	-	-
2RN-0231B	C	2574-3.1	C-10	B	ST-Q	-	-	-	12

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TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
2RN-0235B	C	2574-3.1	E-07	B	ST-Q	-	-	-	-
2RN-0238B	C	2574-3.1	I-07	B	ST-Q	-	-	-	-
2RN-0240B	C	2574-3.0	F-13	B	ST-Q	-	-	-	12
2RN-0252B	C	2574-4.0	E-02	A	ST-Q	LT-RF	-	CS-RN2	-
2RN-0253A	C	2574-4.0	C-02	A	ST-Q	LT-RF	-	CS-RN2	-
2RN-0276A	C	2574-4.0	I-02	A	ST-Q	LT-RF	-	CS-RN3	-
2RN-0277B	C	2592-4.0	H-02	A	ST-Q	LT-RF	-	CS-RN3	-
2RN-0279B	C	1574-1.0	C-02	B	ST-Q	-	-	-	-
2RN-0296A	C	2574-1.1	L-13	B	ST-Q	-	-	-	-
2RN-0297B	C	2574-3.0	L-05	B	ST-Q	-	-	-	-
2RN-0299A	C	1574-1.0	C-02	B	ST-Q	-	-	-	-

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VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT VENTILATION COOLING WATER									
2RV-0032A	B	2604-3.0	K-10	A	ST-Q	LT-RF	-	CS-RV1	-
2RV-0033B	B	2604-3.0	K-12	A	ST-Q	LT-RF	-	CS-RV1	-
2RV-0076A	B	2604-3.0	C-12	A	ST-Q	LT-RF	-	CS-RV1	-
2RV-0077B	B	2604-3.0	C-10	A	ST-Q	LT-RF	-	CS-RV1	-
2RV-0079A	B	2604-3.0	K-07	A	ST-Q	LT-RF	-	-	-
2RV-0080B	B	2604-3.0	K-06	A	ST-Q	LT-RF	-	-	-
2RV-0101A	B	2604-3.0	C-05	A	ST-Q	LT-RF	-	-	-
2RV-0102B	B	2604-3.0	C-07	A	ST-Q	-	-	-	-
2RV-0126								DELETED	12
2RV-0130								DELETED	12
2RV-0445	B	2604-3.0	J-12	C	LT-RF	-	-	135 PSIG	12
2RV-0446	B	2604-3.0	B-12	C	LT-RF	-	-	135 PSIG	12

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VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM TO AUX. EQUIPMENT									
2SA-0005	B	2593-1.2	F-04	C	MT0,C-Q	-	-	-	10
2SA-0006	B	2593-1.2	F-03	C	MT0,C-Q	-	-	-	10
2SA-0048AEC	B	2593-1.2	E-04	B	ST-Q	-	-	-	-
2SA-0049AB	B	2593-1.2	F-02	B	ST-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM									
2SM-0001AB	B	2593-1.0	K-13	B	ST-Q	-	-	CS-SM1	-
2SM-0003AB	B	2593-1.0	H-13	B	ST-Q	-	-	CS-SM1	-
2SM-0005AB	B	2593-1.0	I-14	B	ST-Q	-	-	CS-SM1	-
2SM-0007AB	B	2593-1.0	C-14	B	ST-Q	-	-	CS-SM1	-
2SM-0009AB	B	2593-1.0	J-13	B	ST-Q	-	-	-	12
2SM-0010AB	B	2593-1.0	G-13	B	ST-Q	-	-	-	12
2SM-0011AB	B	2593-1.0	I-13	B	ST-Q	-	-	-	12
2SM-0012AB	B	2593-1.0	C-13	B	ST-Q	-	-	-	12

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAIN STEAM VENT TO ATMOSPHERE									
2SV-0001AB	B	2593-1.3	L-05	B	ST-Q	-	-	-	-
2SV-0002	B	2593-1.3	K-06	C	SP-5Y	-	-	1170 PSIG	-
2SV-0003	B	2593-1.3	K-07	C	SP-5Y	-	-	1190 PSIG	-
2SV-0004	B	2593-1.3	K-09	C	SP-5Y	-	-	1205 PSIG	-
2SV-0005	B	2593-1.3	K-11	C	SP-5Y	-	-	1220 PSIG	-
2SV-0006	B	2593-1.3	K-12	C	SP-5Y	-	-	1225 PSIG	-
2SV-0007ABC	B	2593-1.3	G-05	B	ST-Q	-	-	-	-
2SV-0008	B	2593-1.3	E-06	C	SP-5Y	-	-	1170 PSIG	-
2SV-0009	B	2593-1.3	E-07	C	SP-5Y	-	-	1190 PSIG	-
2SV-0010	B	2593-1.3	E-09	C	SP-5Y	-	-	1205 PSIG	-
2SV-0011	B	2593-1.3	E-11	C	SP-5Y	-	-	1220 PSIG	-
2SV-0012	B	2593-1.3	E-12	C	SP-5Y	-	-	1225 PSIG	-
2SV-0013AB	B	2593-1.0	L-04	B	ST-Q	-	-	-	-
2SV-0014	C	2593-1.0	K-05	C	SP-5Y	-	-	1170 PSIG	-
2SV-0015	B	2593-1.0	K-07	C	SP-5Y	-	-	1190 PSIG	-
2SV-0016	B	2593-1.0	K-09	C	SP-5Y	-	-	1205 PSIG	-
2SV-0017	B	2593-1.0	K-10	C	SP-5Y	-	-	1220 PSIG	-
2SV-0018	B	2593-1.0	K-12	C	SP-5Y	-	-	1225 PSIG	-
2SV-0019AB	B	2593-1.0	G-05	B	ST-Q	-	-	-	-
2SV-0020	B	2593-1.0	E-05	C	SP-5Y	-	-	1170 PSIG	-
2SV-0021	B	2593-1.0	E-07	C	SP-5Y	-	-	1190 PSIG	-
2SV-0022	B	2593-1.0	E-09	C	SP-5Y	-	-	1205 PSIG	-
2SV-0023	B	2593-1.0	E-10	C	SP-5Y	-	-	1220 PSIG	-
2SV-0024	B	2593-1.0	E-12	C	SP-5Y	-	-	1225 PSIG	-

