HOPE CREEK GENERATING STATION

HC.OP-SO.SM-0001(Q) - Rev. 17

ISOLATION SYSTEMS OPERATION

USE CATEGORY: II

- Biennial Review Performed: Yes ____ No ____ NA ✓
- Packages and Affected Document Numbers incorporated into this revision:
  CP No. _____ CP Rev. _____ AD No. _____ Rev No. _____ None ✓
- The following OTSCs were incorporated into this revision: None

REVISION SUMMARY

- Adds a qualifier to Step 5.3.2.A to perform this step only if a Group 1 isolation has occurred. Group 1 will not need a reset unless it has tripped, and performance of this step could cause a scram if the isolation had not occurred. This is additional information and is editorial. (70086941-0010)

IMPLEMENTATION REQUIREMENTS **Effective Date 10/29/08**

None

ISOLATION SYSTEMS OPERATION

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ATTACHMENTS

None

1.0 PURPOSE

This procedure outlines the steps necessary for the operation of the Isolation System.

2.0 PREREQUISITES

2.1 Placing the Isolation Systems in Standby

2.1.1. Reactor Protection System is in service to provide isolation signals to PCIS. ____

2.1.2. Nuclear Boiler System is in service IAW HC.OP-SO.BB-0001, to provide isolation signals to PCIS. ____

2.2 Isolation Systems Manual or Automatic Initiation/Observation

None

2.3 Resetting the Isolation Systems

2.3.1. System has been initiated IAW Section 5.2 of this procedure. ____

2.3.2. System is ready to be reset. ____

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

3.1.1. DO NOT override any Isolation OR Trip without approval of the SM/CRS. ____

3.1.2. WHEN ___ an isolation occurs, its effect upon the individual system in which it occurs should be evaluated for follow up action in that system. ____

3.1.3. BC-HVF008 AND BC-HVF009 will isolate on a loss of power to either the A channel OR the D Channel of NSSSS. ____

3.1.4. All half isolation signals from Core Spray OR NS4 into PCIS logics, will cause the isolation logic tripped light to flash. ____

3.2 **Limitations**

3.2.1. **ENSURE** compliance with the Isolation Actuation Instrumentation operability requirements of Technical Specifications 3/4.3.2. ____

3.2.2. **ENSURE** compliance with the Containment Isolation Valves operability requirements of Technical Specifications 3/4.6.3. ____

3.3 **Interlocks**

3.3.1. Isolation actions will not occur on any valve or pump transferred to the Remote Shutdown Panel. ____

4.0 EQUIPMENT REQUIRED

None

5.0 PROCEDURE

NOTE

All operations are performed from 10C650 and 10C651C unless otherwise noted.

5.1 Placing the Isolation System in Standby

5.1.1. **ENSURE** all prerequisites have been satisfied IAW Section 2.1 of this procedure. ____

NOTE

The following is only a guideline and Plant conditions, Mode or System Testing may cause some condition other than stated. The SM/CRS should be notified of any discrepancies not accounted for.

5.1.2. **CHECK** the following annunciators are deenergized:

A. All Isolation Signal Annunciators, unless signal is in a bypassed condition (**REFER** to Table SM-001 through SM-020). ____

B. NSSSS MSIV LOGIC A (B,C and D) INITIATED (C8-A1(2,3,4)) ____

C. NSSSS INBD ISLN SYS OUT OF SVCE (C8-A5) ____

D. NSSSS OUTBD ISLN SYS OUT OF SVCE (C8-B5) ____

E. NSSSS TRIP UNIT TROUBLE (C8-C5) ____

F. NSSSS ISLN SIG-MANUAL ISOLATION (C8-B1) ____

G. NSSSS MANUAL ISLN SW ARMED (C8-C1) ____

H. CORE SPRAY PUMP A(B,C and D) AUTO START (B3-A1(3,2,4) ____

I. CORE SPRAY LOGIC A(B,C and D) OUT OF SVCE (B3-B1(3,2,4) ____

J. CORE SPRAY MANUAL INIT SW ARMED (B3-C5) ____

K. LVL 2/DW PRESS ISLN OUT OF SVCE (B3-D5) ____

Continued on next page

5.1.2 (continued)

L. RHR LPCI LOOP A(C,B and D) INITIATED (A6-A3(4), A7-A3(4)) ____

M. RHR LOGIC A(C,B and D) OUT OF SERVICE (A6-A1(2), A7-A1(2)) ____

N. RHR MAN INIT SWITCH ARMED (A6-B5) ____

O. HPCI OUT OF SERVICE (B1-B5) ____

P. RCIC OUT OF SERVICE (B1-B2) ____

NOTE

The following is only a guideline and Plant conditions, Mode or System Testing may cause some condition other than stated. The SM/CRS should be notified of any discrepancies not accounted for.

5.1.3. **CHECK** the following Status Lights are off.

A. CNTMT ISLN MAN INITIATION CHANNEL A(B,C and D) TRIPPED ____

B. NSSSS LOGIC A(B,C and D) MSIV TRIP LOGIC TRIPPED ____

C. NSSSS TRIP UNIT IN CAL OR GROSS FAIL ____

D. NSSSS OUT OF SERVICE A and D LOGICS ____

E. CORE SPRAY LOGIC PWR FAIL ____

F. CORE SPRAY TRIP UNIT IN CAL OR GROSS FAIL ____

G. CORE SPRAY TRIP UNIT OUT OF FILE OR PWR FAIL ____

H. CORE SPRAY OUT OF SERVICE ____

I. RHR LOGIC PWR FAIL ____

J. RHR TRIP UNIT IN CAL OR GROSS FAIL ____

K. RHR TRIP UNIT OUT OF FILE OR PWR FAIL ____

L. RHR OUT OF SERVICE ____

M. HPCI LOGIC PWR FAIL ____

Continued on next page

5.1.3 (continued)

N. HPCI TRIP UNIT IN CAL OR GROSS FAIL ____

O. HPCI TRIP UNIT OUT OF FILE OR PWR FAIL ____

P. HPCI OUT OF SERVICE ____

Q. HPCI ISLN INIT ____

R. HPCI INVERTER FAIL ____

S. HPCI AREA TEMP MON LOGIC PWR FAIL ____

T. RCIC LOGIC PWR FAIL ____

U. RCIC TRIP UNIT IN CAL OR GROSS FAIL ____

V. RCIC TRIP UNIT OUT OF FILE OR PWR FAIL ____

W. RCIC OUT OF SERVICE ____

X. RCIC ISLN INIT ____

Y. RCIC INVERTER FAIL ____

Z. RCIC AREA TEMP MON LOGIC PWR FAIL ____

5.1.4. **ENSURE** CNTMT ISLN MAN INITIATION CHANNEL A,(B,C and D) SWITCHES are not ARMED. ____

5.2 Isolation Systems Manual or Automatic Initiation/Observation

NOTE

The Manual Isolation PBs listed in the Tables SM-001 through SM-020 are as follows:

