HOPE CREEK GENERATING STATION

HC.OP -**EO.ZZ**-**0318(Q)** - **Rev. 6**

CONTAINMENT **VENTING**

USE CATEGORY: I

- 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

- This revision adds Step 3.9 and text to Note at Step 5.1.1 to inform the user that if the Backup Pneumatic Supply (nitrogen bottles) is being used for controlling GS-HV-11541 TORUS VENT ISOLATION VALVE and GS-HV-4964 SUPP CHMBR TO CPCS DMP then the expected number of valve strokes for GS-HV-4964 and GS-HV-11541 are limited. (Engineering Calculation H-1-KB-MDC-1007) (70071704-0020)
- Adds Step 3.10 to explain the operation of the over ride status light.
- Changes Step 3.3. to allow this procedure to be executed by SAG.
- Split several steps into two separate steps since they contained actions in different parts of the plant. This is an editorial change. (70095823-0010)
- Changes Steps 5.1.3.E and 5.1.3.F to ENSURE since this action should have been performed in the previous section.
- The damper number in Attachment 1, Step 4 was corrected from GT-HD-9327A to GT-HD-9372A as verified in the SAP Data Base. (70088227-0010)

IMPLEMENTATION REQUIREMENTS **Effective Date 6/24/09**

None

CONTAINMENT VENTING

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ATTACHMENTS

1.0 PURPOSE

This procedure provides the guidance to vent Primary Containment. These actions would be required during an emergency, or post emergency condition in which Drywell pressure could not be maintained below 65 psig or hydrogen and oxygen concentrations could not be maintained below combustible levels.

2.0 PREREQUISITES

2.1 HC.OP-EO.ZZ-0319, Restoring Instrument Air in an Emergency, has been completed or is being performed concurrently with this procedure to provide a continuous pneumatic supply to dampers. This is not required if dampers will be operated independent of instrument air (such as operation of the Hard Torus Vent or dampers using manual hydraulic actuators). ____

2.2 The Control Room Emergency Filtration System is operating in the Isolate/Recirculation Mode in accordance with HC.OP-SO.GK-0001(Q). ____

2.3 FRVS, if available, is in operation in accordance with HC.OP-SO.GU-0001(Q). ____

2.4 The Reactor Building has been evacuated if other than the ILRT or Hard Torus Vent, hard-piped vent paths are to be used. ____

2.5 The Emergency Duty Officer/Emergency Response Manager has been informed that containment venting will be performed. ____

2.6 Salem Operations has been notified that containment venting will be performed. ____

2.7 IF operating Hard Torus Vent valves manually (locally), communications has been established with personnel at local actuator station. ____

3.0 PRE CAUTIONS AND LIMITATIONS

3.1 This procedure constitutes extreme actions that are only to be taken in response to severely degraded plant conditions. These actions warrant evaluation of current and future plant conditions, prioritization of available plant systems and components, and consideration of the expected consequences to the plant.
The EDO must be notified upon commencing this procedure and also when opening the vent path. ____

3.2 Certain events (Station Blackout) may limit availability of electric power and pneumatic supply. Cycling of vent valves to maintain containment pressure below 65 psig should consider the continued capability to open the valve(s). ____

3.3 This procedure shall be executed only as directed by HC.OP-EO.ZZ-0102, Primary Containment Control OR Severe Accident Guideline (SAG). ____

3.4 The selection of vent paths has been presented in priority order. However, if it can be determined that a particular path is unavailable or undesirable, the section addressing that vent path may be omitted (see Attachment 4). ____

3.5 The SM/CRS shall be aware of, and take into consideration, the environmental and radiological conditions that exist in areas requiring entry prior to dispatching personnel into the field. ____

3.6 Seven Blow-Out Panels are installed in the CPCS ductwork to protect the FRVS ductwork from excessive pressurization if a LOCA occurs while the Drywell or Suppression Chamber purge valves are open.
Blow-Out Panels are located on the supply ductwork upstream of valves GS-HV-4979 and GS-HV-4980 and on the return ductwork downstream of valves GS-HV-4951, GS-HV-4950, GS-HV-4963, and GS-HV-4962. ____

These Blow-Out panels are set at 1.0 ± 0.25 psid and relieve directly to the reactor building. This could produce potentially adverse radiological and environmental conditions in the reactor building for personnel and equipment and hinder recovery efforts. ____