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** BREATHING AIR									
2VB-0049B	B	2605-3.1	F-02	A	ST-Q	LT-RF	-	-	-
2VB-0050	B	2605-3.1	E-04	AC	MTC-Q	LT-RF	VB1	MT-RF*	-

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** ANNULUS VENTILATION									
2VE-0005A	B	2564-1	G-04	A	ST-Q	LT-RF	-	-	-
2VE-0006B	B	2564-1	G-04	A	ST-Q	LT-RF	-	-	-
2VE-0008A	B	2564-1	J-02	B	ST-Q	-	-	-	-
2VE-0010A	B	2564-1	H-03	A	ST-Q	LT-RF	-	-	-
2VE-0011	B	2564-1	H-03	AC	LT-RF	-	-	PASSIVE	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR STARTING AIR									
2VG-0003	C	2609-4.0	J-12	C	MTO-Q	-	-	-	12
2VG-0004	C	2609-4.0	F-12	C	MTO-Q	-	-	-	12
2VG-0017	C	2609-4.0	J-06	C	MTO-Q	-	-	-	12
2VG-0018	C	2609-4.0	I-06	C	MTO-Q	-	-	-	12
2VG-0019	C	2609-4.0	E-06	C	MTO-Q	-	-	-	12
2VG-0020	C	2609-4.0	D-06	C	MTO-Q	-	-	-	12
2VG-0061	C	2609-4.0	K-02	B	ST-Q	-	-	-	12
2VG-0062	C	2609-4.0	K-02	B	ST-Q	-	-	-	12
2VG-0063	C	2609-4.0	I-02	B	ST-Q	-	-	-	12
2VG-0064	C	2609-4.0	H-02	B	ST-Q	-	-	-	12
2VG-0065	C	2609-4.0	F-02	B	ST-Q	-	-	-	12
2VG-0066	C	2609-4.0	E-02	B	ST-Q	-	-	-	12
2VG-0067	C	2609-4.0	C-02	B	ST-Q	-	-	-	12
2VG-0068	C	2609-4.0	C-02	B	ST-Q	-	-	-	12
2VG-0115	C	2609-4.0	K-09	C	MTO-Q	-	-	-	-
2VG-0116	C	2609-4.0	H-09	C	MTO-Q	-	-	-	-
2VG-0117	C	2609-4.0	F-09	C	MTO-Q	-	-	-	-
2VG-0118	C	2609-4.0	C-09	C	MTO-Q	-	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** INSTRUMENT AIR									
2VI-0040	B	2605-1.3	J-13	AC	MTC-Q	LT-RF	VI2	MT-RF*	-
2VI-0124	B	2605-1.2	B-04	AC	MTC-Q	LT-RF	VI1	MT-RF*	-
2VI-0129B	B	2605-1.3	J-11	A	ST-Q	LT-RF	-	-	-
2VI-0135	C	2605-1.3	J-07	AC	MTC-Q	LT	VI3	-	12
2VI-0136	C	2605-1.3	J-08	AC	MTC-Q	LT	VI3	-	12
2VI-0137	C	2605-1.3	D-06	AC	MTC-Q	LT	VI3	-	12
2VI-0138	C	2605-1.3	D-06	AC	MTC-Q	LT	VI3	-	12
2VI-0139	C	2605-1.3	D-07	AC	MTC-Q	LT	VI3	-	12
2VI-0140	C	2605-1.3	D-07	AC	MTC-Q	LT	VI3	-	12
2VI-0141	C	2605-1.3	J-06	AC	MTC-Q	LT	VI3	-	12
2VI-0142	C	2605-1.3	J-06	AC	MTC-Q	LT	VI3	-	12
2VI-0148B	B	2605-1.2	E-03	A	ST-Q	LT-RF	-	-	-
2VI-0149	B	2605-1.2	E-05	AC	MTC-Q	LT-RF	VI1	MT-RF*	-
2VI-0150B	B	2605-1.2	C-02	A	ST-Q	LT-RF	-	-	-
2VI-0160B	B	2605-1.3	D-11	A	ST-Q	LT-RF	-	-	-
2VI-0161	B	2605-1.3	D-13	AC	MTC-Q	LT-RF	VI2	MT-RF*	-
2VI-0362A	B	2605-1.2	D-04	A	ST-Q	LT-RF	-	-	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT PURGE VENTILATION									
2VP-0001B	B	2576-1	I-06	A	LT-TS	-	-	-	10
2VP-0002A	B	2576-1	I-07	A	LT-TS	-	-	-	10
2VP-0003B	B	2576-1	K-06	A	LT-TS	-	-	-	10
2VP-0004A	B	2576-1	K-07	A	LT-TS	-	-	-	10
2VP-0006B	B	2576-1	E-06	A	LT-TS	-	-	-	10
2VP-0007A	B	2576-1	E-07	A	LT-TS	-	-	-	10
2VP-0008B	B	2576-1	D-06	A	LT-TS	-	-	-	10
2VP-0009A	B	2576-1	D-07	A	LT-TS	-	-	-	10
2VP-0010A	B	2576-1	J-08	A	LT-TS	-	-	-	10
2VP-0011B	B	2576-1	J-09	A	LT-TS	-	-	-	10
2VP-0012A	B	2576-1	I-08	A	LT-TS	-	-	-	10
2VP-0013B	B	2576-1	I-09	A	LT-TS	-	-	-	10
2VP-0015A	B	2576-1	F-08	A	LT-TS	-	-	-	10
2VP-0016B	B	2576-1	F-09	A	LT-TS	-	-	-	10
2VP-0017A	B	2576-1	B-07	A	LT-TS	-	-	-	10
2VP-0018B	B	2576-1	B-06	A	LT-TS	-	-	-	10
2VP-0019A	B	2576-1	B-08	A	LT-TS	-	-	-	10
2VP-0020B	B	2576-1	B-09	A	LT-TS	-	-	-	10