NSSSS:	NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC A(B,C,D) (10C651C)
CNTMT:	CNTMT ISLN MAN INITIATION CHANNEL A(B,C,D) (10C651C)
RHR:	RHR LOOP A(B,C,D) MANUAL INIT (10C650A)
CS:	CORE SPRAY LOGIC A(B,C,D) MAN INIT (10C650B and C)
HPCI:	HPCI ISLN LOGIC A TRIP (10C650B)
RCIC:	RCIC ISLN LOGIC B TRIP (10C650B)
HD-9598A(B):	CONTROL ROOM VENTILATION CONTROL SPLY/EXH (10C650E)

CAUTION

DO NOT override any Isolation or Trip without approval of the SM/CRS.

5.2.1. Upon receipt AND validation of Isolation signal, **OBSERVE** the required actions for that particular isolation, have occurred IAW Table SM-001 through SM-020. ____

5.2.2. IF __ all operations have not occurred, **PERFORM** required operations IAW applicable SOP. ____

OBSERVE the Group 1 Valves listed in Table **SM-001** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-001

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D		E	F	G	H	I
AB-HVF022A	INBD MSIV A	#NSSSS	X	X	X	X	X				
AB-HVF022B	INBD MSIV B	#NSSSS	X	X	X	X	X				
AB-HVF022C	INBD MSIV C	#NSSSS	X	X	X	X	X				
AB-HVF022D	INBD MSIV D	#NSSSS	X	X	X	X	X				
AB-HVF028A	OUTBD MSIV A	#NSSSS	X	X	X	X	X				
AB-HVF028B	OUTBD MSIV B	#NSSSS	X	X	X	X	X				
AB-HVF028C	OUTBD MSIV C	#NSSSS	X	X	X	X	X				
AB-HVF028D	OUTBD MSIV D	#NSSSS	X	X	X	X	X				
AB-HVF016	CTMT INBD STM LINE DRAIN HDR ISLN INBOARD	A NSSSS	X	X	X	X	X				
AB-HVF019	CTMT INBD STM LINE DRAIN HDR ISLN OUTBOARD	D NSSSS	X	X	X	X	X				

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - CONDENSER VACUUM - LOW	21.5 inches Hg. Abs.
C - MAIN STEAM LINE PRESSURE - LOW	756 psig
D - MAIN STEAM LINE FLOW - HIGH	162.8 psid
E - MAIN STEAM TUNNEL TEMPERATURE - HIGH	160°F

- Correct two of four
* - Can receive a Half Isolation from D NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB.

OBSERVE the Group 2 Valves listed in Table **SM-002** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-002											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**		**E**	**F**	**G**	**H**	**I**
BB-SV4310	REAC RECIRC LOOP B SAMPLE LINE ISLN INBD VLV	A NSSSS	X	X								
BB-SV4311	REAC RECIRC LOOP B SAMPLE LINE ISLN OUTBD VLV	D NSSSS	X	X								

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - MAIN STEAM LINE RADIATION - HIGH, HIGH 3.0 X Full Power Background

NOTE

IF isolation is due to MAIN STEAM RADIATION-HIGH, HIGH signal, **OBSERVE** AIR REMOVAL MECH VAC PMP A and BP105 STOP is on.

NOTE

BC-HVF008 and BC-HVF009 will isolate on a loss of power to either the A channel or the D channel of NSSSS.

OBSERVE the Group 3 Valves listed in Table **SM-003** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-003

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D	E	F	G	H	I
BC-HVF024A	RHR LOOP A TEST RTN MOV	A RHR			X	X					
BC-HVF024B	RHR LOOP B TEST RTN MOV	B RHR			X	X					
BC-HVF010A	RHR LOOP C TEST RTN MOV	C RHR			X	X					
BC-HVF010B	RHR LOOP D TEST RTN MOV	D RHR			X	X					
BC-HVF027A	RHR LOOP A SUPP POOL SPRAY HDR ISLN MOV	A RHR			X	X					
BC-HVF027B	RHR LOOP B SUPP POOL SPRAY HDR ISLN MOV	B RHR			X	X					
BC-HVF009	SHUTDOWN COOLING INBD ISLN MOV	A NSSSS	X	X							
BC-HVF008	SHUTDOWN COOLING OUTBD ISLN MOV	D NSSSS	X	X							
BC-HVF015A	RHR LOOP A RTN TO RECIRC LOOP A ISLN MOV	D NSSSS	X	X							
BC-HVF015B	RHR LOOP B RTN TO RECIRC LOOP B ISLN MOV	D NSSSS	X	X							

ISOLATION SETPOINT	
A - REACTOR VESSEL WATER LEVEL 3	12.5"
B - REACTOR VESSEL PRESSURE (SHUTDOWN COOLING) - HIGH	82 psig
C - REACTOR VESSEL WATER LEVEL 1	-129"
D - DRYWELL PRESSURE - HIGH	1.68 psig

OBSERVE the Group 4 Valves listed in Table **SM-004** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-004											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
BE-HVF015A	LOOP A TEST RETURN VALVE	A CS	X	X							
BE-HVF015B	LOOP B TEST RETURN VALVE	B CS	X	X							

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
B - DRYWELL PRESSURE - HIGH 1.68 psig

OBSERVE the Group 5 Valves listed in Table **SM-005** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-005

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D		E	F	G	H	I
FD-HVF002	INBD HPCI STM ISLN MOV	-	X	X	X	X	X	X	X			
FD-HVF100	HPCI W/U VLV	-	X	X	X	X	X	X	X			
FD-HVF003	OUTBD HPCI STM ISLN MOV	*HPCI	X	X	X	X	X	X	X			
BJ-HVF042	HPCI PMP SUCT FROM SUPP CHB	*HPCI	X	X	X	X	X	X	X			
FD-HVF075	HPCI VAC BRKR ISLN #	-			X						X	
FD-HVF079	HPCI VAC BRKR ISLN #	-			X						X	

ISOLATION SETPOINT	_____
A - HPCI STEAM LINE DIFFERENTIAL PRESSURE (FLOW) - HIGH	1032 inches H_2O (3 to 13 second time delay)
B - HPCI STEAM SUPPLY PRESSURE - LOW	100 psig
C - HPCI TURBINE EXH DIAPHRAGM PRESS HIGH	10 psig
D - HPCI PUMP ROOM TEMPERATURE - HIGH	160°F
E - HPCI PUMP ROOM VENTILATION DUCTS DIFFERENTIAL TEMPERATURE - HIGH	70°F
F - HPCI PIPE ROUTING AREA TEMPERATURE - HIGH	160°F (15 minute time delay)
G - HPCI TORUS COMPARTMENT TEMPERATURE - HIGH	128°F (15 minute time delay)
H - DRYWELL PRESSURE – HIGH	1.68 psig

* - Only if Initiation signal is sealed in.
\# Both isolation signals required for an isolation to occur.

