REGUL●ORY INFORMATION DISTRIBUT●N SYSTEM (RIDS)

ACCESSION NBR: 8607080207 DOC. DATE: 86/07/03 NOTARIZED: NO DOCKET #
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AUTH. NAME AUTHOR AFFILIATION
MANGAN, C. V. Niagara Mohawk Power Corp.
RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Withdraws 860506 request for exemption from Section IIIC of 10CFR50, App J for 16 relief valves. Justification for reverse flow testing encl. FSAR changes will be incorporated in next amend. W/two oversize charts.

DISTRIBUTION CODE: A017D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 11
TITLE: OR Submittal: Append J Containment Leak Rate Testing

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	BWR EICSB		2	2	BWR FOB		1	1
	BWR PD3 LA		1	0	BWR PD3 PD	01	5	5
	HAUGHEY, M		1	1	BWR PSB		1	1
	BWR RSB		1	1				
INTERNAL:	ACRS	07	10	10	ADM/LFMB		1	0
	ELD/HDS3	08	1	1	NRR BWR ADTS		1	1
	NRR PWR-A ADTS		1	1	NRR PWR-B ADTS		1	1
	NRR/DSRO/EIB		1	1	NRR/DSRO/RSIB		1	1
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A/A 2

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
ADENSAM,E.G. BWR Project Directorate 3

SUBJECT: Withdraws 860506 request for exemption from Section III.C of 10CFR50,App J for 16 relief valves.Justification for reverse flow testing encl.FSAR changes will be incorporated in next amend.W/two oversize charts.

DISTRIBUTION CODE: A017D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 12
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	BWR EICSB	2	2	BWR FOB	1	1
	BWR PD3 LA	1	0	BWR PD3 PD 01	5	5
	HAUGHEY,M	1	1	BWR PSB	1	1
	BWR RSB	1	1			
INTERNAL:	ACRS 40	10	10	ADM/LFMB	1	0
	ELD/HDS3	1	1	NRR BWR ADTS	1	1
	NRR PWR-A ADTS	1	1	NRR PWR-B ADTS	1	1
	NRR/DSRO/EIB	1	1	NRR/DSRO/RSIB	1	1
	REG FILE 04	1	1	RGN1	1	1
EXTERNAL:	LPDR 03	1	1	NRC PDR 02	1	1
	NSIC 05	1	1			

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

July 3, 1986
(NMP2L 0768)

Ms. Elinor G. Adensam, Director
BWR Project Directorate No. 3
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Washington, DC 20555

Dear Ms. Adensam:

Re: Nine Mile Point Unit 2
Docket No. 50-410

My letter of May 6, 1986 requested an exemption for 16 relief valves from Section IIIC of Appendix J to 10 CFR 50. Niagara Mohawk withdraws that request for exemption.

Based upon further review, three of these valves can be reverse flow tested in accordance with Appendix J, and 13 valves discharge under water in the suppression pool. Justification for reverse flow testing is provided in the attachment. The discharge lines from the 13 relief valves will be modified prior to fuel load to seal weld closed the vacuum breaker lines. This will ensure the discharge is below the suppression pool water level, even under expected minimum post-LOCA drawdown water level of the suppression pool. This is based on a similar situation to other valves, shown in Notes 23 and 24 of Table 6.2-56 of the Final Safety Analysis Report, which are not included in the Type C testing as approved by your staff. The Final Safety Analysis Report changes are attached which reflect this information. These changes will be incorporated in the next amendment.

Very truly yours,

C. V. Mangan
Senior Vice President

NLR:ja
1740G

Attachment

xc: R. A. Gramm, NRC Resident Inspector
Project File (2)

A017
1/1

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

Niagara Mohawk Power Corporation) Docket No. 50-410

(Nine Mile Point Unit 2))

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Senior Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C V Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 3rd day of July, 1986.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1987

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787267
My Commission Expires March 20, 19__

TABLE 6.2-56 (Cont)

(24) This line consists of inputs from the valves listed below. The line discharges below the suppression pool water level and therefore is not exposed to the primary containment atmosphere.

2RHS*SV34B and 2RHS*SV62B - steam condensing line safety valves.

2RHS*RV56B - RHR heat exchanger shell side relief valve.

2RHS*MOV26B and 2RHS*MOV27B - RHR heat exchanger vent line isolation valves. 2RHS*MOV26B and 2RHS*MOV27B are open only during steam condensing mode. Valve position is indicated in the main control room to provide the operator confirmation of valve status. These valves are included in Type C test in accordance with 20CFR50, Appendix J. 26

2RHS*V117 and 2RHS*V118 - vacuum breaker line.

2RHS*RVV35B and 2RHS*RVV36B - vacuum breakers.

The above-listed relief, safety, and vacuum breaker valves are included in the Type A containment integrated leak rate test. They are not included in Type C testing, based on the design considerations discussed in Note 23. 26

(25) Deleted. Insert A

(26) Penetrations Z-99A,B,C,D, and Z-100A,B,C,D contain lines for the hydraulic control of the reactor recirculation flow control valve. These lines contain hydraulic fluid used to position the reactor recirculation flow control valve, and are protected against the effects of pipe whip and jet impingement.

26

Insert A

This line consists of inputs from the applicable valves listed below. The line discharges at elevation 195'-6", which is 2'-2" below the minimum water level in the suppression pool and, therefore, is not exposed to the primary containment atmosphere. All of the valves are relief valves which provide relief for high/low pressure interface leakage, except 2RHS*RV108, which provides relief for upstream level control failure.

For penetration Z73
- 2RHS*RV108
- 2RHS*RV20C

For penetration Z98A
- 2RHS*RV61A
- 2RHS*RV20A
- 2RHS*RV110
- 2CSL*RV123
- 2CSL*RV105
- 2RHS*RV139

For penetration Z98B
- 2RHS*RV61C
- 2RHS*RV61B
- 2CSH*RV114
- 2CSH*RV113
- 2RHS*RV20B

The above-listed relief valves are included in the Type A containment integrated leak rate test for external leakage. They are not included in Type C testing, based on the design considerations discussed in Note 23.

QUESTION F480.37 (6.2.6)

Appendix J, Section III.C.1 prescribes methods for conducting the containment isolation valve leak rate tests. These requirements state that containment isolation valves should normally be leak tested with the test pressure applied in the same direction the valve must function to preclude leakage in an accident condition. Reverse direction testing is permitted only if it can be demonstrated that such testing yields results which are equivalent or more conservative than those obtained using same direction as post accident flow testing. List the containment isolation valves for which Type C leak testing with reverse flow is used. For each justify by means of test data or valve design arguments that this testing is equivalent or more conservative than "same direction as post accident flow" testing.

RESPONSE

Table 480.37-1 includes the following LLRT test penetrations:

1. Containment penetration number.
2. System in which the reverse tested valve is installed.
3. Valve identification number.
4. Type of valve construction and the justification necessary to ensure the reverse test is as conservative as testing the valve in the forward direction.

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TABLE 480.37-1

REVERSE TESTED CONTAINMENT ISOLATION VALVES

Penetration No.	System	Valve I.D.	Valve Type	Justification Valve
Z8A	RHR	MOV25A	Split Disc Gate	1
Z8B	RHR	MOV25B	Split Disc Gate	1
Z12	CHS	MOV118	Split Disc Gate	1
Z18	ICS	MOV143	Globe	2
Z17	ICS	MOV136	Split Disc Gate	1
Z19	ICS	MOV122	Split Disc Gate	1
Z21A	ICS	MOV128	Split Disc Gate	1
Z48	CPS	AOV108	Butterfly	3
Z51	CPS	AOV109	Butterfly	3
Z50	CPS	AOV107	Butterfly	3
Z49	CPS	AOV106	Butterfly	3
Z55A	HCS	MOV4A	Globe	2
Z55B	HCS	MOV4B	Globe	2
Z56A	HCS	MOV6A	Globe	2
Z57A	HCS	MOV5A	Globe	2
Z56B	HCS	MOV6B	Globe	2
Z57B	HCS	MOV5B	Globe	2
Z58	CPS	SOV122	Globe	2
Z59	CPS	SOV121	Globe	2
Z60A	CMS	SOV61A	Plug	4
Z60C	CMS	SOV63A	Plug	4
Z60D	CMS	SOV33A	Plug	4
Z61C	CMS	SOV34A	Plug	4
Z60E	CMS	SOV61B	Plug	4
Z60G	CMS	SOV63B	Plug	4
Z60H	CMS	SOV33B	Plug	4
Z61F	CMS	SOV34B	Plug	4
Z01A	MSS	SOV97A	Globe	2
Z01B	MSS	SOV97B	Globe	2
Z01C	MSS	SOV97C	Globe	2
Z01D	MSS	SOV97D	Globe	2

Insert B

26

Justification Notes:

1. Split disc gate valves may be tested using a test connection (TC) between the discs. This is a conservative test since both LOCA and non-LOCA seat leakage is measured.