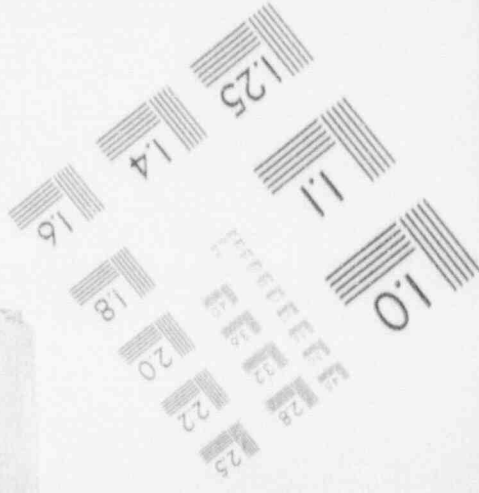
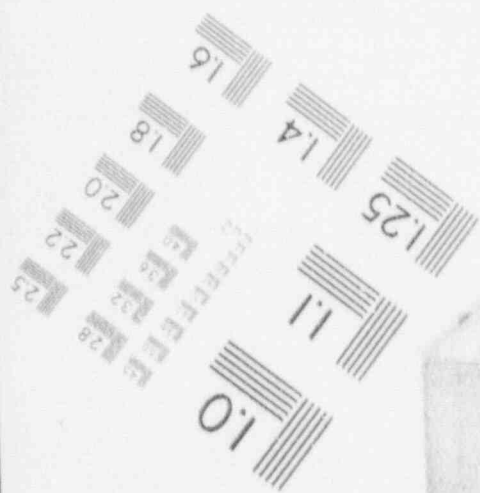
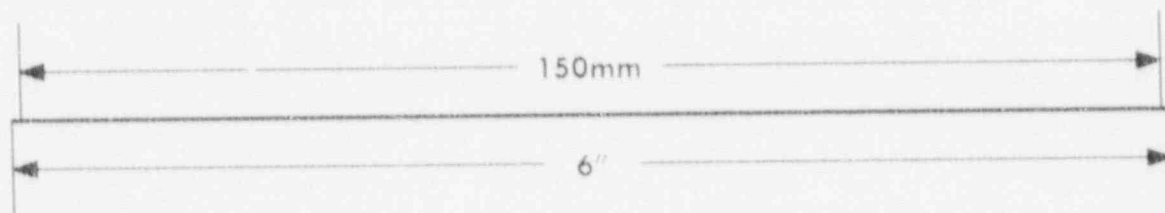
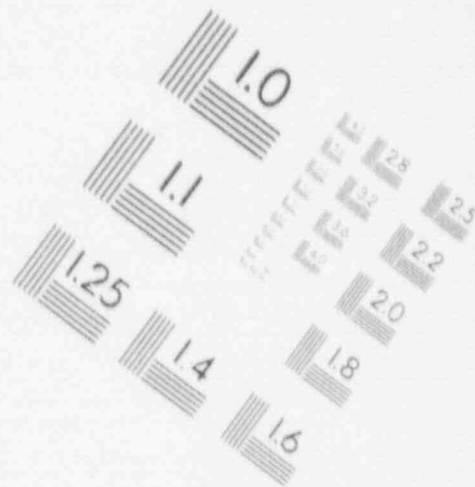
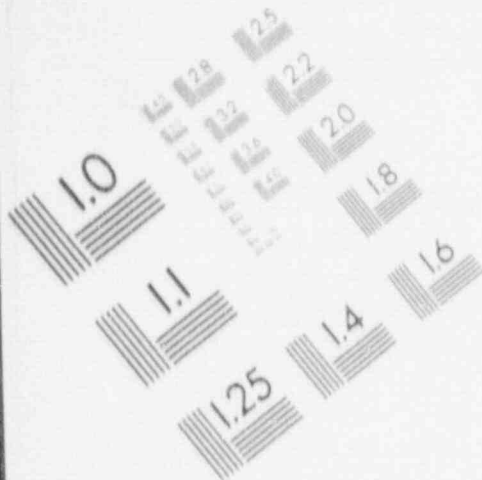
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Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONTAINMENT AIR RELEASE AND ADDITION									
2VQ-0001A	B	2585-1.0	J-04	A	ST-Q	LT-RF	-	-	12
2VQ-0002B	B	2585-1.0	J-06	A	ST-Q	LT-RF	-	-	12
2VQ-0005B	B	2585-1.0	E-06	A	ST-Q	LT-RF	-	-	12
2VQ-0006A	B	2585-1.0	E-03	A	ST-Q	LT-RF	-	-	12

1

IMAGE EVALUATION TEST TARGET (MT-3)



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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
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** STATION AIR

2VS-0012B	B	2605-2.2	F-08	A	ST-Q	LT-RF	-	-	-
2VS-0013	B	2603-2.2	H-08	AC	MTC-Q	LT-RF	VS1	MT-RF*	-

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** CONT. AIR RETURN EXCHANGE AND HYDROGEN ADD.									
2VX-0001A	B	2557-1	I-03	B	ST-Q	-	-	-	-
2VX-0002B	B	2557-1	I-12	B	ST-Q	-	-	-	-
2VX-0030	B	2557-1	J-03	AC	MTC-Q	LT-RF	VX1	MT-RF	-
2VX-0031A	B	2557-1	J-13	A	ST-Q	LT-RF	-	-	12
2VX-0033B	B	2557-1	J-12	A	ST-Q	LT-RF	-	-	12
2VX-0034	B	2557-1	K-12	A	LT-RF	-	-	PASSIVE	-
2VX-0040	B	2557-1	K-03	A	LT-RF	-	-	PASSIVE	-

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL FLOW DIAGRAM	FLOW CJOR	CAT TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
**							
2WE-0013						DELETED	12
2WE-0023						DELETED	12

Duke Power Company
McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COORD	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** LIQUID WASTE RECYCLE									
2WL-0001B	B	2565-1.1	L-11	A	ST-Q	LT-RF	-	-	-
2WL-0002A	B	2565-1.1	K-13	A	ST-Q	LT-RF	-	-	-
2WL-0024	B	2565-1.1	J-14	AC	MTC-Q	LT-RF	WL2	MT-RF*	-
2WL-0039A	B	2565-1.1	J-05	A	ST-Q	LT-RF	-	-	-
2WL-0041B	B	2565-1.1	K-05	A	ST-Q	LT-RF	-	-	-
2WL-0064A	B	2565-1.0	J-03	A	ST-Q	LT-RF	-	-	-
2WL-0065B	B	2565-1.0	K-05	A	ST-Q	LT-RF	-	-	-
2WL-0264	B	2565-1.0	J-02	AC	LT-RF	-	-	PASSIVE	-
2WL-0321A	B	2565-7.0	I-05	A	ST-Q	LT-RF	-	-	-
2WL-0322B	B	2565-7.0	H-04	A	ST-Q	LT-RF	-	-	-
2WL-0385	B	2565-7.0	J-05	AC	MTC-Q	LT-RF	WL3	MT-RF*	-
2WL-0466								DELETED	9
2WL-1301B	B	2565-1.0	G-03	A	ST-Q	LT-RF	-	-	-
2WL-1302A	B	2565-1.0	E-04	A	ST-Q	LT-RF	-	-	-