OBSERVE the Group 6 Valves listed in Table **SM-006** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-006

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D		E	F	G	H	I
FC-HVF007	RCIC STM INBD ISLN MOV	-	X	X	X	X	X	X	X			
FC-HVF076	RCIC WARMUP VLV	-	X	X	X	X	X	X	X			
FC-HVF008	RCIC STM OUTBD ISLN MOV	*RCIC	X	X	X	X	X	X	X			
FC-HVF062	RCIC VAC BRKR ISLN VLV #	-		X							X	
FC-HVF084	RCIC VAC BRKR ISLN VLV #	-		X							X	

ISOLATION SETPOINT	_____
A - RCIC STEAM LINE DIFFERENTIAL PRESSURE (FLOW) - HIGH	598 inches H_2O (3 to 13 second time delay)
B - RCIC STEAM SUPPLY PRESSURE - LOW	64.5 psig (4 second time delay)
C - RCIC TURBINE EXHAUST DIAPHRAGM PRESSURE - HIGH	10 psig
D - RCIC PUMP ROOM TEMPERATURE - HIGH	160°F
E - RCIC PUMP ROOM VENTILATION DUCTS DIFFERENTIAL TEMPERATURE - HIGH	70°F
F - RCIC PIPE ROUTING AREA TEMPERATURE - HIGH	160°F (30 minute time delay)
G - RCIC TORUS COMPARTMENT TEMPERATURE - HIGH	128°F (30 minute time delay)
H - DRYWELL PRESSURE - HIGH	1.68 psig

* - Only if Initiation signal is sealed in.
# Both isolation signals required for an isolation to occur.

OBSERVE the Group 7 Valves listed in Table **SM-007** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-007

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D		E	F	G	H	I
BG-HVF001	RWCU PMP SUCT CONT INBD ISOLATION VALVE	A NSSSS	X	X	X	X	X	X	X			
BG-HVF004	RWCU PMP SUCT CONT OUTBD ISOLATION VALVE	D NSSSS	X	X	X	X	X	X	X			

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2	-38"
B - RWCU DIFFERENTIAL FLOW - HIGH	≥ 56 gpm (45 sec time delay)
C - RWCU AREA TEMPERATURE - HIGH (PIPE CHASE, ROOM 4402)	160°F
D - RWCU AREA TEMPERATURE - HIGH (PUMP ROOM & HEAT EXCHANGER ROOMS)	140°F
E - RWCU AREA TEMPERATURE - HIGH (PIPE CHASE, ROOM 4505)	135°F
F - RWCU AREA VENTILATION DIFFERENTIAL TEMPERATURE - HIGH	60°F
G - STANDBY LIQUID CONTROL SYSTEM INITIATED	N/A

OBSERVE the Group 8 Valves listed in Table **SM-008** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-008											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
EE-HV4680	TORUS WATER CLEANUP SUPP POOL SPLY INBD ISLN	*A CNTMT	X	X	X						
EE-HV4681	TORUS WATER CLEANUP SUPP POOL SPLY OUTBD ISLN	*B CNTMT	X	X	X						
EE-HV4652	TORUS WATER CLEANUP SUPP POOL RTN INBD ISLN	*A CNTMT	X	X	X						
EE-HV4679	TORUS WATER CLEANUP SUPP POOL RTN OUTBD ISLN	*B CNTMT	X	X	X						

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation

OBSERVE the Group 9 Valves listed in Table **SM-009** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-009											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
"HB-HVF003	DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV	*D CNTMT	X	X	X						
"HB-HVF004	DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV	*B CNTMT	X	X	X						
"HB-HVF019	DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV	*C CNTMT	X	X	X						
"HB-HVF020	DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV	*B CNTMT	X	X	X						

ISOLATION SETPOINT	_____
A - REACTOR VESSEL WATER LEVEL 2	-38"
B - DRYWELL PRESSURE - HIGH	1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 10 Valves listed in Table **SM-010** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-010											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**		**E**	**F**	**G**	**H**	**I**
GB-HV9531B1	CONTAINMENT CLG ISLN LOOP A INBD SPLY	C CS	X	X								
GB-HV9531B3	CONTAINMENT CLG ISLN LOOP B INBD SPLY	C CS	X	X								
GB-HV9531A1	CONTAINMENT CLG ISLN LOOP A OUTBD SPLY	D CS	X	X								
GB-HV9531A3	CONTAINMENT CLG ISLN LOOP B OUTBD SPLY	D CS	X	X								
GB-HV9531B2	CONTAINMENT CLG ISLN LOOP A INBD RTN	C CS	X	X								
GB-HV9531B4	CONTAINMENT CLG ISLN LOOP B INBD RTN	C CS	X	X								
GB-HV9531A2	CONTAINMENT CLG ISLN LOOP A OUTBD RTN	D CS	X	X								
GB-HV9531A4	CONTAINMENT CLG ISLN LOOP B OUTBD RTN	D CS	X	X								

ISOLATION SETPOINT	_____
A - REACTOR VESSEL WATER LEVEL 1	-129"
B - DRYWELL PRESSURE - HIGH	1.68 psig

OBSERVE the Group 11 Valves listed in Table **SM-011** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-011											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**		**E**	**F**	**G**	**H**	**I**
BF-HV3800A	REACTOR RECIRCULATION SEAL PURGE WTR VALVE PMP A	D CS	X	X								
BF-HV3800B	REACTOR RECIRCULATION SEAL PURGE WTR VALVE PMP B	D CS	X	X								

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
B - DRYWELL PRESSURE - HIGH 1.68 psig