Insert B

Penetration	System	Valve I.D.	Type	Justification
Z11	RHS	RV152	Relief	5
Z33B	CCP	RV170	Relief	5
Z34B	CCP	RV171	Relief	5

TABLE 480.37-1 (Cont)

2. Globe valves are oriented to ensure LLRT test pressure tends to unseat the valve, whereas LOCA pressure will tend to seat the valve. This is conservative for testing.

3. Butterfly valves are reverse tested which will provide equivalent results since the seating area(s) and test pressure force(s) will be equal in either direction.

4. Plug valves are of the pressure-balanced bellows type. By design, neither upstream nor downstream pressure can exert a force on the disc, and the spring force of the bellows is the only force tending to seat the valve disc. Reverse flow testing is therefore equivalent to testing in the same direction as post-accident flow.

Insert C

Insert C

5. Relief valves are nozzle type spring actuated relief valves. The valves are orientated to ensure test pressure tends to unseat the valve, whereas LOCA pressure will tend to seat the valve. This is conservative for testing.

Penetration No.	System Designation	GDC or Reg. Guide	ESF System	Fluid	Size (in.)	PSAR Arrangement Figure(1)	Location of valve Inside/Outside Primary Containment	Length of Pipe - Containment to Outside Isolation Valve	Type Test (2)	Potential Bypass Leakage Path	Number SVEC	Number GE	Type	Operator	Actuator Mode Primary	Actuator Mode Secondary	No (3)
Z-61F	CMS to wetwell	56	Yes	Air	3/4	6.2-70 Sh. 32	Inside		C	No(3c)	2CMS*SOV38B	-	Globe	SOV	Elec.	N/A	Op
							Outside	0'-8"	C		2CMS*SOV35B	-	Globe	SOV	Elec.	N/A	Op
Z-67	Spare				10				A								
Z-68	Capped spare				10				A								
Z-69	Spare				6												
Z-70	Capped spare				6				A								
Z-71	Spare				3				A								
Z-72	Capped spare				14				A								
Z-73	RHS relief valve discharge to suppression pool	56	No	Water	6	6.2-70 Sh. 33	Outside	48'-6"	A	No(3b)	2RHS*RV100 2RHS*R720C	E12-F036 E12-F025C	RV	N/A	N/A	N/A	N/A
Z-74	Flanged spare				6				B								
Z-75	Capped spare				3				A								
Z-76	Capped spare				3				A								
Z-77	Capped spare				1 1/2				A								
Z-78	Capped spare				1 1/2				A								
Z-79	Capped spare				1 1/2				A								
Z-80	Spent fuel pool cooling	56	No	Water	1 1/2	6.2-70 Sh. 40	Outside	1'-6"	C	No(3b)	2SPC*V203	-	Globe	Manual	Manual	N/A	Clo
							Inside		C		2SPC*V204	-	Globe	Manual	Manual	N/A	Clo
Z-81	Capped spare				1 1/2				A								
Z-82	Capped spare				1				A								

TABLE 6.2-56 (Cont)

Location of Valve Inside/ Outside Primary Containment	Length of Pipe - Containment to Outside Isolation Valve	Type Test (1)	Potential Bypass Leakage Path	Number SUPC	Number GP	Valve(6) Type	Operator	Actuator Mode Primary	Actuator Mode Secondary	Position Normal (3)	Position Shutdown	Position Post-Accident	Position Power Failure	Isolation Signal (4)	Closure Time (5,6)	Power Source (7)	Notes
Inside		C	No(3a)	2CHS*SOV34B	-	Globe	SOV	Elec.	N/A	Open	Closed	Open	Closed	B,F,RH,Z	5	Div II	
Outside	0'-4"	C		2CHS*SOV35B	-	Globe	SOV	Elec.	N/A	Open	Closed	Open	Closed	B,F,RH,Z	5	Div II	
		A															
		A															
		A															
		A															
		A															
Outside	38'-6"	A	No(3a)	2RHS*RV100	E12-F036	RV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25
				2RHS*RV20C	E12-F025C												
		B															
		A															
		A															
		A															
		A															
		A															
Outside	1'-6"	C	No(3a)	2SFC*V203	-	Globe	Manual	Manual	N/A	Closed	Closed	Closed	N/A	LC	N/A	N/A	
Inside		C		2SFC*V204	-	Globe	Manual	Manual	N/A	Closed	Closed	Closed	N/A	LC	N/A	N/A	
		A															
		A															

Penetration No.	System Designation	GDC or Reg. Guide	ESF System	Fluid	Size (in)	FSAR Arrangement Figure(1)	Location of Valve Inside/Outside Primary Containment	Length of Pipe - Containment to Outside Isolation Valve	Type Test	Potential Bypass Leakage Path	Number NMPC	Number GE	Type	Operator	Actuator Mode Primary	Actuator Mode Secondary
Z-92	N_2 supply to actuators for 2CPS*AOV109	56	No	Air/N_2	1	6.2-70 Sh. 33A	Outside Inside	10'-2" -	C	Yes	2CPS*SOV133 2CPS*V51	- -	Globe Check	SOV N/A	Elec. Process	N/A N/A
Z-96	N_2 supply to actuators for 2CPS*AOV107	56	No	Air/N_2	1	6.2-70 Sh. 33	Outside Inside	19'-8" -	C	Yes	2CPS*SOV132 2CPS*V50	- -	Globe Check	SOV N/A	Elec. Process	N/A N/A
Z-98A	RHR relief valve discharge to suppression pool	56	Yes	Water	3	6.2-70 Sh. 38	Outside	207'-5"	A	No(29)	2CSL*RV123 2CSL*RV105 2RHS*RV61A 2RHS*RV110 2RHS*RV139 2RHS*RV20A	E21-F031 E21-F018 E12-F005A E12-F005 E12-F030 E12-F025A	Relief Valves	N/A	N/A	N/A
Z-98B	RHR relief valve discharge to suppression pool	56	Yes	Water	3	6.2-70 Sh. 38	Outside	09'-2"	A	No(29)	2CSH*RV114 2CSH*RV113 2RHS*RV61B 2RHS*RV61C 2RHS*RV20B	E22-F035 E22-F018 E12-F005B E12-F005C E12-F025B	Relief Valves	N/A	N/A	N/A
Z-99A	Hydraulic unit from recirc flow control valve HYV 17A (drain line)	56	No	Hydraulic	3/4	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV63A 2RCS*SOV82A	-	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A
Z-99B	Hydraulic unit to recirc flow control valve HYV 17A (open line)	56	No	Hydraulic	1	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV67A 2RCS*SOV81A	-	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A
Z-99C	Hydraulic unit to recirc flow control valve HYV 17A (pilot line)	56	No	Hydraulic	1	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV56A 2RCS*SOV80A	-	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A

TABLE 6.2-56 (Cont)