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PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** DIESEL GENERATOR ROOM SUMP PUMP									
2WN-0003	C	2609-7.0	L-11	C	MT0,C-Q	-	-	-	-
2WN-0005	C	2609-7.0	K-11	C	MT0,C-Q	-	-	-	-
2WN-0007	C	2609-7.0	J-11	C	MTC-Q	-	-	-	-
2WN-0011	C	2609-7.0	F-11	C	MT0,C-Q	-	-	-	-
2WN-0013	C	2609-7.0	E-11	C	MT0,C-Q	-	-	-	-
2WN-0015	C	2609-7.0	D-11	C	MTC-Q	-	-	-	-

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McGuire Nuclear Station
PUMP AND VALVE INSERVICE
TESTING PROGRAM

VALVE	CL	FLOW DIAGRAM	FLOW COOR	CAT	TEST REQ1	TEST REQ2	RR	TEST ALTERNATIVES/ REMARKS	R E V
** MAKEUP DEMINERALIZED WATER									
2YM-0115B	B	1601-2.4	C-09	A	ST-Q	LT-RF	-	-	-
2YM-0116	B	1601-2.4	C-04	AC	MTC-Q	LT-RF	YM1	MT-RF*	-

ATTACHMENT 2
McGUIRE UNITS 1 AND 2 IWP PROGRAM REVISIONS

Note: Revisions are both Units unless otherwise indicated.

1. General Relief Request I.3(B)

Relief request resubmitted for review by NRC Staff.
Also, Attachment 2 is provided as additional information
for comparing relief request with OM-6 requirements.

2. Section I.2

a) Changed Table to reflect change in relief request for
bearing temperature measurements.

b) IWP CA testing is conducted quarterly rather
than monthly

c) Corrected Containment Spray pumps flow diagram number.

d) Changed lubrication level verification for FD and WN
pumps to NR as this code requirement does not apply to
these pumps.

e) Deleted Standby Makeup Pump from IWP program.

f) Corrected legend symbols

3. Deleted Relief Request I.4(A). (Unit 1 only)

4. Relief Request I.4(B). (I.4(A) for Unit 2)

a) Added additional justification for widened acceptance
range.

b) Deleted lubrication level verification since this Code
requirement does not apply to these pumps.

5. Relief Request I.4(C) (I.4(B) for Unit 2)

a) Clarified quarterly testing of NI pumps.

b) Clarified refueling test options for full flow
testing of NI pumps.

6. Relief Request I.4(D) (I.4(C) for Unit 2)

a) Clarified quarterly testing of ND pumps.

b) Changed refueling testing to cold shutdown.

c) Clarified test options for full flow testing
of ND pumps.

ATTACHMENT 2
McGUIRE UNITS 1 AND 2 IWP PROGRAM REVISIONS

7. Relief Request I.4(E) (I.4(D) for Unit 2)

- a) Clarified quarterly testing of NV pumps.
- b) Clarified test options for full flow testing of NV pumps.

8. Relief Request I.4(F) (I.4(E) for Unit 2)

Deleted discussion of lubricant level observation for WN pumps as this code requirement does not apply to these pumps.

9. Relief Request I.4(G) (I.4(F) for Unit 2)

Relief request was deleted since Standby Makeup Pump was deleted from IST program.

SECTION I.2

McGUIRE NUCLEAR STATION - UNIT 1
PUMP INSERVICE TESTING PROGRAM

PUMPS	Safety Class	Test Frequency	Speed, N	Inlet Press., Pi	Diff. Press., P	Flow Rate, Q	Vibration, V	Lubrication Level	Bearing Temp., Tb	Disch. Press., Pd	Duke Power Flow Diagrams
Cent. Charging Pumps (1A, 1B) [NV]	2	QU	NR	X	X	RR	X(1)	X	RR	X	MC-1554-3.1
Component Cooling Pumps (1A1, 1A2, 1B1, 1B2) [KC]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-1573-1.0
Containment Spray Pumps (1A, 1B) [NS]	2	QU	NR	X	X	X	X(1)	X(2)	RR	X	MC-1563-1.0
Control Area Chilled Water Pumps (CRA-P-1,2) [YC]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-1618-1.0
D/G Fuel Oil Transfer Pumps (1A, 1B) [FD]	3	QU	NR	RR	RR	X	X(1)	NR	RR	X	MC-1609-3.0
D/G Room Sump Pumps (1A2, 1A3, 1B2, 1B3) [WN]	3	QU	NR	RR	RR	X	X(1)	NR	RR	X	MC-1609-7.0
M/D Aux. Feedwater Pumps (1A, 1B) [CA]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-1592-1.1
Nuclear Service Water Pumps (1A, 1B) [RN]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-1574-1.1
Residual Heat Removal Pumps (1A, 1B) [ND]	2	QU	NR	X	X	X	X(1)	X(2)	RR	X	MC-1561-1.0

- NOTES: 1) Reference General Relief Request I.3(B)
 2) Pump is close coupled; therefore motor lubricant level will be observed.

LEGEND

X - Instrumentation Available
 NR - Not required for IWP Compliance
 RR - Exempted by Relief Request
 QU - Quarterly
 () - Note
 [] - System Abbreviation

SECTION 1.2

McGUIRE NUCLEAR STATION - UNIT 1
PUMP INSERVICE TESTING PROGRAM

PUMPS	Safety Class	Test Frequency	Speed, N	Inlet Press., Pi	Diff. Press., P	Flow Rate, Q	Vibration, V	Lubrication Level	Bearing Temp., Tb	Disch. Press., Pd	Duke Power Flow Diagrams
Safety Injection Pumps (1A, 1B) [NI]	2	QU	NR	X	X	X	X(1)	X	RR	X	MC-1562-3.0
T/D Aux. Feedwater Pump (No. 1) [CA]	3	QU	X	X	X	X	X(1)	X	RR	X	MC-1592-1.1

- NOTES: 1) Reference General Relief Request I.3(B)
 2) Pump is close coupled; therefore motor lubricant level will be observed.