3.7 There are four Back Draft Dampers located in the CPCS and ventilation ductwork that affect various vent paths used in this procedure. Two Back Draft Dampers are located in the combined Drywell and Torus supply ductwork upstream of valves GS-HV-4979 and GS-HV-4980 and two are located in the Torus return ductwork downstream of valves GS-HV-4962 and GS-HV-4963. ____

These Back Draft Dampers are set to automatically close at 1.2 ±.23 psid and must be manually reset. Therefore, vent paths that pass through Back Draft Dampers will not likely be available while venting under conditions of elevated containment pressure. ____

3.8 The Hard Torus Vent path is adjacent to the manual valve actuator station. If the Hard Torus Vent valves (GS-HV-4964 and GS-HV-11541) must be operated manually, they should be opened prior to any evidence of core damage or prior to containment pressure reaching 35 psig (rupture disc pressure). ____

3.9 IF the Backup Pneumatic Supply (nitrogen bottles) is being used for controlling
GS-HV-11541 TORUS VENT ISOLATION VALVE
AND GS-HV-4964 SUPP CHMBR TO CPCS DMP
THEN the number of strokes available are as follows [**70071704**]:

- GS-HV-4964 - 1 Stroke Open; HV-11541 - 3 Cycles, over a 24 Hr. period ____

  OR

- GS-HV-4964 - 2 Cycles; HV-11541 - 2 Cycles, over a 16 Hr. period ____

3.10 The ISLN OVRD pushbutton must be depressed prior to each valve operation regardless of the OVER-RIDDEN light status. The over-ride for an individual valve does not seal in and is reset each time that the valve is closed. The OVER-RIDDEN light remains illuminated until each valve controlled by that ISLN OVRD pushbutton has been given a closed demand. ____

4.0 EQUIPMENT REQUIRED

4.1 The following equipment is required to:

- Unblank, rotate and recouple piping downstream of 1-GS-V058 and remove the blank flange downstream of 1-GP-V129.
- Open the Torus Vent Isolation Valve, GS-HV-11541.

4.2 Key #9 for EOP locker in OSC (obtain from SM office or break red key holder glass in OSC)

4.3 EOP-318 Implementation Kit (EOP locker in OSC)

contents:	2	1-1/4 inch wrenches
	1	6 amp fuse
	1	fuse puller
	1	flashlight

5.0 PROCEDURE

NOTE

All operations are performed from panel 10C650E unless otherwise noted.

CAUTION

This procedure constitutes extreme actions that are only to be taken in response to severely degraded plant conditions. These actions warrant evaluation of current and future plant conditions, prioritization of available plant systems and components, and consideration of the expected consequences to the plant.

5.1 Venting to Control Containment Pressure with Suppression Pool Level Less than 180 Inches

NOTE

Section 5.1.1 gives direction for the operation of the Hard Torus Vent path. Containment pressure must be greater than 35 psig to initiate flow through the rupture disc. In case of loss of DC power or pneumatics, GS-HV-4964 and GS-HV-11541 may be operated manually using Attachment 5.

The Limitations of Step 3.9 apply if the Backup Pneumatic Supply (nitrogen bottles) is being used for controlling GS-HV-11541 and GS-HV-4964.

5.1.1. **VENT** the containment via the **Hard Torus Vent** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting via the Hard Torus Vent will be performed. ____

C. In the Lower Relay Room, Elev 102' at panel 1YF404 (see Attachment 2), **INSTALL** F22 (6 amp fuse). ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4964 SUPP CHMBR TO CPCS DMP. ____

E. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building via the Hard Torus Vent. ____

Continued on next page

5.1.1 (continued)

F. WHEN HV-4964 SUPP CHMBR TO CPCS DMP is full open, THEN **OPEN** GS-HV-11541 TORUS VENT ISOLATION VALVE. ____

G. WHEN drywell pressure can be maintained below 60 psig, THEN **CLOSE** GS-HV-11541 TORUS VENT ISOLATION VALVE. ____

H. **REPEAT S**teps 5.1.1.E thru 5.1.1.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. IF actions taken to reduce containment pressure have been unsuccessful, then continue in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.2 provides a hard-piped vent path that does not communicate with blowout panels or back draft dampers and is scrubbed by the Suppression Pool. However, the use of this vent path will result in an unmonitored release to the environment and requires local operations to be performed under potentially adverse radiological and/or environmental conditions.