FSAR Arrangement Figure(1)	Location of Valve Inside/ Outside Primary Containment	Length of Pipe - Connected to Outboard Isolation Valve	Type	Essential (Yes/No)	Number SMBC	Number GE	Valve(9) Type	Operator	Actuator Mode Primary	Actuator Mode Secondary	Position Normal (3)	Position Shutdown	Position Post-Accident	Position Power Failure	Isolation Signal (4)	Closure Time (5,6)	Power Source (7)	Notes
6.2-70 Sh. 33i	Outside	30'-2"	C	Yes	2CPS*SOV133	-	Globe	SOV	Elec.	N/A	Closed	Closed	Closed	Closed	B,F,Y,RM,Z	5	Div II	
	Inside	-			2CPS*V51	-	Check	N/A	Process	N/A	Closed	Closed	Closed	Closed	Reverse flow	N/A	N/A	
6.2-70 Sh. 33i	Outside	19'-8"	C	Yes	2CPS*SOV132	-	Globe	SOV	Elec.	N/A	Closed	Closed	Closed	Closed	B,F,Y,RM,Z	5	Div II	
	Inside	-			2CPS*V50	-	Check	N/A	Process	N/A	Closed	Closed	Closed	Closed	Reverse flow	N/A	N/A	
6.2-70 Sh. 33	Outside	207'-6"	A	No(22)	2CSL*RV123	E21-F021	Relief Valves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25
					2CSL*RV105	E21-F010												
					2RHS*RV61A	E12-F088A												
					2RHS*RV110	E12-F005												
					2LHS*RV139	E12-F030												
					2RHS*RV20A	E12-F025A												
6.2-70 Sh. 33	Outside	89'-4"	A	No(22)	2CSH*RV114	E22-F035	Relief Valves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25
					2CSH*RV113	E22-F015												
					2RHS*RV61B	E12-F088B												
					2RHS*RV61C	E12-F088C												
					2LHS*RV20B	E12-F025B												
6.2-70	Outside	0'-0"	N/A	Yes(23)	2RCS*SOV60A	-	Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div I	26
	Inside	0'-0"			2RCS*SOV82A		Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div II	
6.2-70	Outside	0'-0"	N/A	Yes(24)	2RCS*SOV67A	-	Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div I	26
	Inside	0'-0"			2RCS*SOV81A		Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div II	
6.2-70	Outside	0'-0"	N/A	Yes(23)	2RCS*SOV56A	-	Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div I	26
	Inside	0'-0"			2RCS*SOV80A		Globe	SOV	Elec.	N/A	Open	Closed	Closed	Closed	B,F,RM,Z	5	Div II	

Changes to Technical Specifications in Area of Rod Worth Minimizer

Subject: Justification for changes to Technical Specifications in area of rod worth minimizer

The requested changes to Technical Specifications are enclosed.

The current Technical Specification 3/4 10.2 allows suspension of constraints imposed by the rod sequence control system (RSCS) provided that the rod worth minimizer (RWM) is operable. This suspension is allowed for those tests identified in the Technical Specification 3/4 10.2. To perform those tests, however, it is also necessary to suspend the constraints imposed by RWM to allow for control rod movement. Therefore, Niagara Mohawk requests changes to the Technical Specifications to allow bypassing the RWM, in conjunction with bypassing the RSCS, for those tests to be performed.

The enclosed changes are consistent with Hope Creek and Limerick Unit 1 Technical Specifications 3/4 10.2.

CHANGE REQUESTED FOR CERTIFICATION

FINAL DRAFT

REACTIVITY CONTROL SYSTEMS

3/4.1.4 CONTROL ROD PROGRAM CONTROLS

ROD WORTH MINIMIZER

LIMITING CONDITIONS FOR OPERATION

3.1.4.1 The rod worth minimizer (RWM) shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2*,** when THERMAL POWER is less than or equal to 20% of RATED THERMAL POWER, the minimum allowable low-power setpoint.

ACTION:

a. With the RWM inoperable, verify control rod movement and compliance with the prescribed control rod pattern by a second licensed operator or other technically qualified member of the unit technical staff who is present at the reactor control console. Otherwise, control rod movement is permitted only by actuating the manual scram or by placing the reactor mode switch in the Shutdown position.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.1.4.1 The RWM shall be demonstrated OPERABLE:

a. In OPERATIONAL CONDITION 2 within 8 hours prior to withdrawal of control rods for the purpose of making the reactor critical, and in OPERATIONAL CONDITION 1 within 8 hours before RWM automatic initiation when reducing THERMAL POWER, by verifying proper indication of the selection error of at least one out-of-sequence control rod.

b. In OPERATIONAL CONDITION 2 within 8 hours prior to withdrawal of control rods for the purpose of making the reactor critical, by verifying the rod block function by demonstrating inability to withdraw an out-of-sequence control rod.

c. In OPERATIONAL CONDITION 1 within 1 hour after RWM automatic initiation when reducing THERMAL POWER, by verifying the rod block function by demonstrating inability to withdraw an out-of-sequence control rod.

d. By demonstrating that the control rod patterns and sequence input to the RWM computer are correctly loaded following any loading of the program into the computer.

* See Special Test Exception 3.10.2.

** Entry into OPERATIONAL CONDITION 2 and withdrawal of selected control rods is permitted for the purpose of determining the OPERABILITY of the RWM before withdrawal of control rods for the purpose of bringing the reactor to criticality.

REACTIVITY CONTROL SYSTEMS

ROD SEQUENCE CONTROL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.1.4.2 The rod sequence control system (RSCS) shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2* **, when THERMAL POWER is less than or equal to 20% RATED THERMAL POWER, the minimum allowable low-power setpoint.

ACTION:

a. With the RSCS inoperable, control rod movement shall not be permitted, except by a scram.

b. With inoperable control rod(s), OPERABLE control rod movement may continue by bypassing the inoperable control rod(s) in the RSCS provided that:

   1. The position and bypassing of inoperable control rod(s) are verified by a second licensed operator or other technically qualified member of the unit technical staff, and

   2. There are not more than 3 inoperable control rods in any RSCS group.

SURVEILLANCE REQUIREMENTS

4.1.4.2 The RSCS shall be demonstrated OPERABLE by:

   a. Performance of a self-test:

      1. Within 8 hours prior to each reactor startup, and
      2. Prior to movement of a control rod after rod inhibit mode automatic initiation when reducing THERMAL POWER.

   b. Attempting to select and move an inhibited control rod:

      1. After withdrawal of the first in-sequence control rod for each reactor startup, and

      2. Within 1 hour after rod inhibit mode automatic initiation when reducing THERMAL POWER.

---

* See Special Test Exception 3.10.2.

** Entry into OPERATIONAL CONDITION 2 and withdrawal of selected control rods is permitted for the purpose of determining the OPERABILITY of the RSCS prior to withdrawal of control rods for the purpose of bringing the reactor to criticality.

FINAL DRAFT

SPECIAL TEST EXCEPTIONS

3/4.10.2 ROD SEQUENCE CONTROL SYSTEM

LIMITING CONDITIONS FOR OPERATION

rod worth minimizer (RWM) per specification 3.1.4.1 and by

3.10.2 The sequence constraints imposed on control rod groups by the rod sequence control system (RSCS) per Specification 3.1.4.2 may be suspended by means of bypass switches for the following tests provided that ~~the rod worth minimizer is OPERABLE per Specification 3.1.4.1:~~

a. Shutdown margin demonstrations, Specification 4.1.1.
b. Control rod scram, Specification 4.1.3.2.
c. Control rod friction measurements.
d. Startup Test Program with the THERMAL POWER less than 20% of RATED THERMAL POWER.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With the requirements of the above specification not satisfied, verify that the ~~RSCS~~ RWM and/or the RSCS is OPERABLE per Specification ~~3.1.4.2.~~ 3.1.4.1 and 3.1.4.2, respectively.

SURVEILLANCE REQUIREMENTS

4.10.2 When the sequence constraints imposed on control rod groups by the RSCS and/or RWM are bypassed, verify:

~~a. Within 8 hours before bypassing any sequence constraint and at least once per 12 hours while any sequence constraint is bypassed:~~

~~1. That the rod worth minimizer is OPERABLE per Specification 3.1.4.1,~~

a. 2. That movement of control rods from 75% ROD DENSITY to the RSCS low-power setpoint is limited to the approved control rod withdrawal sequence during scram and friction tests.

~~b.~~ c. Conformance with this specification and test procedures by a second licensed operator or other technically qualified member of the unit technical staff.

control rod movement prescribed for this testing is verified by a second operator or other technically qualified member of the unit technical staff present at the reactor console.

b. That movement of control rod during shutdown margin demonstrations is limited to the prescribed sequence per Specification 3.10.3.