OBSERVE the Group 12 Valves listed in Table **SM-012** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-012											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
"GS-HV4956	CONT ATMOSPHERE CPCS RTN TO CNTMT DPMR	*A CNTMT	X	X	X						
"GS-HV4979	CONT ATMOSPHERE CPCS RTN TO CNTMT DMPR	*D CNTMT	X	X	X						
"GS-HV4951	CONT ATMOSPHERE CNTMT TO CPCS BYPASS	*D CNTMT	X	X	X						
"GS-HV4950	CONT ATMOS CNTMT TO CPCS OUTBD DPMR	*D CNTMT	X	X	X						
"GS-HV4952	CONT ATMOS CNTMT TO CPCS INBD DMPR	*A CNTMT	X	X	X						
"GS-HV4980	CONT ATMOS CPCS RTN TO SUPP CHMBR	*D CNTMT	X	X	X						
"GS-HV4958	CONT ATMOSPHERE CPCS RTN TO SUPP CHMBR	*A CNTMT	X	X	X						
"GS-HV4963	CONT ATMOSPHERE SUPP CHMBR N_2 M/U EXH	*D CNTMT	X	X	X						
"GS-HV4962	CONT ATMOS SUPP CHMBR TO CPCS OUTBD EXH	*D CNTMT	X	X	X						
"GS-HV4964	CONT ATMOSPHERE SUPP CHMBR TO CPCS INBD EXH	*A CNTMT	X	X	X						
"GS-HV4974	CONT ATMOSPHERE N_2 M/U SPLY ISLN	*D CNTMT	X	X	X						
"GS-HV4978	CONT ATMOSPHERE N_2 SPLY HDR ISLN	*D CNTMT	X	X	X						

<u>ISOLATION</u> SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 13 Valves listed in Table **SM-013** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-013 (1 of 2)

VALVE NO.	NOMENCLATURE	MANUAL ISOLATION	AUTO ISOLATIONS								
			A	B	C	D	E	F	G	H	I
"GS-HV4955A	CONT ATMOS A H_2/O_2 ANLZR UPR DRYWL SUCT	*A CNTMT	X	X	X						
"GS-HV4983A	CONT ATMOS A H_2/O_2 ANLZR UPR DRYWL SUCT	*C CNTMT	X	X	X						
"GS-HV4984A	CONT ATMOS A H_2/O_2 ANLZR UPR DRYWL SUCT	*C CNTMT	X	X	X						
"GS-HV5019A	CONT ATMOS A H_2/O_2 ANLZR UPR DRYWL SUCT	*A CNTMT	X	X	X						
"GS-HV4955B	CONT ATMOS B H_2/O_2 ANLZR UPR DRYWL SUCT	*B CNTMT	X	X	X						
"GS-HV4983B	CONT ATMOS B H_2/O_2 ANLZR UPR DRYWL SUCT	*D CNTMT	X	X	X						
"GS-HV4984B	CONT ATMOS B H_2/O_2 ANLZR UPR DRYWL SUCT	*D CNTMT	X	X	X						
"GS-HV5019B	CONT ATMOS B H_2/O_2 ANLZR UPR DRYWL SUCT	*B CNTMT	X	X	X						
"GS-HV4965A	CONT ATMOS A H_2/O_2 ANLZR UPR SUPP CHMBR SUCT	*C CNTMT	X	X	X						
"GS-HV4959A	CONT ATMOS A H_2/O_2 ANLZR UPR SUPP CHMBR SUCT	*A CNTMT	X	X	X						
"GS-HV4965B	CONT ATMOS B H_2/O_2 ANLZR UPR SUPP CHMBR SUCT	*D CNTMT	X	X	X						
"GS-HV4959B	CONT ATMOS B H_2/O_2 ANLZR UPR SUPP CHMBR SUCT	*B CNTMT	X	X	X						

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2	-38"
B - DRYWELL PRESSURE - HIGH	1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH	1 X 10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 13 Valves listed in Table **SM-013** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-013 (2 of 2)											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
"GS-HV4966A	CONT ATMOS A H_2/O_2 ANLZR LWR SUPP CHMBR SUCT	*A CNTMT	X	X	X						
"GS-HV5022A	CONT ATMOS A H_2/O_2 ANLZR LWR SUPP CHMBR SUCT	*C CNTMT	X	X	X						
"GS-HV4966B	CONT ATMOS B H_2/O_2 ANLZR LWR SUPP CHMBR SUCT	*B CNTMT	X	X	X						
"GS-HV5022B	CONT ATMOS B H_2/O_2 ANLZR LWR SUPP CHMBR SUCT	*D CNTMT	X	X	X						

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 14 Valves listed in Table **SM-014** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-014											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
"GS-HV5050A	CONT ATMOS CNTMT H_2 RECOMB AS205 INL	*A CNTMT	X	X	X						
"GS-HV5052A	CONT ATMOS CNTMT H_2 RECOMB AS205 INL	*C CNTMT	X	X	X						
"GS-HV5050B	CONT ATMOS CNTMT H_2 RECOMB BS205 INL	*B CNTMT	X	X	X						
"GS-HV5052B	CONT ATMOS CNTMT H_2 RECOMB BS205 INL	*D CNTMT	X	X	X						
"GS-HV5053A	CONT ATMOS CNTMT H_2 RECOMB AS205 OTL	*C CNTMT	X	X	X						
"GS-HV5054A	CONT ATMOS CNTMT H_2 RECOMB AS205 OTL	*A CNTMT	X	X	X						
"GS-HV5053B	CONT ATMOS CNTMT H_2 RECOMB BS205 OTL	*D CNTMT	X	X	X						
"GS-HV5054B	CONT ATMOS CNTMT H_2 RECOMB BS205 OTL	*B CNTMT	X	X	X						

ISOLATION SETPOINT	_____
A - REACTOR VESSEL WATER LEVEL 2	-38"
B - DRYWELL PRESSURE - HIGH	1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 15 Valves listed in Table **SM-015** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-015											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
"KL-HV5152A	INSTRUMENT GAS SUPPLY HDR A INBD ISLN	+A CNTMT	X		X	X					
"KL-HV5152B	INSTRUMENT GAS SUPPLY HDR B INBD ISLN	+D CNTMT	X		X	X					
"KL-HV5126A	INSTRUMENT GAS SUPPLY HDR A OUTBD ISLN	+C CNTMT	X		X	X					
"KL-HV5126B	INSTRUMENT GAS SUPPLY HDR B OUTBD ISLN	+B CNTMT	X		X	X					
KL-HV5148	INSTRUMENT GAS CPRSR SUCT INBD ISLN	+A CNTMT	X		X	X					
KL-HV5147	INSTRUMENT GAS AK202 CPRSR SUCT OUTBD ISLN	+C CNTMT	X		X	X					
KL-HV5162	INSTRUMENT GAS BK202 CPRSR SUCT OUTBD ISLN	+D CNTMT	X		X	X					
KL-HV5154	INSTRUMENT GAS SUPP CH B OUTBD ISLN	*D CNTMT		X	X	X					
KL-HV5155	INSTRUMENT GAS SUPP CH B OUTBD ISLN	*A CNTMT		X	X	X					