LEGEND

X - Instrumentation Available	QU - Quarterly
NR - Not required for IWP Compliance	() - Note
RR - Exempted by Relief Request	[] - System Abbreviation

SECTION 1.2

McGUIRE NUCLEAR STATION - UNIT 2
PUMP INSERVICE TESTING PROGRAM

PUMPS	Safety Class	Test Frequency	Speed, N	Inlet Press., Pi	Diff. Press., P	Flow Rate, Q	Vibration, V	Lubrication Level	Bearing Temp., Tb	Disch. Press., Pd	Duke Power Flow Diagrams
Cent. Charging Pumps (2A, 2B) [NV]	2	QU	NR	X	X	RR	X(1)	X	RR	X	MC-2554-3.1
Component Cooling Pumps (2A1, 2A2, 2B1, 2B2) [KC]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-2573-1.0
Containment Spray Pumps (2A, 2B) [NS]	2	QU	NR	X	X	X	X(1)	X(2)	RR	X	MC-2563-1.0
D/G Fuel Oil Transfer Pumps (2A, 2B) [FD]	3	QU	NR	RR	RR	X	X(1)	NR	RR	X	MC-2609-3.0
D/G Room Sump Pumps (2A2, 2A3, 2B2, 2B3) [WN]	3	QU	NR	RR	RR	X	X(1)	NR	RR	X	MC-2609-7.0
M/D Aux. Feedwater Pumps (2A, 2B) [CA]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-2592-1.1
Nuclear Service Water Pumps (2A, 2B) [RN]	3	QU	NR	X	X	X	X(1)	X	RR	X	MC-2574-1.1
Residual Heat Removal Pumps (2A, 2B) [ND]	2	QU	NR	X	X	X	X(1)	X(2)	RR	X	MC-2561-1.0
Safety Injection Pumps (2A, 2B) [NI]	2	QU	NR	X	X	X	X(1)	X	RR	X	MC-2562-3.0
T/D Aux. Feedwater Pump (No. 2) [CA]	3	QU	X	X	X	X	X(1)	X	RR	X	MC-2592-1.1

NOTES: 1) Reference General Relief Request 1.3(B)
 2) Pump is close coupled; therefore motor lubricant level will be observed.

LEGEND

X - Instrumentation Available QU - Quarterly
 NR - Not required for IWP Compliance () - Note
 RR - Exempted by Relief Request [] - System Abbreviation

(B) PUMPS: All pumps included in the IST program.

TEST REQUIREMENT: IWP-3100 and IWP-3210 require vibration amplitude to be measured. IWP-3210 specifies the allowable ranges of vibration amplitude measurements. IWP-4110 requires the accuracy of vibration amplitude measurements to be $\pm 5\%$ of full scale. IWP-4120 requires the full-scale range of vibration instrumentation to be three times the reference value or less. IWP-4510 requires displacement vibration amplitude to be read at one specific location during each test. IWP-4520(b) requires the frequency response range of vibration instrumentation to be from one-half minimum speed to at least maximum pump shaft speed.

BASIS FOR RELIEF: Experience has shown that measuring vibration as required by IWP is not the most effective way to determine the mechanical condition of a pump. In order to better determine the mechanical condition of pumps, multiple vibration velocity measurements will be obtained/evaluated and supplemented, when necessary, with acceleration/displacement measurements and spectral analysis. In order to facilitate this testing, digital vibration instrumentation will be used.

IWP does not provide adequate guidance/requirements for performing the better/alternate testing.

ALTERNATE TESTING: In lieu of the vibration requirements of IWP-3100 and IWP-3200, peak vibration velocity will be measured. In most cases, vibration velocity gives the best indication of machine mechanical condition.

In lieu of IWP-4520(b), vibration instrumentation will be calibrated and vibration velocity will be measured over a range of 10 to 1000 Hz. This is the range that the state of the art instrumentation used can be adequately calibrated over. In lieu of IWP-4520(b), vibration velocity will be measured over a range from 1/3 minimum pump shaft rotational speed to 1000 HZ. (Measurements at other frequencies will be taken as necessary). This range will encompass most potential noise contributors.

In lieu of the vibration instrument accuracy requirements of IWP-4110, the loop accuracy of vibration instruments will be $\pm 6.56\%$ of reading. This accuracy will be used because IWP does not specify an accuracy for vibration velocity. This accuracy is the best that can be reasonably obtained from the state of the art instrumentation used. (The requirements of IWP allow vibration inaccuracies of greater than $\pm 15\%$ of reading.)

In lieu of the range requirements imposed on vibration instrumentation by IWP-4120, there will be no vibration instrumentation range requirement (digital vibration instrumentation is auto-ranging). It is not necessary to have a range requirement because the accuracies stated above and the readability of a digital gauge are not dependent upon instrument range.

In lieu of the vibration ranges specified in IWP-3210, the following ranges shall be used. These ranges will be used because IWP does not specify ranges for vibration velocity. These ranges are based on current vibration standards (vibration severity charts).

	Acceptable Range	Alert Range	Required Action Range
For All Pumps When $V_r \leq 0.075$ in/sec	0 to 0.19 in/sec	>0.19 to 0.45 in/sec	>0.45 in/sec
For Centrifugal Pumps When $V_r > 0.075$ in/sec	$\leq 2.5V_r$	$>2.5V_r$ to $6V_r$ or >0.325 to 0.70 in/sec	$>6V_r$ or >0.70 in/sec
For Reciprocating Pumps When $V_r > 0.075$ in/sec	$\leq 2.5V_r$	$>2.5V_r$ to $6V_r$	$>6V_r$
	Acceptable Range	Alert Range	Required Action Range
For Internal Gear Positive Displacement Pumps when $V_r > 0.075$ in/sec	$\leq 2.5V_r$	$>2.5V_r$ to $6V_r$	$>6V_r$

In lieu of IWP-4510, peak vibration velocity measurements shall be taken during each test.