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SPECIAL TEST EXCEPTION

3/4.10.3 SHUTDOWN MARGIN DEMONSTRATIONS

LIMITING CONDITIONS FOR OPERATION

3.10.3 The provisions of Specification 3.9.1, Specification 3.9.3, and Table 1.2 may be suspended to permit the reactor mode switch to be in the Startup position and to allow more than one control rod to be withdrawn for shutdown margin demonstration, provided that at least the following requirements are satisfied.

a. The source range monitors are OPERABLE with the RPS circuitry "shorting links" removed per Specification 3.9.2.

b. The rod worth minimizer is OPERABLE per Specification 3.1.4.1 and is programmed for the shutdown margin demonstration, or conformance with the shutdown margin demonstration procedure is verified by a second licensed operator or other technically qualified member of the unit technical staff.

c. The continuous rod withdrawal control shall not be used during out-of-sequence movement of the control rods.

d. No other CORE ALTERATIONS are in progress.

APPLICABILITY: OPERATIONAL CONDITION 5, during shutdown margin demonstrations.

ACTION:

With the requirements of the above specification not satisfied, immediately place the reactor mode switch in the Shutdown or Refuel position.

SURVEILLANCE REQUIREMENTS

4.10.3 Within 30 minutes prior to and at least once per 12 hours during the performance of a shutdown margin demonstration, verify that;

a. The source range monitors are OPERABLE per Specification 3.9.2,

b. The rod worth minimizer is OPERABLE with the required program per Specification 3.1.4.1 or a second licensed operator or other technically qualified member of the unit technical staff is present and verifies compliance with the shutdown demonstration procedures, and

c. No other CORE ALTERATIONS are in progress.

Changes to Technical Specifications

on Other Items

Subject: Changes to Technical Specifications for items required for certification

The requested changes to Technical Specifications are enclosed. These changes are requested for certification and reflect the Nine Mile Point Unit 2 design.

2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

THERMAL POWER, Low Pressure or Low Flow

2.1.1 THERMAL POWER shall not exceed 25% of RATED THERMAL POWER with the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With THERMAL POWER exceeding 25% of RATED THERMAL POWER and the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.7.

THERMAL POWER, High Pressure and High Flow

2.1.2 The MINIMUM CRITICAL POWER RATIO (MCPR) shall not be less than 1.06 with two recirculation loop operation and shall not be less than 1.07 with single recirculation loop operation with the reactor vessel steam dome pressure greater than 785 psig and core flow greater than 10% of rated flow.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With MCPR less than 1.06, with two recirculation loop operation or less than 1.07 with single loop operation, the reactor vessel steam dome pressure greater than 785 psig, and core flow greater than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.7.

REACTOR COOLANT SYSTEM PRESSURE

2.1.3 The reactor coolant system pressure, as measured in the reactor vessel steam dome, shall not exceed 1325 psig.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and 4.

ACTION:

With the reactor coolant system pressure as measured in the reactor vessel steam dome above 1325 psig, be in at least HOT SHUTDOWN with reactor coolant system pressure less than or equal to 1325 psig within 2 hours and comply with the requirements of Specification 6.7.

REACTOR VESSEL WATER LEVEL

2.1.4 The reactor vessel water level shall be above the top of the active irradiated fuel.

POWER DISTRIBUTION LIMITS

3/4.2.3 MINIMUM CRITICAL POWER RATIO (ODYN OPTION B)

LIMITING CONDITIONS FOR OPERATION

3.2.3 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be equal to or greater than the MCPR limit shown in Figure 3.2.3-1 times the K_f shown in Figure 3.2.3-2 and adjusted as required for reduced feedwater temperature with:*

$$\tau = \frac{(\tau_{ave} - \tau_B)}{\tau_A - \tau_B}$$

where:

τ_A = 0.86 seconds, control rod average scram insertion time limit to notch 39 per Specification 3.1.3.3,

$$\tau_B = 0.688 + 1.65 \left[\frac{N_1}{\sum_{i=1}^{n} N_i} \right]^{\frac{1}{2}} [0.052],$$

$$\tau_{ave} = \frac{\sum_{i=1}^{n} N_i \tau_i}{\sum_{i=1}^{n} N_i},$$

n = number of surveillance tests performed to date in cycle

N_i = number of active control rods measured in the i^{th} surveillance test,

τ_i = average scram time to notch 39 of all rods measured in the i^{th} surveillance test

N_1 = total number of active rods measured in Specification 4.1.3.2.a.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.

---

*Add 0.03 to the operating MCPR when feedwater temperature is <400°F and ≥320°F or add 0.06 to operating MCPR when feedwater temperature <320°F and ≥250°F. These delta MCPR adjustments are only required for steady state operation when feedwater temperature is reduced.

TABLE 4.3.6-1 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

* With THERMAL POWER greater than or equal to 30% or more of RATED THERMAL POWER.

** With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

(a) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(b) Within 24 hours before startup, if not performed within the previous 7 days.

(c) Includes reactor manual control multiplexing system input.

TABLE 3.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. Reactor Vessel Pressure	2	1	1, 2	80
2. Reactor Vessel Water Level				
a. Fuel Zone	2	1	1, 2	80
b. Wide Range	2	1	1, 2	80
3. Suppression Pool Water Level				
a. Narrow Range	2	1	1, 2, 3	83
b. Wide Range	2	1	1, 2, 3	83
4. Suppression Pool Water Temperature	8, 2/Quadrant	4, 1/Quadrant	1, 2	80
5. Suppression Chamber Pressure	2	1	1, 2	80
~~6.~~ 7 Drywell Pressure	2	1	1, 2	80
~~7.~~ 8 Drywell Air Temperature	2	1	1, 2	80
~~8.~~ 9 Drywell Oxygen Concentration	2	1	1, 2	80
~~9.~~ 10 Drywell Hydrogen Concentration Analyzer and Monitor	2	1	1, 2	80
~~10.~~ 11 Safety/Relief Valve Position Indicators*	2/Valve	1/Valve	1, 2	80
6. SUPPRESSION CHAMBER AIR TEMPERATURE	2	1	1, 2	80

TABLE 3.3.7.5-1 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	APPLICABLE OPERATIONAL CONDITIONS	ACTION
~~11.~~12 Drywell High Range Radiation Monitors	2	1	1, 2, 3	81
~~12.~~13 RHR Heat Exchanger Service Water Radiation Monitor	1/Heat Exchanger	1/Heat Exchanger	1, 2, 3	81
~~13.~~14 Refuel Platform Area Radiation Monitor	1	1	**	82
~~14.~~15 Neutron Flux†				
APRM	2	1	1, 2	80
IRM	2	1	1, 2	80
SRM	2	1	1	80
~~15.~~16 Primary Containment Isolation Valve Position Indication	1	1	1, 2	84

*Acoustic monitoring and tail pipe temperature
**When handling fuel, or components in the fuel pool or reactor cavity.
†Neutron flux indication is sufficient to meet the OPERABILITY requirement of this specification.

TABLE 4.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	APPLICABLE OPERATIONAL CONDITIONS
1. Reactor Vessel Pressure	M	R	1, 2
2. Reactor Vessel Water Level			
a. Fuel Zone	M	R	1, 2
b. Wide Range	M	R	1, 2
3. Suppression Pool Water Level			
a. Narrow Range	M	R	1, 2, 3
b. Wide Range	M	R	1, 2, 3
4. Suppression Pool Water Temperature	M	R*	1, 2
5. Suppression Chamber Pressure	M	R*	1, 2
~~6.~~ 7 Drywell Pressure	M	R	1, 2
~~7.~~ 8 Drywell Air Temperature	M	R*	1, 2
~~8.~~ 9 Drywell Oxygen Concentration	M	R	1, 2
~~9.~~ 10 Drywell Hydrogen Concentration Analyzer and Monitor	M	Q**	1, 2
~~10.~~ 11 Safety/Relief Valve Position Indicators	M	R	1, 2
~~11.~~ 12 Drywell High Range Radiation Monitors	M	R†	1, 2, 3
~~12.~~ 13 RHR Heat Exchanger Service Water Radiation Monitor	M	R	1, 2, 3
~~13.~~ 14 Refuel Platform Area Radiation Monitor	M	R	††
~~14.~~ 15 Neutron Flux			
a. APRM	M	R	1, 2
b. IRM	M	R	1, 2
c. SRM	M	R	1
~~15.~~ 16 Primary Containment Isolation Valve Position Indication	M	R	1, 2
6. SUPPRESSION CHAMBER AIR TEMPERATURE	M	R*	1,2