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - REACTOR VESSEL WATER LEVEL 2	-38"
C - DRYWELL PRESSURE - HIGH	1.68 psig
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

+ - Also Isolates from the corresponding Core Spray Manual Initiation PB.
* - Can receive a Half Isolation Signal from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Group 16 Valves listed in Table **SM-016** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-016											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**		**E**	**F**	**G**	**H**	**I**
ED-HV2554	RACS REAC RECIRC PUMP COOLING ISLN INBOARD SPLY	D CS	X	X								
ED-HV2553	RACS REAC RECIRC PUMP COOLING ISLN OUTBOARD SPLY	B CS	X	X								
ED-HV2556	RACS REAC RECIRC PUMP COOLING ISLN INBOARD RTN	D CS	X	X								
ED-HV2555	RACS REAC RECIRC PUMP COOLING ISLN OUTBOARD RTN	B CS	X	X								

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
B - DRYWELL PRESSURE - HIGH 1.68 psig

OBSERVE the Group 17 Valves listed in Table **SM-017** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-017											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**		**E**	**F**	**G**	**H**	**I**
SE-SVJ004A1	TIP TUBE PATH ISLN	A NSSSS	X	X								
SE-SVJ004A2	TIP TUBE PATH ISLN	A NSSSS	X	X								
SE-SVJ004A3	TIP TUBE PATH ISLN	A NSSSS	X	X								
SE-SVJ004A4	TIP TUBE PATH ISLN	A NSSSS	X	X								
SE-SVJ004A5	TIP TUBE PATH ISLN	A NSSSS	X	X								
SE-HV5161	INSTRUMENT GAS TIP PURGE	*D CNTMT	X	X	X							

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

* - Can receive a Half Isol Signal from the D NSSSS Manual Isol.

OBSERVE the Group 18 Valves listed in Table **SM-018** have closed under the Manual or Automatic Isolation Signals specified.

TABLE SM-018											
VALVE NO.	**NOMENCLATURE**	**MANUAL ISOLATION**	**AUTO ISOLATIONS**								
			A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
SK-HV5018	CONTAINMENT ATMOSPHERE LEAK DET	*A CNTMT	X	X	X						
SK-HV4953	CONTAINMENT ATMOSPHERE LEAK DET	*D CNTMT	X	X	X						
SK-HV4957	CONTAINMENT ATMOSPHERE LEAK DET	*A CNTMT	X	X	X						
SK-HV4981	CONTAINMENT ATMOSPHERE LEAK DET	*D CNTMT	X	X	X						

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

* - Can receive a Half Isolation Signal from the corresponding NSSSS Manual Isolation

OBSERVE the Group 19 Dampers listed in Table **SM-019** have closed under the Manual or Automatic Isolation Signals and other Actions have occurred for Equipment listed as specified.

TABLE SM-019 (1 of 3)

EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
#GR-HD9414A	REACTOR BLDG SPLY/EXH ISLN INBD EXH	CLOSE	*C CNTMT	X X	X X		
#GR-HD9414B	REACTOR BLDG SPLY/EXH ISLN OUTBD EXH	CLOSE	*D CNTMT	X X	X X		
#GU-HD9370A	REACTOR BLDG SPLY/EXH ISLN OUTBD SPLY	CLOSE	*C CNTMT	X X	X X		
#GU-HD9370B	REACTOR BLDG SPLY/EXH ISLN INBD SPLY	CLOSE	*D CNTMT	X X	X X		
GT-HD9372A	DRYWELL PURGE EXH DRYWELL VENT	CLOSE	*A CNTMT	X X	X X		
GT-HD9372C	DRYWELL PURGE SPLY	CLOSE	*A CNTMT	X	X	X	X
GU-HD9395A	FRVS RECIRC BYPASS	CLOSE	*A CNTMT	X	X	X	X
GU-HD9395B	FRVS RECIRC BYPASS	CLOSE	*B CNTMT	X	X	X	X
52-44024	RBVS SUPPLY FAN AVH300	TRIP	*D CNTMT	X	X	X	X
52-41024	RBVS SUPPLY FAN BVH300	TRIP	*A CNTMT	X	X	X	X
52-43024	RBVS SUPPLY FAN CVH300	TRIP	*C CNTMT	X	X	X	X
52-48024	RBVS EXHAUST FAN AV301	TRIP	*D CNTMT	X	X	X	X
52-42024	RBVS EXHAUST FAN BV301	TRIP	*B CNTMT	X	X	X	X
52-45034	RBVS EXHAUST FAN CV301	TRIP	*A CNTMT	X X	X X		

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2	-38"
B - DRYWELL PRESSURE - HIGH	1.68 psig
C - REFUEL FLOOR EXHAUST RADIATION - HIGH	2×10^{-3} uCi/cc
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

- Group 19 Dampers
* - Can receive a Half Isolation Signal from the corresponding NSSSS Manual Isolation

OBSERVE the Group 19 Dampers listed in Table **SM-019** have closed under the Manual or Automatic Isolation Signals and other Actions have occurred for Equipment listed as specified.

TABLE SM-019 (2 of 3)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
52-45014	RADIOACTIVE WASTE EXHAUST FAN 0AV305	TRIP	*A CNTMT	X X	X X		
52-46014	RADIOACTIVE WASTE EXHAUST FAN 0BV305	TRIP	*B CNTMT	X X	X X		
52-47014	RADIOACTIVE WASTE EXHAUST FAN 0CV305	TRIP	*C CNTMT	X X	X X		
52-47024	RADIOACTIVE WASTE SUPPLY FAN AV316	TRIP	*C CNTMT	X X	X X		
52-44034	RADIOACTIVE WASTE SUPPLY FAN BV316	TRIP	*D CNTMT	X X	X X		
52-45024	SEAL AIR COMPRESSOR 10K100	TRIP	*A CNTMT	X X	X X		

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2 -38"
B - DRYWELL PRESSURE - HIGH 1.68 psig
C - REFUEL FLOOR EXHAUST RADIATION - HIGH 2×10^{-3} uCi/cc
D - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

- Group 19 Dampers
* - Can receive a Half Isolation Signal from the corresponding NSSSS Manual Isolation

OBSERVE the Group 19 Dampers listed in Table **SM-019** have closed under the Manual or Automatic Isolation Signals and other Actions have occurred for Equipment listed as specified.