• On centrifugal and internal gear PD pumps, measurements shall be taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions. These measurements shall be taken on each accessible pump bearing housing. If no pump bearing housings are accessible, these measurements shall be taken at the accessible location that gives the best indication of lateral pump vibration. This location shall be one of the following:

Pump casing
Motor bearing housing

Measurements also shall be taken in the axial direction. This measurement shall be taken on each accessible pump thrust bearing housing. If no pump thrust bearing housings are accessible, this measurement shall be taken at the accessible location that gives the best indication of axial pump vibration. This location shall be one of the following:

Pump casing
Motor thrust bearing housing
Motor casing

• On reciprocating pumps, a measurement shall be taken on the bearing housing of the crankshaft, approximately perpendicular to both the crankshaft and the line of plunger travel.

I.4 The following Safety Class 2 and 3 Pumps (see Section I.2 for available instrumentation) will be tested in accordance with the intent of Subsection IWP of the ASME Code, except where relief requests have been written for specific requirements determined to be impractical as described below:

(A) PUMPS:	D/G Fuel Oil Transfer Pumps (2A, 2B)
SAFETY CLASS:	3
FUNCTION:	Diesel Generator Auxiliary Support
TEST REQUIREMENTS:	Test pumps in accordance with Subsection IWP
BASIS FOR RELIEF:	IWP does not provide appropriate provisions for testing positive displacement pumps.
ALTERNATE TESTING:	The Fuel Oil Transfer Pumps are internal gear positive displacement pumps. The performance curve for these pumps is relatively flat. Capacity of these pumps is independent of discharge pressure when operating properly and operating below the cracking pressure of the pump internal relief valve. Discharge pressure will be measured for information purposes, but will not be compared to any acceptance criteria. Pumps will be tested by measuring level rise in the Fuel Oil Day Tank and converting this to flowrate. Pump testing is between the level setpoints of the Fuel Oil Day Tank and this gives a run time of approximately 60-75 seconds. The flowrate (Q) will be compared to acceptance criteria established in accordance with Table IWP-3100-2 except the Acceptable Range has been widened and the High Alert Range increased to allow for level instrument fluctuations.
	Acceptable Range: 0.94 to 1.07 Qr
	Low Alert Range: 0.90 to 0.94 Qr
	High Alert Range: 1.07 to 1.10 Qr
	Low Required Action Range: <0.90 Qr
	High Required Action Range: >1.10 Qr

These pumps are designed to produce a flow rate of 22 gpm. The requirements of the Diesel Generator are approximately 6 gpm. Five vibration points are monitored and trended on the Fuel Oil Transfer pumps. Acceptance criteria for the vibration points are established based on Relief Request I.3(B). Vibration data is trended on a quarterly basis similar to the flow test results. Any degradation in the performance of the Fuel Oil Transfer pump will first appear in the vibration data.

Also, the FOT pumps are conservatively designed in the discharge pressure that can be obtained. The capabilities of the pump are the challenged during the quarterly test with respect to discharge pressure. System limitations restrict the discharge pressure to less than or equal to 55 psig; however, the FOT pump could easily pump against 150 psig.

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Since the pump is installed with considerable safety margin with respect to flow and discharge pressure, the most prudent data to use for trending for pump degradation would be velocity vibration data. By trending the five velocity vibration data points, the acceptability of the widened High Alert and Required Action for flow is justified. The flow test ensures system operability requirements are met while the vibration test ensures an adequate trending program is in place to ensure continued operability during testing intervals.

In addition, monthly Diesel Generator starting and loading (as required by McGuire Technical Specifications) will assess the hydraulic condition of the subject auxiliary pumps and demonstrates the capability of the individual components to perform their design function.

(B) PUMPS:	Safety Injection Pumps (2A, 2B)
SAFETY CLASS:	2
FUNCTION:	To provide emergency core cooling in the event of a break in either the reactor coolant or steam system piping.
TEST REQUIREMENT:	IWP-3100 requires the resistance of the system to be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value.
BASIS FOR RELIEF:	When testing these pumps on line, the only flow path available is thru the miniflow to the FWST. Flow is limited by an orifice in the miniflow line, which yields a test point back on the head curve. As stated in Generic Letter 89-04, minimum flow lines are not designed for pump testing purposes. The test point for monitoring pump performance for degradation should be in a more stable region on the pump performance curve. Also, the amount of time the pump is run at miniflow should be minimized.
ALTERNATE TESTING:	<p>The Safety Injection Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.</p> <p><u>Quarterly</u></p> <p>The Safety Injection Pumps will be tested quarterly to verify Technical Specification limits are met. The test measures differential pressure and vibrations. This data will be trended as required by IWP-6000. For the quarterly test, the instrumentation accuracy and range requirements of IWP will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The instrument used to measure vibrations will meet the requirements as specified in relief request I.3(B). Since the test loop in the minimum flow line with a flow limiting orifice is installed, flow will be recorded for information only.</p>

Refueling Outage

During each refueling outage, a code pump test, including velocity vibration measurements, will be performed at a test point in the stable region of the performance curve.

As an alternative to repeat testing at a single test point in the stable region of the performance curve, a reference curve may be obtained with applicable IWP curves plotted. Using this technique, the full flow test point (also in the stable region of the pump curve) will be bound by flow points obtained in the development of the reference curve. The data obtained is then plotted and pump operability at the test point will be verified when compared against IWP reference curves.

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Each of these test methods will provide an acceptable level of quality and safety while maintaining the most flexibility to accommodate system conditions and configurations during refueling outages.

Implementation

The new testing program (quarterly and refueling) will be in place by the 1990 Unit 2 refueling outage and the 1991 Unit 1 refueling outage.

(C) PUMPS:	Residual Heat Removal Pumps (2A, 2B)
SAFETY CLASS:	2
FUNCTION:	To remove heat energy from the core and Reactor Coolant System during cooldown and refueling operations. Also, utilized as part of Safety Injection System and Containment Spray System during an accident condition.
BASIS FOR RELIEF:	When testing these pumps on line, the only flow path available is thru the miniflow line. Flow is limited by the miniflow control valve in the line, which yields a test point back on the head curve. As stated in Generic Letter 89-04, minimum flow lines are not designed for pump testing purposes. The test point for monitoring pump performance for degradation should be in a more stable region on the pump performance curve. Also, the amount of time the pump is run at miniflow should be minimized.
ALTERNATE TESTING:	<p>The Residual Heat Removal Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.</p> <p><u>Quarterly</u></p> <p>The Residual Heat Removal Pumps will be tested quarterly to verify Technical Specification limits are met. The test measures differential pressure and vibrations. This data will be trended as required by IWP-6000. For the quarterly test, the instrumentation accuracy and range requirements of IWP will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The instrument used to measure vibrations will meet the requirements as specified in relief request I.3(B). Since the test loop in the minimum flow line with a flow limiting control valve is installed, flow will be recorded for information only.</p>

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Cold Shutdown

During each cold shutdown, a code pump test, including velocity vibration measurements, will be performed at a test point in the stable region of the performance curve.