5.1.2. **VENT** the containment via the **Suppression Chamber supply and ILRT piping** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the South end of the Reactor Building near the CST will be performed. ____

NOTE

Valve 1-GS-V058 is locally operated on Reactor Building elev. 102, south HCU area against Drywell wall. The angled piping downstream of 1-GS-V058 is located in the Reactor Building below 1-GS-V058.

Valve 1-GP-V129 is locally operated in the yard area south of the Power Block, 8 ft above the ground (against Power Block wall near the CST). There is a blank flange downstream of 1-GP-V129 which must be removed to provide a flowpath.

C. **UNBLANK**, **ROTATE**, and **COUPLE** the angled piping downstream of 1-GS-V058. ____

D. **REMOVE** blank flange downstream of 1-GP-V129. ____

E. **OPEN** 1-GP-V129 ILRT Sensing Line Isln Vlv. (local) ____

F. **OPEN** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv (local). ____

G. **ENSURE** personnel are clear of the area at the South end of the Reactor Building near the CST. ____

H. **VERIFY** that the Control Room Emergency Filtration System is operating in the Isolate/Recirculation mode. ____

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5.1.2 (continued)

I. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building near the CST. ____

J. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4958 CPCS RET TO SUPP CHMBR. ____

K. WHEN GS-HV-4958 CPCS RET TO SUPP CHMBR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4978 N_2 SUP HDR ISLN VLV. ____

L. When drywell pressure can be maintained below 60 psig then **CLOSE** the following:

- GS-HV-4978 N_2 SUP HD ISLN VLV ____
- GS-HV-4958 CPCS RET TO SUPP CHMBR ____

M. **REPEAT** Steps 5.1.2.G thru 5.1.2.L as necessary to reduce and maintain drywell pressure below 65 psig. ____

N. IF __ actions taken to reduce containment pressure have been unsuccessful, then continue in this procedure. ____

O. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.3 provides a hard-piped vent path that does not communicate with blowout panels or back draft dampers. However, the use of this vent path will result in an unmonitored, unscrubbed and untreated radioactive release to the environment and requires local operations to be performed under potentially adverse radiological and/or environmental conditions.

5.1.3. **VENT** the containment via the **Drywell supply and ILRT piping** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the South end of the Reactor Building near the CST will be performed. ____

NOTE

Valve 1-GS-V058 is locally operated on Reactor Building elev. 102, south HCU area against Drywell wall. The angled piping downstream of 1-GS-V058 is located in the Reactor Building below 1-GS-V058.

Valve 1-GP-V129 is locally operated in the yard area south of the Power Block, 8 ft above the ground (against Power Block wall near the CST). There is a blank flange downstream of 1-GP-V129 which must be removed to provide a flowpath.

C. **UNBLANK**, **ROTATE**, and **COUPLE** the angled piping downstream of 1-GS-V058. ____

D. **REMOVE** blank flange downstream of 1-GP-V129 if not previously performed. ____

E. **ENSURE** 1-GP-V129 ILRT Sensing Line Isln Vlv (local) is OPEN. ____

F. **ENSURE** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv (local) is OPEN. ____

G. **ENSURE** personnel are clear of the area at the South end of the Reactor Building near the CST. ____

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5.1.3 (continued)

H. **VERIFY** that the Control Room Emergency Filtration System is operating in the Isolate/Recirculation mode. ____

I. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building near the CST. ____

J. **DEPRESS** ISLN OVRD and
OPEN GS-HV-4956 CPCS RET TO CNTMT DMPR. ____

K. WHEN GS-HV-4956 CPCS RET TO CNTMT DMPR is full open, THEN **DEPRESS** ISLN OVRD
AND **OPEN** GS-HV-4978 N_2 SUP HDR ISLN VLV. ____

L. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4978 N_2 SUP HD ISLN VLV ____
- GS-HV-4956 CPCS RET TO CNTMT DMPR ____

M. **REPEAT** Steps 5.1.3.G thru 5.1.3.L as necessary to reduce and maintain drywell pressure below 65 psig. ____

N. IF __ actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

O. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.4 provides a vent path that is scrubbed by the Suppression Pool, treated by FRVS and monitored prior to release to the environment. However, the vent path passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.4. **VENT** the containment via the **Suppression Chamber 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting of the Suppression Chamber to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and OPEN GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4964 SUPP CHMBR TO CPCS DMP. ____