TABLE SM-019 (3 of 3)

EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
GU-AV206	FRVS VENT FAN A	START	*A CNTMT	X	X	X	X
GU-BV206	FRVS VENT FAN B	START	*B CNTMT	X	X	X	X
GU-AV213	FRVS RECIRCULATION FAN A	**START	*A CNTMT	X X	X X		
GU-BV213	FRVS RECIRCULATION FAN B	**START	*B CNTMT	X X	X X		
GU-CV213	FRVS RECIRCULATION FAN C	**START	*C CNTMT	X X	X X		
GU-DV213	FRVS RECIRCULATION FAN D	**START	*D CNTMT	X X	X X		
GU-EV213	FRVS RECIRCULATION FAN E	**START	*A CNTMT	X X	X X		
GU-FV213	FRVS RECIRCULATION FAN F	**START	*B CNTMT	X X	X X		
EA-AP502	STATION SERVICE WATER PUMP A	START	*A CNTMT	X X	X X		
EA-BP502	STATION SERVICE WATER PUMP B	START	*B CNTMT	X X	X X		
EA-CP502	STATION SERVICE WATER PUMP C	START	*C CNTMT	X X	X X		
EA-DP502	STATION SERVICE WATER PUMP D	START	*D CNTMT	X X	X X		
EG-AP210	SAFETY AUXILIARIES COOLING PUMP A	START	*A CNTMT	X X	X X		
EG-BP210	SAFETY AUXILIARIES COOLING PUMP B	START	*B CNTMT	X X	X X		

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 2	-38"
B - DRYWELL PRESSURE - HIGH	1.68 psig
C - REFUEL FLOOR EXHAUST RADIATION - HIGH	2×10^{-3} uCi/cc
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

* - Can receive a Half Isolation Signal from the corresponding NSSSS Manual Isolation
** - Time delay on Start Signal

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (1 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
"52-232094	INSTRUMENT GAS CPRSR AK202	TRIP	+C CNTMT X			X X	
"52-242094	INSTRUMENT GAS CPRSR BK202	TRIP	+D CNTMT X			X X	
"52-41011	RACS PMP AP209 BRKR	TRIP	A CS	X		X	
"52-42011	RACS PMP BP209 BRKR	TRIP	B CS	X		X	
"52-43014	CRD PMP AP207 BRKR	TRIP	C CS	X		X	
"52-44014	CRD PMP BP207 BRKR	TRIP	D CS	X		X	
"52-41014	MCC 10B313 BRKR	TRIP	A CS	X		X	
"52-42014	MCC 10B323 BRKR	TRIP	B CS	X		X	
"52-47011	MCC 10B272 BRKR	TRIP	C CS	X		X	
"52-48011	MCC 10B282 BRKR	TRIP	D CS	X		X	
"52-45011	MCC 10B252 BRKR	TRIP	A CS	X		X	
"52-46011	MCC 10B262 BRKR	TRIP	B CS	X		X	
"52-47031	MCC 00B474 BRKR	TRIP	C CS	X		X	
52-451023	INVERTER 10D496 B/U PWR (PA SYST)	TRIP	A CS	X		X	

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
C - DRYWELL PRESSURE - HIGH 1.68 psig
D - REACTOR BUILDING EXHAUST RADIATION - HIGH 1×10^{-3} uCi/cc

+ - Also Isolates from the corresponding Core Spray Manual Initiation PB
* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by TRIP OVRD PB

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (2 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
52-471023	INVERTER 0AD495 B/U PWR (SECURITY)	TRIP	C CS	X		X	
52-441043	INVERTER 10D485 B/U PWR (PROCESS COMPUTER)	TRIP	D CS	X		X	
EA-HV2371A	SACS LOOP A COOLING SACS EXCH A1 OUT	OPEN	A CS	X		X	
EA-HV2371B	SACS LOOP B COOLING SACS EXCH B1 OUT	OPEN	B CS	X		X	
EA-HV2355A	SACS LOOP A COOLING SACS EXCH A2 OUT	OPEN	C CS	X		X	
EA-HV2355B	SACS LOOP B COOLING SACS EXCH B2 OUT	OPEN	D CS	X		X	

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - REACTOR VESSEL WATER LEVEL 2	-38"
C - DRYWELL PRESSURE - HIGH	1.68 psig
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc
E - REACTOR VESSEL WATER LEVEL 3	12.5"
F - CONTROL ROOM SUPPLY RADIATION - HIGH	2×10^{-5} u/Ci/cc

+ - Also Isolates from the corresponding Core Spray Manual Initiation PB
* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by TRIP OVRD PB

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (3 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
EA-HV2198A	SERVICE WATER A PUMP DISCHARGE	OPEN	A CS	X		X	
EA-HV2198B	SERVICE WATER B PUMP DISCHARGE	OPEN	B CS	X		X	
EA-HV2198C	SERVICE WATER C PUMP DISCHARGE	OPEN	C CS	X		X	
EA-HV2198D	SERVICE WATER D PUMP DISCHARGE	OPEN	D CS	X		X	
EA-HV2203	SERVICE WATER LOOP A RACS HX HDR SPLY	CLOSE	A CS	X		X	
EA-HV2204	SERVICE WATER LOOP B RACS HX HDR SPLY	CLOSE	B CS	X		X	
EA-HV2207	RACS HX COOLING INLET VALVE	CLOSE	C CS	X		X	
EA-HV2346	RACS HX COOLING OUTLET VALVE	CLOSE	C CS	X		X	
EG-HV2522A	SACS TACS INBD SPLY/RTN LOOP A SPLY	CLOSE	A CS	X		X	
EG-HV2522B	SACS TACS INBD SPLY/RTN LOOP B SPLY	CLOSE	B CS	X		X	
EG-HV2522C	SACS TACS OUTBD SPLY/RTN LOOP A SPLY	CLOSE	C CS	X		X	
EG-HV2522D	SACS TACS OUTBD SPLY/RTN LOOP B SPLY	CLOSE	D CS	X		X	
EG-HV2496A	SACS TACS INBD SPLY/RTN LOOP A RTN	CLOSE	A CS	X		X	
EG-HV2496B	SACS TACS INBD SPLY/RTN LOOP B RTN	CLOSE	B CS	X		X	

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - REACTOR VESSEL WATER LEVEL 2	-38"
C - DRYWELL PRESSURE - HIGH	1.68 psig

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (4 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
EG-HV2496C	SACS TACS OUTBD SPLY/RTN LOOP A RTN	CLOSE	C CS	X		X	
EG-HV2496D	SACS TACS OUTBD SPLY/RTN LOOP B RTN	CLOSE	D CS	X		X	
EG-HV2317A	FUEL POOLING COOLING HX INL CROSS CONN	CLOSE	A CS	X		X	
EG-HV2317B	FUEL POOLING COOLING HX INL CROSS CONN	CLOSE	B CS	X		X	
EG-HV7922A	FUEL POOLING COOLING HX OTL CROSS CONN	CLOSE	A CS	X		X	
EG-HV7922B	FUEL POOLING COOLING HX OTL CROSS CONN	CLOSE	B CS	X		X	