As an alternative to repeat testing at a single test point in the stable region of the performance curve, a reference curve may be obtained with applicable IWP curves plotted. Using this technique, the full flow test point (also in the stable region of the pump curve) will be bound by flow points obtained in the development of the reference curve. The data obtained is then plotted and pump operability at the test point will be verified when compared against IWP reference curves.

Each of these test methods will provide an acceptable level of quality and safety while maintaining the most flexibility to accommodate system conditions and configurations.

Implementation

The new testing program (quarterly and refueling) will be in place by the 1990 Unit 2 refueling outage and the 1991 Unit 1 refueling outage.

(D) PUMPS: Centrifugal Charging Pump (2A, 2B)

SAFETY CLASS: 2

FUNCTION: To supply reactor coolant inventory in the Volume Control Tank or Refueling Water Storage Tank to the reactor coolant system.

TEST REQUIREMENT: Table IWP-3100-1 requires measuring differential pressure (DP) and flow rate (Q).

BASIS FOR RELIEF: When testing these pumps on line, the only flow path available is thru a combination of the normal charging and the miniflow to the VCT. The miniflow is not instrumented for flow. Flow through the line is assumed to be at the flow rate corresponding to the orifice design conditions. Also, the combination flow paths yield a test point back on the head curve. The best test point back for monitoring pump performance for degradation should be in a more stable region on the pump performance curve.

ALTERNATE TESTING: The Centrifugal Charging Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

Quarterly

The Centrifugal Charging Pumps will be tested quarterly to verify Technical Specification limits are met. The test measures differential pressure and vibrations. This data will be trended as required by IWP-6000. For the quarterly test, the instrumentation accuracy and range requirements of IWP will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The instrument used to measure vibrations will meet the requirements as specified in relief request I.3(B). Since the test loop in the minimum flow line with a flow limiting orifice is installed, flow will be recorded for information only.

Refueling Outage

During each refueling outage, a code pump test, including velocity vibration measurements, will be performed at a test point in the stable region of the performance curve.

As an alternative to repeat testing at a single test point in the stable region of the performance curve, a reference curve may be obtained with applicable IWP curves plotted. Using this technique, the full flow test point (also in the stable region of the pump curve) will be bound by flow points obtained in the development of the reference curve. The data obtained is then plotted and pump operability at the test point will be verified when compared against IWP reference curves.

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Each of these test methods will provide an acceptable level of quality and safety while maintaining the most flexibility to accommodate system conditions and configurations during refueling outages.

Implementation

The new testing program (quarterly and refueling) will be in place by the 1990 Unit 2 refueling outage and the 1991 Unit 1 refueling outage.

(E) PUMPS: D/G Room Sump Pumps (2A2, 2A3, 2B2, 2B3)

SAFETY CLASS: 3

FUNCTION: Water removal from Diesel Generator Rooms

TEST REQUIREMENT: Test pumps in accordance with Subsection IWP.

BASIS FOR RELIEF: The D/G Room Sump Pumps are vertical pumps tested by filling the D/G Room Sump and pumping the sump down. No stable system conditions can be obtained due to the continuous decrease in sump level. No suction pressure, flow, bearing temperature, or lubricant level instrumentation is available.

ALTERNATE TESTING: The D/G Room Sump Pumps will be tested for greater than or equal to emergency design flow by:

- (1) Filling the sump and recording level.
- (2) Pumping down the sump and recording both level and pump down time.

An average flow rate will be determined from the time it takes to pump a known volume from the sump. Pumping down the sump takes approximately 60 seconds. An average discharge pressure will be determined and recorded. The flow rate will be compared with acceptance criteria established per Table IWP-3100-2.

The above testing procedure is an interim method until modifications are made to the system which will permit full flow testing using a recirculation loop back to the sump. Included in the test loop modification will be direct flow indication and throttling capability to set either ΔP or Q . The modifications will be installed by the 1992 refueling outages.

No suction pressure instrumentation is required since this pressure can be calculated from sump level measurements.

(F) Deleted by Revision 12

Attachment 3
Additional Information for Relief Request I.3(B)

Relief was requested from the vibration monitoring requirements of IWP because they are outdated. The relief request specifies vibration monitoring requirements that are far superior to those of IWP. The requirements of the relief request are at a point of diminishing returns. Most improvements to the relief request would have a negligible, if any, positive impact on McGuire's vibration monitoring program.

The relief request does not specify that vibration monitoring will be performed per OM-6 because there are fundamental technical problems with the vibration monitoring requirements of OM-6. These problems are indicated below. These problems have been brought to the attention of the OM 6&10 Working Group by Duke Power and other utilities. Duke Power presented a paper on the impracticalities and problems associated with the vibration monitoring requirements of OM-6 to the OM 6&10 Working Group, Vibration Task Group on December 2, 1989. The OM 6&10 Working Group is currently in the process of making significant improvements to the vibration monitoring requirements of OM-6.

Each OM-6 Section that establishes vibration monitoring requirements, and how these requirements relate to McGuire Relief Request I.3.B, are discussed below.

OM-6 Section 4.6.1.1, Instrument Accuracy

This code section specifies that vibration instrument accuracy shall be ± 5 percent:

- (a) of full scale for individual analog instruments,
- (b) of total loop accuracy for a combination of instruments, or
- (c) over the calibrated range for digital instruments.

This requirement is not clear. Section 4.6.1.2.c of OM-6 excludes vibration instruments from range requirements; thus (a) is not clear. (b) and (c) are not clear because they do not specify what the ± 5 percent is relative to. In other words, it is not clear whether they mean ± 5 percent of each reading over the calibrated range, or ± 5 percent of the the largest value. Since OM-6 does not have a clear accuracy statement, a specific comparison with the accuracy specified in the relief request is not possible.