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TABLE 3.4.3.2-2

REACTOR COOLANT SYSTEM INTERFACE VALVES - LEAKAGE PRESSURE MONITORS

INSTRUMENT NUMBER	VALVE NUMBER	SETPOINT (PSIG)
2RHS*~~PIS7A~~ PSX7A†	2RHS*MOV24A	475 ±6
	2RHS*MOV40A	475 ±6
	2RHS*MOV22A	475 ±6
	2RHS*MOV23A	475 ±6
	2RHS*MOV80A	475 ±6
2RHS*~~PIS7B~~ PSX7B†	2RHS*MOV24B	475 ±6
	2RHS*MOV40B	475 ±6
	2RHS*MOV22B	475 ±6
	2RHS*MOV23B	475 ±6
	2RHS*MOV80B	475 ±6
	2RHS*MOV104	475 ±6
2RHS*~~PIS7C~~ PSX7C†	2RHS*MOV24C	475 ±6
2CSL*PS108	2CSL*MOV104	525 ±6
2RHS*PIS111	2RHS*MOV112	171 ±6
	2RHS*MOV113	171 ±6

TABLE 3.4.3.2-3

HIGH/LOW-PRESSURE INTERFACE INTERLOCKS

INSTRUMENT NUMBER	VALVE NUMBER	SETPOINT (PSIG)
2RHS*~~PIS~~PS75A/76A†	2RHS*MOV23A	465 ±12
2RHS*~~PIS~~PS75B/76B†	2RHS*MOV23B	465 ±12

† - Pressure switch has process indication

SURVEILLANCE REQUIREMENTS

4.5.1 (Continued)

e. For the ADS by:

1. At least once per 31 days, performing a CHANNEL FUNCTIONAL TEST of the accumulator backup compressed gas system, low-pressure alarm system.

2. At least once per 18 months:

a) Performing a system functional test which includes simulated automatic actuation of the system throughout its emergency operating sequence, excluding actual valve actuation.

b) Manually opening each ADS valve when the reactor steam dome pressure is greater than or equal to 100 psig* and observing that either:

1) The SRV discharge acoustic monitoring system responds accordingly, or

2) The control valve or bypass valve responds accordingly, or

3) There is a corresponding change in the measured steam flow, or

4) The SRV discharge line temperature monitoring system responds accordingly.

c) Performing a CHANNEL CALIBRATION of the accumulator backup compressed gas system, low-pressure alarm system, and verifying an alarm setpoint of 163.5 ~~+ 2.5, - 2.5~~ + 1.0, - 1.0 psig on decreasing pressure.

d) Performing a leak rate test for ADS SRV pneumatic operators by pressurizing each ADS accumulator at 178 psig (supply header high pressure alarm) up to its supply header isolation check valve with the SRV in the open position. Total leakage rate for each SRV shall not exceed 0.5 SCFH for the SRV actuated by either of the ADS solenoids.

* The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL(a)	MAXIMUM CLOSING TIME (SECONDS)
2IAS*SOV164	ADS Hdr A N_2 supply Outside IV	8	B,F,Z,RM	5
2IAS*SOV165	ADS Hdr B N_2 supply Outside IV	8	B,F,Z,RM	5
2IAS*SOV166	IAS Drywell Relief Valve Outside IV	8	B,F,Z,RM	5
2IAS*SOV184	IAS Drywell Relief Valve Inside IV	8	B,F,Z,RM	5
2IAS*SOV168	Inst. Air to Testable Check Outside IV	8	B,F,Z,RM	5
2IAS*SOV180	Inst. Air to Testable Check Inside IV	8	B,F,Z,RM	5
2IAS*SOV167	IAS to Test Ck. & Vac. Bkrs. Outside IV	8	B,F,Z,RM	5
2IAS*SOV185	IAS to Test Ck. & Vac. Bkrs. Inside IV	8	B,F,Z,RM	5
2HCS*MOV1 A,B	H_2 Recombiners Sply to Supp. Chamber Outside IV's	8	B,F,Z,RM	30
2HCS*MOV2 A,B	H_2 Recomb. Ret. from Supp. Chamber Outside IV's	8	B,F,Z,RM	30
2HCS*MOV3 A,B	H_2 Recomb. Return from Drywell Outside IV's	8	B,F,Z,RM	30
2HCS*MOV4 A,B(n)	H_2 Recomb. Suply. to Supp. Chamber Inside IV's	8	B,F,Z,RM	30
2HCS*MOV5 A,B(n)	H_2 Recomb. Ret. from Supp. Chamber Inside IV's	8	B,F,Z,RM	30
2HCS*MOV6 A,B(n)	H_2 Recomb. Ret. from Drywell Inside IV's	8	B,F,Z,RM	30
2CPS*SOV119	Containment Purge to Supp. Chamber Outside IV	9	B,F,Y,Z,RM	5
2CPS*SOV120	Containment Purge to Drywell Outside IV	9	B,F,Y,Z,RM	5
2CPS*SOV121(n)	Containment Purge to Supp. Chamber Inside IV	9	B,F,Y,Z,RM	5
2CPS*SOV122(n)	Containment Purge to Drywell Inside IV	9	B,F,Y,Z,RM	5
2CMS*SOV24 A,B,C,D	CMS from Drywell Inside & Outside IV's	8	B,F,Z,RM	5
2CMS*SOV26 A,B,C,D	CMS from SP Inside & Outside IV's	8	B,F,Z,RM	5
2CMS*SOV32 A,B	CMS to Drywell Outside IV's	8	B,F,Z,RM	5
2CMS*SOV33 A,B(n)	CMS to Drywell Inside IV's	8	B,F,Z,RM	5
2CMS*SOV34 A,B(n)	CMS to SP Inside IV's	8	B,F,Z,RM	5
2CMS*SOV35 A,B	CMS to SP Outside IV's	8	B,F,Z,RM	5
2CMS*SOV60 A,B	CMS to Drywell Outside IV's	8	B,F,Z,RM	5
2CMS*SOV61 A,B(n)	CMS to Drywell Inside IV's	8	B,F,Z,RM	5
2CMS*SOV62 A,B	CMS to Drywell Outside IV's	8	B,F,Z,RM	5
2CMS*SOV63 A,B(n)	CMS to Drywell Inside IV's	8	B,F,Z,RM	5

SURVEILLANCE REQUIREMENTS

4.7.1.1.1.d (Continued)

3. Each pump runs and maintains service water pump discharge pressure equal to or greater than 80 psig with a pump flow equal to or greater than 6500 gpm.

4. The resistance to ground is ≥ 28 ohms for each feeder cable that powers the intake deicing heater systems.

4.7.1.1.2 The Intake Deicing Heater System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying the intake tunnel water temperature is greater than or equal to 39°F, or

b. At least once per 7 days by verifying that the current of the heater feeder cables at the motor control centers is 10 amps* or more (total for three phases) at ≥ 518 volts per divisional heater in each intake structure.

* For 7 heater elements in operation.

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SURVEILLANCE REQUIREMENTS

4.7.1.2.1.d (Continued)

3. Each pump runs and maintains service water pump discharge pressure equal to or greater than 80 psig with each pump flow equal to or greater than 6500 gpm.

4. The resistance to ground is 28 ohms or more for each feeder cable that powers the intake deicing heater systems.

4.7.1.2.2 The Intake Deicing Heater System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying the intake tunnel water temperature is greater than or equal to 39°F, or

b. At least once per 7 days by verifying that the current of the heater feeder cables at the motor control centers is 10 amps* or more (total for 3 phases) at $\geq$ 518 volts per divisional heater in each intake structure.

* For 7 heater elements in operation.

SPECIAL TEST EXCEPTIONS

3/4.10.7 SPECIAL INSTRUMENTATION - INITIAL CORE LOADING

LIMITING CONDITIONS FOR OPERATION

3.10.7 During initial core loading within the Startup Test Program the provisions of Specification 3/4.9.2 may be suspended provided that at least two source range monitor (SRM) channels with detectors inserted to the normal operating level are OPERABLE with:

a. One of the required SRM channels continuously indicating* in the control room,

b. One of the required SRM detectors located in the quadrant where CORE ALTERATIONS are being performed and the other required SRM detector located in an adjacent quadrant,**

c. The RPS "shorting links" shall be removed prior to and during fuel loading,

d. The reactor mode switch is OPERABLE and locked in the Refuel ~~Shutdown~~ position.