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
C - DRYWELL PRESSURE - HIGH 1.68 psig

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (5 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A B	C D		
EG-HV2453A	INSTRUMENT GAS COMPRESSOR CLNG WTR A SPLY CROSS CONN	CLOSE	C CS	X		X	
EG-HV2453B	INSTRUMENT GAS COMPRESSOR CLNG WTR B SPLY CROSS CONN	CLOSE	D CS	X		X	
EG-HV2321A	INSTRUMENT GAS COMP COOLING WTR A RTN CROSS CONN	CLOSE	C CS	X		X	
EG-HV2321B	INSTRUMENT GAS COMP COOLING WTR B RTN CROSS CONN	CLOSE	D CS	X		X	
ED-HV2598	REAC AUXILIARIES COOLING REAC BLDG ISLN RTN	CLOSE	A CS	X		X	
ED-HV2599	REAC AUXILIARIES COOLING REAC BLDG ISLN SPLY	CLOSE	A CS	X		X	
"GS-HV5035	CONT ATMOSPHERE CACS N_2 SUP HDR ISLN	CLOSE	*D CNTMT		X X	X	
"GS-HV5055A	CONT ATMOSPHERE RHR LP A TO H_2 RECOMB	CLOSE	*A CNTMT		X X	X	
"GS-HV5055B	CONT ATMOSPHERE RHR LP B TO H_2 RECOMB	CLOSE	*B CNTMT		X X	X	
"GS-HV5057A	CONT ATMOSPHERE H_2 RECOMB A RHR INL ISLN	CLOSE	*C CNTMT		X X	X	

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - REACTOR VESSEL WATER LEVEL 2	-38"
C - DRYWELL PRESSURE - HIGH	1.68 psig
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

+ - Also Isolates from the corresponding Core Spray Manual Initiation PB
* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (6 of 8)							
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS			
				A	B	C	D
"GS-HV5057B	CONT ATMOSPHERE H_2 RECOMB B RHR INL ISLN	CLOSE	*D CNTMT			X X	X
"KL-HV5172A	CONT ATMOSPHERE A INSTR GAS EMER SUP	CLOSE	*A CNTMT			X X	X
"KL-HV5172B	CONT ATMOSPHERE B INSTR GAS EMER SUP	CLOSE	*B CNTMT			X X	X
"KL-HV5156A	INSTRUMENT GAS SPLY HDRS A&B CROSS CONN	CLOSE	*C CNTMT			X X	X
"KL-HV5156B	INSTRUMENT GAS SPLY HDRS A&B CROSS CONN	CLOSE	*D CNTMT			X X	X
KL-HV5124A	INSTRUMENT GAS CNTMT SPLY HDR A ISLN	CLOSE	+C CNTMT X				X X
KL-HV5124B	INSTRUMENT GAS CNTMT SPLY HDR B ISLN	CLOSE	+D CNTMT X				X X

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1	-129"
B - REACTOR VESSEL WATER LEVEL 2	-38"
C - DRYWELL PRESSURE - HIGH	1.68 psig
D - REACTOR BUILDING EXHAUST RADIATION - HIGH	1×10^{-3} uCi/cc

+ - Also Isolates from the corresponding Core Spray Manual Initiation PB
* - Can receive a Half Isolation from the corresponding NSSSS Manual Isolation
" - Isolation can be bypassed by ISLN OVRD PB

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (7 of 8)									
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS					
				A	B	C	D	E	F
BC-HVF040	RHR LOOP B DSCH TO LIQ RW ISLN MOV	CLOSE	D NSSSS		X		X		
BC-HVF049	RHR LOOP B DSCH TO LIQ RW ISLN MOV	CLOSE	A NSSSS		X		X		
BC-HVF079A	RHR// HX A SAMPLE LINE INBD ISLN	CLOSE	A NSSSS		X		X		
BC-HVF080A	RHR HX A SAMPLE LINE OUTBD ISLN	CLOSE	D NSSSS		X		X		
BC-HVF079B	RHR HX B SAMPLE LINE INBD ISLN	CLOSE	A NSSSS		X		X		
BC-HVF080B	RHR HX B SAMPLE LINE OUTBD ISLN	CLOSE	D NSSSS		X		X		
GK-HD9598A	CONTROL AREA EXH FANS INL ISLN DMPR	CLOSE	@HD-9598A	X		X			X
GK-HD9598B	CONTROL AREA EXH FANS INL ISLN DMPR	CLOSE	@HD-9598B	X		X			X
GK-HD9588AA	CONTROL AREA SPLY/EXH OPR MODE	CLOSE	@HD-9598A	X		X			X
GK-HD9588AB	CONTROL AREA SPLY/EXH OPR MODE	CLOSE	@HD-9598B	X		X			X
GK-HD9588BA	CONTROL AREA SPLY/EXH OPR MODE	CLOSE	@HD-9598A	X		X			X
GK-HD9588BB	CONTROL AREA SPLY/EXH OPR MODE	CLOSE	@HD-9598B	X		X			X

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
C - DRYWELL PRESSURE - HIGH 1.68 psig
E - REACTOR VESSEL WATER LEVEL 3 12.5"
F - CONTROL ROOM SUPPLY RADIATION - HIGH 2×10^{-5} u/Ci/cc

@ - Also Isolates from the Core Spray Manual Initiation PB (Logic C for handswitch HD-9598A and Logic D for handswitch HD-9598B)

OBSERVE the Equipment or Valves listed in Table **SM-020** have met their required Action under the Manual or Automatic Isolation Signals

TABLE SM-020 (8 of 8)									
EQUIPMENT NUMBER	NOMENCLATURE	ACTION	MANUAL ISOLATION	AUTO ISOLATIONS					
				A	B	C	D	E	F
GK-AV400	CONTROL RM EMER FILTER UNIT	START	@HD-9598A	X		X			X
GK-BV400	CONTROL RM EMER FILTER UNIT	START	@HD-9598B	X		X			X
GK-AV402	CONTROL AREA EXH FAN A	STOP	@HD-9598A	X		X			X
GK-BV402	CONTROL AREA EXH FAN B	STOP	@HD-9598A	X		X			X

ISOLATION SETPOINT _____

A - REACTOR VESSEL WATER LEVEL 1 -129"
C - DRYWELL PRESSURE - HIGH 1.68 psig
F - CONTROL ROOM SUPPLY RADIATION - HIGH 2×10^{-5} u/Ci/cc

@ - Also Isolates from the Core Spray Manual Initiation PB (Logic C for handswitch HD-9598A and Logic D for handswitch HD-9598B)