E. **ANNOUNCE** containment venting of the Suppression Chamber to the Reactor Building. ____

F. WHEN GS-HV-4964 SUPP CHMBR TO CPCS DMP is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4963 SUPP CHMBR N_2 M/U EXH. ____

G. WHEN drywell pressure can be maintained below 60 psig, THEN **CLOSE** the following:

- GS-HV-4963 SUPP CHMBR N_2 M/U EXH ____
- GS-HV-4964 SUPP CHMBR TO CPCS DMP ____

H. **REPEAT** Steps 5.1.4.D thru 5.1.4.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

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5.1.4 (continued)

I. IF __ actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN ___ containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.5 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.5. **VENT** the containment via the **Drywell 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting of the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. When GS-HV-4952 CNTMT TO CPCS INBD is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4951 PRI CNTMT N_2 M/U EXH. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4951 PRI CNTMT N_2 M/U EXH ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

H. **REPEAT** Steps 5.1.5.D thru 5.1.5.G as necessary to reduce and maintain drywell pressure below 65 psig.

I. IF actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.6 provides a vent path that is scrubbed by the Suppression Pool, treated by FRVS and monitored prior to release to the environment. However, the vent path passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.6. **VENT** the containment via the **Suppression Chamber 24" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Suppression Chamber to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4964 SUPP CHMBR TO CPCS DMP. ____

E. **ANNOUNCE** containment venting of the Suppression Chamber to the Reactor Building. ____

F. WHEN GS-HV-4964 SUPP CHMBR TO CPCS DMP is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4962 SUPP CHMBR TO CPCS OUT. ____

G. WHEN drywell pressure can be maintained below 60 psig, THEN **CLOSE** the following:

- GS-HV-4964 SUPP CHMBR TO CPCS DMP ____
- GS-HV-4962 SUPP CHMBR TO CPCS OUT ____

H. **REPEAT** Steps 5.1.6.D thru 5.1.6.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

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5.1.6 (continued)

I. IF actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure.

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1.

CAUTION

Section 5.1.7 provides a vent path that is scrubbed by the Suppression Pool, treated by FRVS and monitored prior to release to the environment. However, the vent path, passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.7. **VENT** the containment via the **Suppression Chamber 24" supply** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Suppression Chamber to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372C Drwl Purge Vent Sup Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4958 CPCS RET TO SUPP CHMBR. ____

E. **ANNOUNCE** containment venting of the Suppression Chamber to the Reactor Building. ____

F. WHEN GS-HV-4958 CPCS RET TO SUPP CHMBR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4980 CPCS RT TO SUPP CHMBR. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4980 CPCS RT TO SUPP CHMBR ____
- GS-HV-4958 CPCS RET TO SUPP CHMBR ____

H. **REPEAT** Steps 5.1.7.D thru 5.1.7.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. IF actions taken to reduce containment pressure have been unsuccessful, THEN continue in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.8 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.8. **VENT** the containment via the **Drywell 24" supply** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372C Drwl Purge Vent Sup Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4979 CPCS RET TO CNTMT DMPR. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4979 CPCS RET TO CNTMT DMPR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4956 CPCS RET TO CNTMT DMPR. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4979 CPCS RET TO CNTMT DMPR ____
- GS-HV-4956 CPCS RET TO CNTMT DMPR ____

H. **REPEAT** Steps 5.1.8.D thru 5.1.8.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. If actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.1.9 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.1.9. **VENT** the containment via the **Drywell 26" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building.

F. WHEN GS-HV-4952 CNTMT TO CPCS INBD is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4950 CNTMT TO CPCS OUTB DMP. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4950 CNTMT TO CPCS OUTB DMP ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

H. **REPEAT** Steps 5.1.9.D thru 5.1.9.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

5.2 Venting to Control Containment Pressure with Suppression Pool Level Greater than 180 Inches

CAUTION

Section 5.2.1 can be performed only if Containment level is less than 50 feet.

Section 5.2.1 provides a hard-piped vent path that does not communicate with blowout panels or back draft dampers. However, the use of this vent path will result in an unmonitored and untreated radioactive release to the environment and requires local operations to be performed under potentially adverse radiological and/or environmental conditions.