APPLICABILITY: OPERATIONAL CONDITION 5

ACTION:

With the requirements of the above specification not satisfied, immediately suspended all operations involving initial core loading.

SURVEILLANCE REQUIREMENTS

4.10.7.1 Within one hour prior to and at least once per 12 hours during the initial core loading verify that:

a. The above required SRM channels are OPERABLE by:

1. Performance of a CHANNEL CHECK***

2. Confirming that the above required SRM detectors are at the normal operating level and located in the quadrants required by Specification 3.10.7.

---

*Up to 16 fuel bundles may be loaded without a visual indication of count rate.

**The use of special movable detectors during CORE ALTERATIONS in place of the normal SRM nuclear detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

***May be performed by use of movable neutron source.

SPECIAL TEST EXCEPTIONS

SPECIAL INSTRUMENTATION - INITIAL CORE LOADING

SURVEILLANCE REQUIREMENTS (Continued)

4.10.7.1 (Continued)

b. The RPS "shorting links" are removed.

c. The reactor mode switch is locked in the REFUEL position.

4.10.7.2 Perform a CHANNEL FUNCTIONAL TEST for the above required SRM channels within 24 hours prior to the start and at least once per 7 days during initial core loading.

4.10.7.3 For at least one SRM channel, verify that the count rate is at least 0.7 cps*:

a. Immediately following the loading of the first 16 fuel bundles.

b. At least once per 12 hours thereafter during initial core loading.

*Provided signal-to-noise is $\geq$ 2. Otherwise, 3 cps.

Changes to Technical Specifications

on Other Items

Subject: Editoral changes to Technical Specifications

The requested changes to Technical Specifications are enclosed. These items are editorial changes and are self explanatory.

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
5. Main Steam Line Isolation Valve - Closure	1(e)	4	4
6. Main Steam Line Radiation - High	1, 2(d)	2~~(d)~~	5
7. Drywell Pressure - High	1, 2(f)	2(g)	1
8. Scram Discharge Volume Water Level - High			
a. Transmitter Trip Units	1, 2	2	1
	5(h)	2	3
b. Float Switches	1, 2	2	1
	5(h)	2	3
9. Turbine Stop Valve - Closure	1(i)	4(j)	6
10. Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	1(i)	2(j)	6
11. Reactor Mode Switch Shutdown Position	1, 2	2	1
	3, 4	2	7
	5	2	3
12. Manual Scram	1, 2	2	1
	3, 4	2	8
	5	2	9

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INSTRUMENTATION

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.4.1 The anticipated transient without scram recirculation pump Trip (ATWS-RPT) System instrumentation channels shown in Table 3.3.4.1-1 shall be OPERABLE with their Trip Setpoints set consistent with values shown in the Trip Setpoint column of Table 3.3.4.1-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With an ATWS-RPT system instrumentation channel Trip Setpoint less conservative ~~then~~ than the value shown in the Allowable Value column of Table 3.3.4.1-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel Trip Setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both Trip Systems, place the inoperable channel(s) in the tripped condition within 1 hour.

c. With the number of OPERABLE channels two or more less than required by the Minimum Operable Channels per Trip System requirement for one Trip System and:

   1. If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition* within 1 hour.

   2. If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, declare the Trip System inoperable.

d. With one Trip System inoperable, restore the inoperable Trip System to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.

e. With both Trip Systems inoperable, restore at least one Trip System to OPERABLE status within 1 hour or be in at least STARTUP within the next 6 hours.

---

* The inoperable channels need not be placed in the tripped condition if this would cause the Trip Function to occur. In this case, the inoperable channels shall be restored to OPERABLE status within 2 hours, or the Trip System shall be declared inoperable.

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TABLE 3.3.7.4-2

REMOTE SHUTDOWN SYSTEM CONTROLS

SYSTEM/SUBSYSTEM*	SYSTEMS/SUBSYSTEMS	MINIMUM OPERABLE SYSTEMS/ SUBSYSTEMS
1. RCIC System	1	1
2. RHR System		
A. Shutdown Cooling Mode	2	1/Division
B. Suppression Pool Cooling Mode	2	1/Division
3. Service Water System		
A. Pumps	6	2/Division
B. Supply Valves to Division I Division II Diesels	1/Division	1/Division
4. ADS System (Pressure Relief)	4 Valves/Division	4 Valves/Divisio n
5. Nuclear Steam Supply Shutoff System (Isolation Groups 4 & 5 Reset)	1/Division	1/Division
6. Nitrogen Supply to ADS Accumulator Tanks	1/Division	1/Division

* Includes applicable transfer switches

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TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL(a)	MAXIMUM CLOSING TIME (SECONDS)
D. Other				
Safety Relief				
2RHS*RV20 A,B,C(o)	RHS Rv disch. to SP Outside IVs			
2RHS*RV61 A,B,C(o)	RHS Rv disch. to SP Outside IVs			
2RHS*RV108(o)	RHS Rv disch. to SP Outside IVs			
2RHS*RV110(o)	SDC to RHR Pump suction Rv			
2RHS*RV139(o)	RHR Hdr. Flush to Radwaste RV			
2RHS*RV152(o)	SDC Supply from RCS RV Inside IV			
2RHS*RV56 A,B(d)	RHS HX shell side RVs			
2RHS*SV34 A,B(d)	RHS HX steam supply Safety valves			
2RHS*SV62 A,B(d)	RHS HX steam supply Safety valves			
2RHS*RVV35 A,B(d)	RHS Vacuum Breakers			
2CSL*RV105(o)	CSL RV Disch. to SP Outside IV			
2CSL*RV123(o)	CSL RV Disch. to SP Outside IV			
2RHS*RVV36 A,B(d)	RHS Vacuum Breakers			
2CCP*RV170(o)	CCP RV Discharge Inside IV			
2CCP*RV171(o)	CCP RV Discharge Inside IV			
2CSH*RV113(o)	CSH RV Disch. to SP Outside IV			
2CSH*RV114(o)	CSH RV Disch. to SP Outside IV			

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CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT

STANDBY GAS TREATMENT SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.6.5.3 Two independent standby gas treatment (SGTS) subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and *.

ACTION:

a. With one standby gas treatment subsystem inoperable:

1. In OPERATIONAL CONDITION 1, 2 or 3, suspend all VENTING or PURGING of the drywell and/or suppression chamber** within 30 minutes, and restore the inoperable subsystem to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. In OPERATIONAL CONDITION *, restore the inoperable subsystem to OPERABLE status within 7 days, or suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS, and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.

b. With both standby gas treatment subsystems inoperable:

1. In OPERATIONAL CONDITION 1, 2, or 3, suspend all operations involving VENTING, PURGING, or pressure control of the drywell or suppression chamber and initiate action within 1 hour to be in at least HOT SHUTDOWN within the next 12 hours, and in COLD SHUTDOWN within the following 24 hours.

2. In OPERATIONAL CONDITION *, suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS or operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3. are not applicable.

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* When irradiated fuel is being handled in the reactor building and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

** The requirement to suspend VENTING or PURGING with one inoperable SGTS subsystem shall not apply to the use of valves 2CPS*AOV108 (14-inch) and 2CPS*AOV110 (14-inch), or 2CPS*AOV109 (12-inch) and 2CPS*AOV111 (12-inch), for primary containment pressure control, provided 2GTS*AOV101 is closed, and its 2-inch bypass line is the only flow path to the standby gas treatment system.

PLANT SYSTEMS

FIRE SUPPRESSION SYSTEMS

FIRE SUPPRESSION WATER SYSTEM

SURVEILLANCE REQUIREMENTS

4.7.7.1.3 The diesel-driven fire pump starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The electrolyte level of each cell is above the plates,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level, is 1.235 or more,

3. The overall battery voltage is 25.5 volts* or more with the battery on float charge.

b. At least once per 92 days by verifying that all cell parameters for all battery cells are demonstrated OPERABLE per Specification 4.7.7.1.3.a and the difference between the pilot cell with the highest specific gravity when compared to the pilot cell with the lowest specific gravity is 0.015 or less.

c. At least once per 18 months by verifying that:

1. The batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration, and

2. Battery and terminal connections are clean, tight, and free of corrosion.

* An overall battery voltage of 25.5 volts or more represents 12 pilot cells each carrying at least a 2.13-volt charge.