5.3 **Resetting the Isolation Systems**

5.3.1. **ENSURE** that all prerequisites have been satisfied IAW Section 2.3 of this procedure. ____

5.3.2. To reset the Nuclear Steam Supply Shutoff System, **PERFORM** the following:

A. IF __ MSIVs have closed on a Group 1 isolation, THEN **ENSURE** the following MSIV control switches are in CLOSE:

- HVF028A OUTBD MSIV A ____
- HVF028B OUTBD MSIV B ____
- HVF028C OUTBD MSIV C ____
- HVF028D OUTBD MSIV D ____
- HVF022A INBD MSIV A ____
- HVF022B INBD MSIV B ____
- HVF022C INBD MSIV C ____
- HVF022D INBD MSIV D ____

B. **ENSURE** conditions causing the Isolation have been corrected. ____

C. IF __ vacuum is > 21.5 inches Hg. Abs., THEN **PLACE** DIVISION 1 and 2 and 3 and 4 CONDENSER LOW VACUUM BYPASS Switches to BYP (Control Room Panels 10C609 and 10C611). ____

(continued on next page)

5.3.2 (continued)

D. **PRESS** the following PBs:

1. NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC A RESET. MSIV TRIP LOGIC TRIPPED goes off. ____

2. NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC B RESET. MSIV TRIP LOGIC TRIPPED goes off. ____

3. NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC C RESET. MSIV TRIP LOGIC TRIPPED goes off. ____

4. NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC D RESET. MSIV TRIP LOGIC TRIPPED goes off. ____

5.3.3. To reset the Containment Isolation System, **PERFORM** the following:

A. **ENSURE** conditions causing the Isolation have been corrected,
AND NS4 has been reset. ____

B. **PRESS** the following PBs:

1. CNTMT ISLN MAN INITIATION CHANNEL A RESET. TRIPPED goes off. ____

2. CNTMT ISLN MAN INITIATION CHANNEL B RESET. TRIPPED goes off. ____

3. CNTMT ISLN MAN INITIATION CHANNEL C RESET. TRIPPED goes off. ____

4. CNTMT ISLN MAN INITIATION CHANNEL D RESET. TRIPPED goes off. ____

5.3.4. To reset the Core Spray Isolation Signals, **PERFORM** the following:

A. **ENSURE** conditions causing Core Spray Initiation have been corrected. ____

B. **PRESS** the following PBs:

1. LOOP A INITIATION RESET. A INIT AND SEALED IN goes off. ____

2. LOOP B INITIATION RESET. B INIT AND SEALED IN goes off. ____

3. LOOP C INITIATION RESET. C INIT AND SEALED IN goes off. ____

4. LOOP D INITIATION RESET. D INIT AND SEALED IN goes off. ____

5.3.5. To reset the RHR Isolation signals, **PERFORM** the following:

A. **ENSURE** conditions causing LPCI Initiation have been corrected. ____

B. **PRESS** the following PBs:

1. LOOP A INITIATION RESET. A INIT AND SEALED IN goes off. ____

2. LOOP B INITIATION RESET. B INIT AND SEALED IN goes off. ____

3. LOOP C INITIATION RESET. C INIT AND SEALED IN goes off. ____

4. LOOP D INITIATION RESET. D INIT AND SEALED IN goes off. ____

NOTE

Re-opening of containment isolation valves normally requires deliberate operator action on a valve by valve basis. Re-setting the following isolation signal will result in the automatic re-opening of containment isolation valve BJ-HV-F042 PMP SUCT FROM SUPP CHB IF a CST low level 103' – 10" (approx. 68,000 gal) OR Suppression Chamber high level (78.5 inches) (K42) exist AND BJ-HV-F042 handswitch is not in AUTO OPEN OVRD and no HPCI Div 1 Isolation signal (K51A) is present.

5.3.6. To reset HPCI Isolation Signals, **PERFORM** the following:

A. **ENSURE** conditions causing HPCI Isolation have been corrected. ____

B. **ENSURE** the handswitchs for FD-HV-F002 INBD HPCI STM ISLN MOV AND FD-HV-F003 OUTB HPCI STM ISLN MOV are in CLOSE. ____

C. **INSERT** key AND **TURN** to RESET, THEN **RETURN** to NORM on the following keyswitches:

1. ISOLATION LOGIC A. ISLN LOGIC A TRIPPED goes off. ____

2. ISOLATION LOGIC C. ISLN LOGIC C TRIPPED goes off. ____

5.3.7. To reset RCIC Isolation Signals, **PERFORM** the following:

A. **ENSURE** conditions causing RCIC Isolation have been corrected. ____

B. **ENSURE** the handswitchs for FC-HV-F007 RCIC STM INBD ISLN VLV AND FC-HV-F008 RCIC STM OUTBD ISLN VLV are in CLOSE. ____

C. **INSERT** key AND **TURN** to RESET AND THEN **RETURN** to NORM on the following keyswitches:

1. ISOLATION LOGIC B. ISLN LOGIC B TRIPPED goes off. ____

2. ISOLATION LOGIC D. ISLN LOGIC D TRIPPED goes off. ____

6.0 RECORDS

None

7.0 REFERENCES

7.1 Logic Diagrams:

- J-10-0 Shts. 2, 4, 6, 7, 8, 13, 14, 15, 16, 17
- J-11-0 Shts. 4, 6, 7, 8, 9, 19, 24
- J-13-0 Shts. 9, 11
- J-25-0 Sht. 2,
- J-43-0 Sht. 6
- J-53-0 Sht. 4
- J-57-0 Shts. 2, 3, 4, 5, 12, 13, 14
- J-58-0 Shts. 2, 3
- J-59-0 Shts. 2, 3, 5, 6, 9
- J-61-0 Sht. 3
- J-72-0 Shts. 2, 8, 9, 11
- H-83-0 Shts. 4, 6, 12, 14
- H-84-0 Shts. 3, 4
- H-87-0 Sht. 4
- H-89-0 Shts. 5, 7, 10, 11
- J-102-0 Shts. 1, 2, 3, 4, 5, 6, 7, 8, 9
- J-105-0 Shts. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
- J-107-0 Shts. 2, 3

7.2 Electrical Diagrams:

- E-3133 Sht. 1, Sht. 2

7.3 Panel Drawings:

- J-0650-1 Shts. 2, 3, 4, 5, 13, 14, 17, 18
- J-0651-1 Shts. 2, 6, 8, 12

7.4 Other Documents

- CR 990423133
- DCP 4EE-0436
- CR971127121
- RWCU Differential Flow setpoint
- 80007192
- DCP 4EC-3192
- GEK-90300, Volume V, Part 1.