5.2.1. **VENT** the containment via the **Drywell supply and ILRT piping** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the South end of the Reactor Building near the CST will be performed. ____

NOTE

Valve 1-GS-V058 is locally operated on Reactor Building elev. 102, south HCU area against Drywell wall. The angled piping downstream of 1-GS-V058 is located in the Reactor Building below 1-GS-V058.

Valve 1-GP-V129 is locally operated in the yard area south of the Power Block, 8 ft above the ground (against Power Block wall near the CST). There is a blank flange downstream of 1-GP-V129 which must be removed to provide a flowpath.

C. **UNBLANK, ROTATE**, and **COUPLE** the angled piping downstream of 1-GS-V058. ____

D. **REMOVE** blank flange downstream of 1-GP-V129. ____

E. **OPEN** 1-GP-V129 ILRT Sensing Line Isln Vlv. (local) ____

F. **OPEN** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv (local). ____

G. **ENSURE** that personnel are clear of the area at the South end of the Reactor Building near the CST. ____

Continued on next page

5.2.1 (continued)

H. **VERIFY** the Control Room Emergency Filtration System is operating in the Isolate/Recirculation mode. ____

I. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building near the CST. ____

J. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4956 CPCS RET TO CNTMT DMPR. ____

K. WHEN GS-HV-4956 CPCS RET TO CNTMT DMPR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4978 N_2 SUP HDR ISLN VLV. ____

L. WHEN drywell pressure can be maintained below 60 psig, THEN **CLOSE** the following:

- GS-HV-4978 N_2 SUP HD ISLN VLV ____
- GS-HV-4956 CPCS RET TO CNTMT DMPR ____

M. **REPEAT** Steps 5.2.1.G thru 5.2.1.L as necessary to reduce and maintain drywell pressure below 65 psig. ____

N. IF __ actions taken to reduce containment pressure have been unsuccessful, then continue in this procedure. ____

O. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.2.2 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.2.2. **VENT** the containment via the **Drywell 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4952 CNTMT TO CPCS INBD is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4951 PRI CNTMT N_2 M/U EXH. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4951 PRI CNTMT N_2 M/U EXH ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

H. **REPEAT** Steps 5.2.2.D thru 5.2.2.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. IF __ actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.2.3 can be performed only if Containment level is less than 50 feet.

Section 5.2.3 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.2.3. **VENT** the containment via the **Drywell 24" supply** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372C Drwl Purge Vent Sup Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4979 CPCS RET TO CNTMT DMPR. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4979 CPCS RET TO CNTMT DMPR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4956 CPCS RET TO CNTMT DMPR. ____

G. WHEN drywell pressure can be maintained below 60 psig THEN **CLOSE** the following:

- GS-HV-4979 CPCS RET TO CNTMT DMPR ____
- GS-HV-4956 CPCS RET TO CNTMT DMPR ____

H. **REPEAT** Steps 5.2.3.D thru 5.2.3.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. IF __ actions taken to reduce containment pressure have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.2.4 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.2.4. **VENT** the containment via the **Drywell 26" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4952 CNTMT TO CPCS INBD is full open,
THEN **DEPRESS** ISLN OVRD
AND **OPEN** GS-HV-4950 CNTMT TO CPCS OUTB DMP. ____

G. WHEN drywell pressure can be maintained below 60 psig
THEN **CLOSE** the following:

- GS-HV-4950 CNTMT TO CPCS OUTB DMP ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

H. **REPEAT** Steps 5.2.4.D thru 5.2.4.G as necessary to reduce and maintain drywell pressure below 65 psig. ____

I. WHEN containment venting is no longer required,
THEN **PERFORM** system restoration in accordance with Attachment 1. ____

5.3 **Venting to Control Containment Hydrogen Concentration with Suppression Pool Level Less Than 180 Inches**

CAUTION

Section 5.3.1 provides a hard-piped vent path that does not communicate with blowout panels or back draft dampers. However, the use of this vent path will result in an unmonitored and untreated radioactive release to the environment and requires local operations to be performed under potentially adverse radiological and/or environmental conditions.

5.3.1. **VENT** the containment via the **Suppression Chamber supply and ILRT Piping** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the South end of the Reactor Building near the CST will be performed. ____

NOTE

Valve 1-GS-V058 is locally operated on Reactor Building elev. 102, south HCU area against Drywell wall. The angled piping downstream of 1-GS-V058 is located in the Reactor Building below 1-GS-V058.