LIMITING CONDITIONS FOR OPERATION

3.8.1.1 (Continued)

ACTION:

b. (Continued)

separately for each diesel generator within 24 hours.* Restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one offsite circuit of the above required AC sources and diesel generator EDG*1 or EDG*3 of the above required AC electrical power sources inoperable, demonstrate the OPERABILITY of the remaining AC sources by performing Surveillance Requirement 4.8.1.1.1 within 1 hour and at least once every 8 hours thereafter. If a diesel generator became inoperable from any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators, separately for each diesel generator, by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 within 8 hours for each diesel generator which has not been successfully tested in the past 24 hours unless the diesel generators are already operating and loaded.* Restore at least one of the inoperable AC sources to OPERABLE status within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore at least two offsite circuits and diesel generators EDG*1 and EDG*3 to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With diesel generator EDG*2 of the above required AC electrical power sources inoperable, demonstrate the OPERABILITY of the offsite AC sources by performing Surveillance Requirement 4.8.1.1.1 within 1 hour and at least once every 8 hours thereafter. If the diesel generator becomes inoperable as a result of any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators, separately, by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 within 24 hours.* Restore diesel generator EDG*2 to OPERABLE status within 72 hours or declare the HPCS inoperable and take the ACTION required by Specifications 3.5.1 and 3.7.1.1.

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* This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABLE status. The provisions of Specification 3.0.2 are not applicable.

ELECTRICAL POWER SYSTEMS

AC SOURCES

AC SOURCES - OPERATING

LIMITING CONDITIONS FOR OPERATION

3.8.1.1 (Continued)

ACTION:

e. With diesel generator EDG*1 or EDG*3 of the above required AC electrical power sources inoperable, in addition to taking ACTION b or c, as applicable, verify within 2 hours that all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

f. With both of the above required offsite circuits inoperable, demonstrate the OPERABILITY of three diesel generators, separately, by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 separately for each diesel generator within 8 hours unless the diesel generators are already operating and loaded; restore at least one of the above required offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours. With only one offsite circuit restored to OPERABLE status, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. A successful test(s) of diesel generator OPERABILITY per Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5, performed under this ACTION statement for the OPERABLE diesel generators, satisfies the diesel generator test requirements of ACTION statement a.

g. With diesel generators EDG*1 and EDG*3 of the above required AC electrical power sources inoperable, demonstrate the OPERABILITY of the remaining AC sources by performing Surveillance Requirement 4.8.1.1.1 within 1 hour and at least once every 8 hours thereafter and Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for diesel generator EDG*2 within 8 hours.* Restore at least one of the inoperable diesel generators EDG*1 and EDG*3 to OPERABLE status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore both diesel generators EDG*1 and EDG*3 to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

* This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABLE status. The provisions of Specification 3.0.2 are not applicable.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION SYSTEMS

DISTRIBUTION - OPERATING

LIMITING CONDITIONS FOR OPERATION

3.8.3.1 (Continued)

ACTION:

a. For AC power distribution:

1. With either Division I or Division II of the above required AC distribution system not energized, reenergize the division within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With Division III of the above required AC distribution system not energized, declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.

b. For DC power distribution:

1. With either Division I or Division II of the above required DC distribution system not energized, reenergize the division within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With Division III of the above required DC distribution system not energized, declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.

SURVEILLANCE REQUIREMENTS

4.8.3.1.1 Each of the above required power distribution system divisions shall be determined energized at least once per 7 days by verifying correct supply breaker alignment and by verifying no ~~bypass~~ inoperability status indicator lights in the control room are lit.*

4.8.3.1.2 Each of the above required power distribution switchgear shall be determined energized at least once per 7 days by verifying the voltage on the panels.

* Which would indicate a loss of power to one or more of the required MCCs, load center, or panels.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION SYSTEMS

DISTRIBUTION - SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

3.8.3.2 As a minimum, the following power distribution system divisions shall be energized:

a. For AC power distribution, Division I or Division II, and when the HPCS system is required to be OPERABLE, Division III, with:

1. Division I consisting of:

a) 4160-volt AC bus
b) 600-volt AC load center/MCCs/distribution panels
c) 240/120-volt AC and 120-volt AC distribution panels, energized from inverter 2VBA*UPS2A or alternate supply

2. Division II consisting of:

a) 4160-volt AC bus
b) 600-volt AC load center/MCCs/distribution panels
c) 240/120-volt AC and 120-volt AC distribution panels, energized from inverter 2VBA*UPS2B or alternate supply

3. Division III consisting of:

a) 4160-volt AC bus
b) 600-volt AC MCCs/distribution panels
c) 240/120-volt AC and 208/120-volt AC distribution panels
d) HPCS inverter energized from Division III batteries

b. For DC power distribution, Division I or Division II, and when the HPCS system is required to be OPERABLE, Division III, with:

1. Division I consisting of 125-volt DC switchgear, MCC, and distribution panels

2. Division II consisting of 125-volt DC switchgear, MCC, and distribution panels

3. Division III consisting of 125-volt DC distribution panels

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5, and *.

* When handling irradiated fuel in the ~~secondary containment~~ reactor building.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

DISTRIBUTION - SHUTDOWN

LIMITING CONDITIONS FOR OPERATION

3.8.3.2 .(Continued)

ACTION:

a. For AC power distribution:

1. With less than Division I and Division II of the above required AC distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the reactor building, and operations with a potential for draining the reactor vessel.

2. With Division III of the above required AC distribution system not energized, declare the HPCS system inoperable and take the ACTION required by Specifications 3.5.2 and 3.5.3.

b. For DC power distribution:

1. With less than Division I and Division II of the above required DC distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the reactor building, and operations with a potential for draining the reactor vessel.

2. With Division III of the above required DC distribution system not energized, declare the HPCS system inoperable and take the ACTION required by Specifications 3.5.2 and 3.5.3.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.3.2.1 At least the above required power distribution system divisions shall be determined energized at least once per 7 days by verifying correct supply breaker alignment and by verifying no ~~bypass~~ inoperability status indicator lights in the control room are lit.*

4.8.3.2.2 Each of the above required power distribution switchgear shall be determined energized at least once per 7 days by verifying the voltage on the panels.

* Which would indicate loss of power to one or more of the required MCCs, load centers, or panels.

ELECTRICAL POWER SYSTEMS

ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

PRIMARY CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITIONS FOR OPERATION

3.8.4.2 All primary containment penetration conductor overcurrent protective devices* shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment penetration conductor overcurrent protective devices* inoperable, declare the affected system or component inoperable and apply the appropriate ACTION statement for the affected system and:

   1. For 13.8-kV circuit breakers, deenergize the 13.8-kV circuits by tripping the associated redundant circuit breaker(s) within 72 hours and verify the redundant circuit breaker(s) to be tripped at least once every 7 days thereafter.

   2. For 600 volt MCC circuit breakers, remove the inoperable circuit breaker(s) from service by opening the breaker within 72 hours and verify the inoperable breaker(s) to be in the open position at least once every 7 days thereafter.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. The provisions of Specification 3.0.4 are not applicable to overcurrent devices in 13.8-kV circuits which have their redundant circuit breakers tripped or to 600-volt circuits which have the inoperable circuit breaker disconnected.