The proposed accuracy statement of 6.56% of reading is adequate because it is the best that can reasonably be obtained with the state-of-the-art instrumentation used. This equipment allows for quick data acquisition and detailed data analysis. Also, any improvement in vibration instrument accuracy would have a negligible positive impact on the effectiveness of vibration monitoring. As stated below, a $\pm 6.56\%$ accuracy statement is insignificant; therefore, any small improvements in accuracy are even more insignificant. Also, any instrumentation changes would

Attachment 3
Additional Information for Relief Request I.3(B)

be expensive and would disrupt the well established and effective vibration monitoring program that is in place.

The stated instrument accuracy is adequate because large changes in vibration levels are the best indicator of and are usually relied upon to assess operational readiness and degradation. When vibration levels are in the alert or required action range, but have not exceeded the fixed alert or required action limits of 0.325 in/sec or 0.70 in/sec respectively, they have increased at least 250% or 500% respectively. Therefore, an accuracy statement of $\pm 6.58\%$ of reading is insignificant.

The stated instrument accuracy is also adequate when small changes in vibration are used to assess pump condition. When vibration levels are outside of the acceptable range solely because they have exceeded the fixed alert limit of 0.325 in/sec or the fixed required action limit of 0.70 in/sec, they may in some cases not have increased significantly. In these cases the fixed limits of 0.325 in/sec and 0.70 in/sec will be relied upon to assess operational readiness and degradation. These fixed limits are somewhat general and need not be considered absolutes. They were extracted from vibration severity charts. While the charts are in general agreement, there is not agreement on specific numbers. 0.300 or 0.350 in/sec could have been chosen as easily as 0.325 in/sec for the fixed alert limit. 0.75 or 0.80 in/sec could have been chosen as easily as 0.70 in/sec for the fixed required action limit. These windows encompass $\pm 106.56\%$ of 0.325 in/sec and 0.70 in/sec respectively; therefore, a $\pm 6.56\%$ of reading accuracy statement is insignificant.

OM-6 Section 4.6.1.6. Frequency Response Range

This code section specifies that the frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz. The relief request now specifies that vibration velocity will be measured over a range from 1/3 minimum pump shaft rotational speed to 1000 Hz.

As indicated in the relief request, however, vibration instrumentation is calibrated over a range from 10 to 1000 Hz. Calibrating below 10 Hz is not reasonably possible with the state-of-the-art instrumentation used. This equipment allows for quick data acquisition and detailed data analysis. Also, as indicated below, calibrating at less than 10 Hz would have a negligible positive impact on the effectiveness of vibration monitoring. Also, any instrumentation changes would be expensive and would disrupt the well established and effective vibration monitoring program in place.

The slowest speed pumps in the McGuire IST program are the Nuclear Service Water Pumps and the Diesel Generator Fuel Oil Transfer Pumps. They run at 1185 and 1745 rpm respectively.

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Additional Information for Relief Request I.3(B)

1/3 pump speed for these pumps corresponds to 6.58 and 9.69 Hz respectively. Therefore, the Nuclear Service Water Pumps are the only pumps that will be monitored significantly below the range instruments are calibrated over.

The fact that instruments will not be calibrated below 10 Hz does not mean that meaningful measurements can not be taken over the range from 6.58 to 10 Hz. The vibration instruments used are repeatable in this range. Also, the instrument manufacturers specify that their accuracy statements are valid over this range under certain conditions.

The range from 6.58 to 10 Hz constitutes less than .52 percent of the range over which measurements will be taken. Therefore, any additional inaccuracy over this range will have an insignificant impact on overall vibration measurements. Hence, the lack of an accuracy statement over this range is insignificant.

OM-6 Section 4.6.4.a, b; Vibration Measurement Points

These code sections specify vibration measurement points for centrifugal (including vertical line shaft) pumps. The relief request elaborates on and adds some flexibility to these requirements. Such flexibility is necessary because in some cases bearing housings are not accessible. For example, the upper motor bearing housings on some vertical line shaft pumps are inaccessible due to motor fans/cages. Therefore, if specified bearing housings are inaccessible, the relief request allows vibration to be measured at specified locations that give the best indication of pump vibration. The relief request also incorporates measurement points for internal gear positive displacement pumps, which are not addressed by OM-6.

OM-6 Section 4.6.4.c, Vibration Measurement Points

This code section specifies measurement points for reciprocating pumps. The relief request does not deviate from this requirement.

OM-6 Section 4.6.4.d, Vibration Measurement Points

This code section specifies that vibration measurement points must be clearly marked. The relief request does not request relief from that part of IWP which has a similar requirement, thus, this requirement is met.

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Additional Information for Relief Request I.3(B)

OM-6 Section 6.1, Acceptance Criteria

This code section specifies vibration acceptance criteria. The relief request adopts these acceptance criteria, with minor modifications. OM-6 does not include any acceptance criteria for internal gear positive displacement pumps. Appropriate acceptance criteria were included in the relief request for these pumps.

Also, fixed acceptance limits have been assigned for smooth running pumps to insure that they do not fall into the alert or required action range while still running smoothly. The alert and required action ranges in OM-6 are relative to reference values; therefore, smooth running pumps could fall into the alert or required action range. For example, when $V_r = .005$ in/sec, action is required at .031 in/sec. This is inappropriate since pump vibrations of .031 in/sec are of no concern. Also, any corrective actions taken would probably increase vibration levels.

The fixed acceptance limits that have been assigned for smooth running pumps are acceptable because they are conservative. Vibration levels within the limits are acceptable for pumps in the McGuire IST program and any changes up to the limits are considered acceptable.

The limits were established, in part, by substituting 0.075 in/sec into the relative acceptance criteria of OM-6. Therefore, "very smooth" running pumps ($V_r < 0.075$ in/sec) will have the same alert and action limits that OM-6 establishes for "moderately smooth" running pumps ($V_r = 0.075$).

It should be noted that IWP-3210 allows alternate acceptance criteria to be established and used.

OM-6 Section 5.2, Type of Vibration Measurement

This section allows either vibration displacement or velocity to be measured. It is implied/specified that displacement should be measured for pumps that operate at less than 600 rpm, and that velocity should be measured otherwise. None of the pumps in the McGuire IST program operate at less than 600 rpm; therefore, there is no need for the relief request to address the OM-6 recommendation to measure vibration displacements for pumps that operate at less than 600 rpm.