Valve 1-GP-V129 is locally operated in the yard area south of the Power Block, 8 ft above the ground (against Power Block wall near the CST). There is a blank flange downstream of 1-GP-V129 which must be removed to provide a flowpath.

C. **UNBLANK**, **ROTATE**, and **COUPLE** the angled piping downstream of 1-GS-V058. ____

D. **REMOVE** blank flange downstream of 1-GP-V129. ____

E. **OPEN** 1-GP-V129 ILRT Sensing Line Isln Vlv. (local) ____

F. **OPEN** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv (local). ____

G. **ENSURE** that personnel are clear of the area at the South end of the Reactor Building near the CST. ____

H. **VERIFY** the Control Room Emergency Filtration System is operating in the Isolate/Recirculation mode. ____

Continued on next page

5.3.1 (continued)

I. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building near the CST. ____

J. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4958 CPCS RET TO SUPP CHMBR. ____

K. WHEN GS-HV-4958 CPCS RET TO SUPP CHMBR is full open, THEN **DEPRESS** ISLN OVRD
AND **OPEN** GS-HV-4978 N_2 SUP HDR ISLN VLV. ____

L. WHEN either:

- Drywell and suppression chamber hydrogen concentration can be maintained below 6 percent ____
OR
- Drywell and suppression chamber oxygen concentration can be maintained below 5 percent, ____

THEN **CLOSE** the following:

- GS-HV-4978 N_2 SUP HD ISLN VLV ____
- GS-HV-4958 CPCS RET TO SUPP CHMB ____

M. **REPEAT** Steps 5.3.1.G thru 5.3.1.L as necessary to reduce and maintain: ____

- Drywell and suppression chamber hydrogen concentration below 6 percent

OR

- Drywell and suppression chamber oxygen concentration below 5 percent.

N. IF __ actions taken to reduce drywell and suppression chamber hydrogen/oxygen concentration have been unsuccessful, THEN **CONTINUE** in this procedure. ____

O. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.3.2 provides a vent path that is scrubbed by the Suppression Pool, treated by FRVS and monitored prior to release to the environment. However, the vent path passes through ductwork that contains Back Draft Dampers and Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.3.2. **VENT** the containment via the **Suppression Chamber 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Suppression Chamber to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and OPEN GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4964 SUPP CHMBR TO CPCS DMP. ____

E. **ANNOUNCE** containment venting of the Suppression Chamber to the Reactor Building. ____

F. WHEN GS-HV-4964 SUPP CHMBR TO CPCS DMP is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4963 SUPP CHMBR N_2 M/U EXH. ____

G. WHEN either:

- Drywell and suppression chamber hydrogen concentration can be maintained below 6 percent ____
  OR
- Drywell and suppression chamber oxygen concentration can be maintained below 5 percent, ____

THEN **CLOSE** the following:

- GS-HV-4963 SUPP CHMBR N_2 M/U EXH ____
- GS-HV-4964 SUPP CHMBR TO CPCS DMP. ____

Continued on next page

5.3.2 (continued)

H. **REPEAT** Steps 5.3.2.D thru 5.3.2.G as necessary to reduce and maintain:

- Drywell and suppression chamber hydrogen concentration below 6 percent

  OR

- Drywell and suppression chamber oxygen concentration below 5 percent. ____

I. IF __ actions taken to reduce drywell and suppression chamber hydrogen/oxygen concentration have been unsuccessful, THEN **CONTINUE** in this procedure. ____

J. WHEN ___ containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.3.3 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.3.3. **VENT** the containment via the **Drywell 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4952 CNTMT TO CPCS INBD is full open, THEN **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4951 PRI CNTMT N_2 M/U EXH. ____

G. WHEN either:

- Drywell and suppression chamber hydrogen concentration can be maintained below 6 percent ____
  OR
- Drywell and suppression chamber oxygen concentration can be maintained below 5 percent, ____

THEN **CLOSE** the following:

- GS-HV-4951 PRI CNTMT N_2 M/U EXH ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

Continued on next page

5.3.3 (continued

H. **REPEAT** Steps 5.3.3.D thru 5.3.3.G as necessary to reduce and maintain:

- Drywell and suppression chamber hydrogen concentration below 6 percent

  OR

- Drywell and suppression chamber oxygen concentration below 5 percent. ____

I. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

5.4 Venting to Control Containment Hydrogen Concentration with Suppression Pool Level Greater than 180 Inches

CAUTION

Section 5.4.1 provides a hard-piped vent path that does not communicate with blowout panels or back draft dampers. However, the use of this vent path will result in an unmonitored and untreated radioactive release to the environment and requires local operations to be performed under potentially adverse radiological and/or environmental conditions.