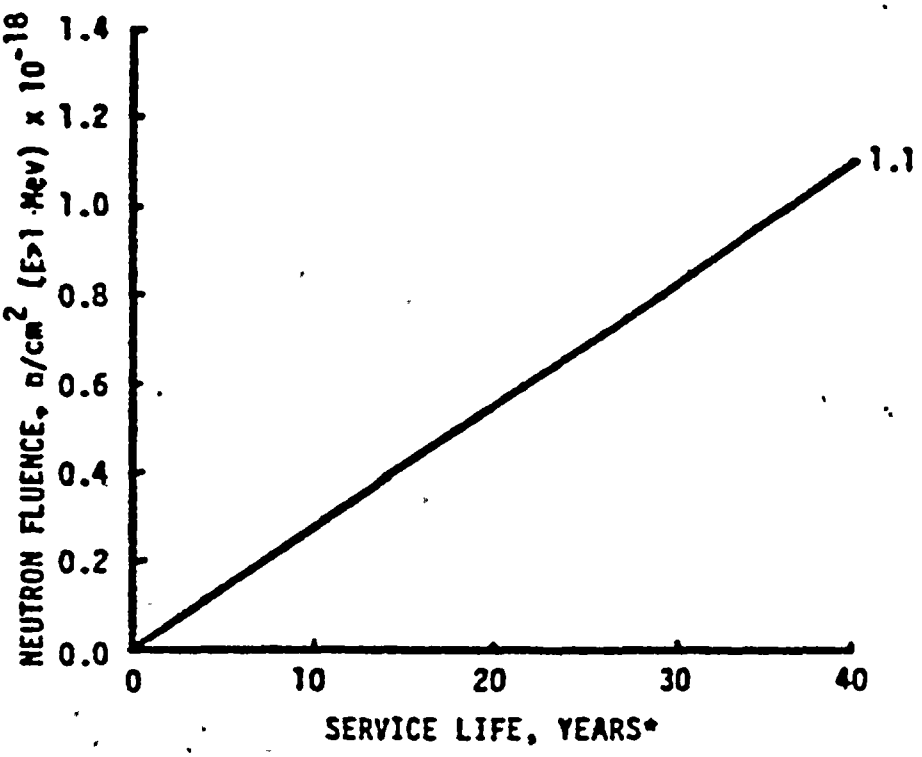
SURVEILLANCE REQUIREMENTS

4.8.4.2 Each of the primary containment penetration conductor overcurrent protective devices* shall be demonstrated OPERABLE:

a. At least once per 18 months:

   1. By verifying that the medium voltage 13.8-kV circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level and performing:

* Excluded from this specification are those penetration assemblies that are capable of withstanding the maximum current available because of an electrical fault inside containment.



~~FIGURE B 3/4 4.6-1 FAST NEUTRON FLUENCE (E>1 Mev) AT 1/4 T AS A FUNCTION OF SERVICE LIFE*~~

Bases Figure B3/4.4.6-1 Fast Neutron Fluence (E>1 MeV) at ¼ T as a Function of Service Life at 90% of RATED THERMAL POWER and 90% Availability

TABLE 6.2-56 (Cont)

Penetration No.	System Designation	GDC or Reg. Guide	ESF System	Fluid	Size (in)	PSAR Arrangement Figure(1)	Location of valve Inside/Outside Primary Containment	Length of Pipe - Containment to Outside Isolation Valve	Type Test (2)	Potential Bypass Leakage Path	Valve(9) Number SUEC	Valve(9) Number GE	Type	Operator	Actuator Mode Primary	Actuator Mode Secondary	Position Normal (3)	Position Shutdown	Position Post-Accident	Position Power Failure	Isolation Signal (4)	Closure Time (5,6)	Power Source (7)	Notes	
Z-92	N_2 supply to actuators for 2CPS*AOV109	56	No	Air/N_2	1	6.2-70 Sh. 43A	Outside Inside	10'-2" -	C	Yes	2CPS*SOV133 2CPS*V51	- -	Globe Check	SOV N/A	Elec. Process	N/A N/A	Closed Closed	Closed Closed	Closed Closed	Closed Closed	B,F,Y,RM,Z Reverse flow	5 N/A	Div II N/A		26
Z-96	N_2 supply to actuators for 2CPS*AOV107	56	No	Air/N_2	1	6.2-70 Sh. 43B	Outside Inside	19'-8" -	C	Yes	2CPS*SOV132 2CPS*V50	- -	Globe Check	SOV N/A	Elec. Process	N/A N/A	Closed Closed	Closed Closed	Closed Closed	Closed Closed	B,F,Y,RM,Z Reverse flow	5 N/A	Div II N/A		
Z-98A	RHR relief valve discharge to suppression pool	56	Yes	Water	3	6.2-70 Sh. 38	Outside	207'-6"	A	No(29)	2CSL*RV123 2CSL*RV105 2RHS*RV61A 2RHS*RV110 2RHS*RV139 2RHS*RV20A	E21-F031 E21-F018 E12-F088A E12-F005 E12-F030 E12-F025A	Relief Valves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25	
Z-98B	RHR relief valve discharge to suppression pool	56	Yes	Water	3	6.2-70 Sh. 38	Outside	89'-8"	A	No(29)	2CSH*RV114 2CSH*RV113 2RHS*RV61B 2RHS*RV61C 2RHS*RV20B	E22-F035 E22-F014 E12-F088B E12-F088C E12-F025B	Relief Valves	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25	
Z-99A	Hydraulic unit from recirc flow control valve HYV 17A (drain line)	56	No	Hydraulic	3/4	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV68A 2RCS*SOV82A	- -	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A	Open Open	Closed Closed	Closed Closed	Closed Closed	B,F,RM,Z B,F,RM,Z	5 5	Div I Div II	26	26
Z-99B	Hydraulic unit to recirc flow control valve HYV 17A (open line)	56	No	Hydraulic	1	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV67A 2RCS*SOV81A	- -	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A	Open Open	Closed Closed	Closed Closed	Closed Closed	B,F,RM,Z B,F,RM,Z	5 5	Div I Div II	26	26
Z-99C	Hydraulic unit to recirc flow control valve HYV 17A (pilot line)	56	No	Hydraulic	1	6.2-70 Sh. 39	Outside Inside	0'-0" 0'-0"	N/A	No(31)	2RCS*SOV66A 2RCS*SOV80A	- -	Globe Globe	SOV SOV	Elec. Elec.	N/A N/A	Open Open	Closed Closed	Closed Closed	Closed Closed	B,F,RM,Z B,F,RM,Z	5 5	Div I Div II	26	26

TABLE 6.2-56 (Cont)

Penetration No.	System Designation	GDC or Reg. Guide	ESF System	Fluid	Size (in)	FSAR Arrangement Figure(1)	Location of valve Inside/Outside Primary Containment	Length of Pipe - Containment to Outside Isolation Valve	Type Test (2)	Potential Bypass Leakage Path	Number SWEC	Number GE	Valve(9) Type	Operator	Actuator Mode Primary	Actuator Mode Secondary	Position Normal (3)	Position Shutdown	Position Post-Accident	Position Power Failure	Isolation Signal (4)	Closure Time (5,6)	Power Source (7)	Notes
Z-61F	CMS to wetwell	56	Yes	Air	3/4	6.2-70 Sh. 32	Inside		C	No(31)	2CMS*SOV34B	-	Globe	SOV	Elec.	N/A	Open	Closed	Open	Closed	B,F,RM,Z	5	Div II	
							Outside	0'-4"	C		2CMS*SOV35B	-	Globe	SOV	Elec.	N/A	Open	Closed	Open	Closed	B,F,RM,Z	5	Div II	
Z-67	Spare				10				A															
Z-68	Capped spare				10				A															
Z-69	Spare				6																			
Z-70	Capped spare				6				A															
Z-71	Spare				3				A															
Z-72	Capped spare				14				A															
Z-73	RHS relief valve discharge to suppression pool	56	No	Water	6	6.2-70 Sh. 33	Outside	48'-6"	A	No(32)	2RHS*RV108 2RHS*RV20C	E12-F036 E12-F025C	RV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	N/A	N/A	25
Z-74	Flanged spare				6				B															
Z-75	Capped spare				3				A															
Z-76	Capped spare				3				A															
Z-77	Capped spare				1 1/2				A															
Z-78	Capped spare				1 1/2				A															
Z-79	Capped spare				1 1/2				A															
Z-80	Spent fuel pool cooling	56	No	Water	1 1/2	6.2-70 Sh. 40	Outside	1'-6"	C	No(31)	2SFC*V203	-	Globe	Manual	Manual	N/A	Closed	Closed	Closed	N/A	LC	N/A	N/A	
							Inside		C		2SFC*V204	-	Globe	Manual	Manual	N/A	Closed	Closed	Closed	N/A	LC	N/A	N/A	
Z-81	Capped spare				1 1/2				A															
Z-82	Capped spare				1				A															