5.4.1. **VENT** the containment via the **Drywell supply and ILRT piping** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the South end of the Reactor Building near the CST will be performed. ____

NOTE

Valve 1-GS-V058 is locally operated on Reactor Building elev. 102, south HCU area against Drywell wall. The angled piping downstream of 1-GS-V058 is located in the Reactor Building below 1-GS-V058.

Valve 1-GP-V129 is locally operated in the yard area south of the Power Block, 8 ft above the ground (against Power Block wall near the CST). There is a blank flange downstream of 1-GP-V129 which must be removed to provide a flowpath.

C. **UNBLANK**, **ROTATE**, and **COUPLE** the angled piping downstream of 1-GS-V058. ____

D. **REMOVE** blank flange downstream of 1-GP-V129. ____

E. **OPEN** 1-GP-V129 ILRT Sensing Line Isln Vlv. (local) ____

F. **OPEN** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv (local). ____

G. **ENSURE** that personnel are clear of the area at the South end of the Reactor Building near the CST. ____

H. **VERIFY** the Control Room Emergency Filtration System is operating in the Isolate/Recirculation mode. ____

Continued on next page

5.4.1 (continued)

I. **ANNOUNCE** that containment venting will commence at the South end of the Reactor Building near the CST. ____

J. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4956 CPCS RET TO CNTMT DMPR. ____

K. WHEN GS-HV-4956 CPCS RET TO CNTMT DMPR is full open, THEN **DEPRESS** ISLN OVRD AND **OPEN** GS-HV-4978 N_2 SUP HDR ISLN VLV. ____

L. WHEN either:

- Drywell and suppression chamber hydrogen concentration can be maintained below 6 percent ____
  OR
- Drywell and suppression chamber oxygen concentration can be maintained below 5 percent, ____

THEN **CLOSE** the following:

- GS-HV-4978 N_2 SUP HD ISLN VLV ____
- GS-HV-4956 CPCS RET TO CNTMT DMPR ____

M. **REPEAT** Steps 5.4.1.G thru 5.4.1.L as necessary to reduce and maintain:

- Drywell and suppression chamber hydrogen concentration below 6 percent

  OR

- Drywell and suppression chamber oxygen concentration below 5 percent. ____

N. IF __ actions taken to reduce drywell and suppression chamber hydrogen/oxygen concentration have been unsuccessful, THEN continue in this procedure. ____

O. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

CAUTION

Section 5.4.2 provides a vent path that is treated by FRVS and monitored prior to release to the environment. However, the vent path is not scrubbed by the Suppression Pool and passes through ductwork that contains Blow-out Panels. Consideration should be given to the potential for creating and/or increasing an adverse radiological and/or environmental condition (i.e. oxygen deficiencies) within the reactor building.

5.4.2. **VENT** the containment via the **Drywell 2" exhaust** as follows:

A. **ENSURE** that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. ____

B. **NOTIFY** the Emergency Duty Officer that containment venting from the Drywell to the Reactor Building will be performed. ____

C. **DEPRESS** ISLN OVRD and **OPEN** GT-HD-9372A Drwl Purge Vent Exh Dmpr. ____

D. **DEPRESS** ISLN OVRD and **OPEN** GS-HV-4952 CNTMT TO CPCS INBD DMP. ____

E. **ANNOUNCE** containment venting of the Drywell to the Reactor Building. ____

F. WHEN GS-HV-4952 CNTMT TO CPCS INBD is full open,
THEN **DEPRESS** ISLN OVRD
AND **OPEN** GS-HV-4951 PRI CNTMT N_2 M/U EXH. ____

G. WHEN either:

- Drywell and suppression chamber hydrogen concentration can be maintained below 6 percent ____
OR
- Drywell and suppression chamber oxygen concentration can be maintained below 5 percent, ____

THEN **CLOSE** the following:

- GS-HV-4951 PRI CNTMT N_2 M/U EXH ____
- GS-HV-4952 CNTMT TO CPCS INBD ____

Continued on next page

5.4.2 (continued)

H. **REPEAT** Steps 5.4.2.D thru 5.4.2.G as necessary to reduce and maintain:

- Drywell and suppression chamber hydrogen concentration below 6 percent

  OR

- Drywell and suppression chamber oxygen concentration below 5 percent. ____

I. WHEN containment venting is no longer required, THEN **PERFORM** system restoration in accordance with Attachment 1. ____

6.0 RECORDS

6.1 **RETAIN** the following IAW RM-AA-101, Records Management Program.

- Attachment 1, Containment Vent Valve Restoration
- Attachment 5, Hard Torus Vent Manual Operation

7.0 REFERENCES

7.1 **P&IDs:**

- M-57-1
- M-60-1
- M-76-1
- M-83-1
- M-84-1

7.2 **Electrical Diagrams:**

- 10855 J200(Q)-382-8, 10855 J200(Q)-396-5
- 10855 J200(Q)-391-6, 10855 J200(Q)-381-6
- 10855 J200(Q)-378-6, 10855 J200(Q)-374-6
- 10855 J200(Q)-379-8, 10855 J200(Q)-380-8
- 10855 J200(Q)-385-6

7.3 **GE Documents:**

- BWROG Emergency Procedure Guidelines, Rev. 4 (NEDO 31331, March 1987)

7.4 **Other References:**

- C-0928-0
- C-0929-0
- C-0931-0
- C-0932-0
- Order 70071704, To specify the number of valve strokes that can be by the gas stored in the nitrogen bottles. (Engineering Calculation H-1-KB-MDC-1007)

7.5 **Closing Documents:**

- CD-382G NRC 354/92-18-02, Ensure proper notifications prior to venting.

ATTACHMENT 1
CONTAINMENT VENT VALVE RESTORATION
Page 1 of 2

1. **CLOSE** 1-GP-V129 ILRT Sensing Line Isln Vlv ___ ____

2. **CLOSE** 1-GS-V058 N_2 Sup Hdr Comp Air Sup Man Vlv ___ ____

3. **INSTALL** blank flange downstream of 1-GP-V129 and, **UNCOUPLE, ROTATE**, and **BLANK** the angled piping downstream of 1-GS-V058.

   BLANK INSTALLED - 1-GP-V129 ___ ____

   PIPING UNCOUPLED, ROTATED, AND BLANKS INSTALLED ___ ____

4. **CLOSE** GT-HD-9372A Drwl Purge Vent Exh Dmpr ___ ____

5. **CLOSE** GT-HD-9372C Drwl Purge Vent Sup Dmpr ___ ____

6. **VERIFY CLOSED** the following:

   A. GS-HV-4950 CNTMT TO CPCS OUTB DMP ___ ____

   B. GS-HV-4951 PRI CNTMT N_2 M/U EXH ___ ____

   C. GS-HV-4952 CNTMT TO CPCS INBD DMP ___ ____

   D. GS-HV-4956 CPCS RET TO CNTMT DMPR ___ ____

   E. GS-HV-4958 CPCS RET TO SUPP CHMBR ___ ____

   F. GS-HV-4962 SUPP CHMBR CPCS OUT ___ ____

   G. GS-HV-4963 SUPP CHMBR N_2 M/U EXH ___ ____

   H. GS-HV-4978 N_2 SUP HDR ISLN VLV ___ ____

   I. GS-HV-4980 CPCS RET TO CNTMT/DMPR ___ ____

NOTE

If GS-HV-11541 and GS-HV-4964 have been operated manually, it may be necessary to open the block/bypass valve on the manual actuator (see Attachment 5).

   J. GS-HV-4964 SUPP CHMBR TO CPCS DMP ___ ____

   K. GS-HV-11541 TORUS VENT ISOLATION VALVE ___ ____

ATTACHMENT 1
Page 2 of 2
CONTAINMENT VENT VALVE RESTORATION

NOTE

The following steps do not require signoff in this procedure. Verification of these activities is accomplished through the referenced administrative procedure.

L. **REPLACE** the Hard Torus Vent rupture disc. ___

M. **REMOVE** fuse F22 in 1YF404 and **RETURN** to the EOP Kit. ___

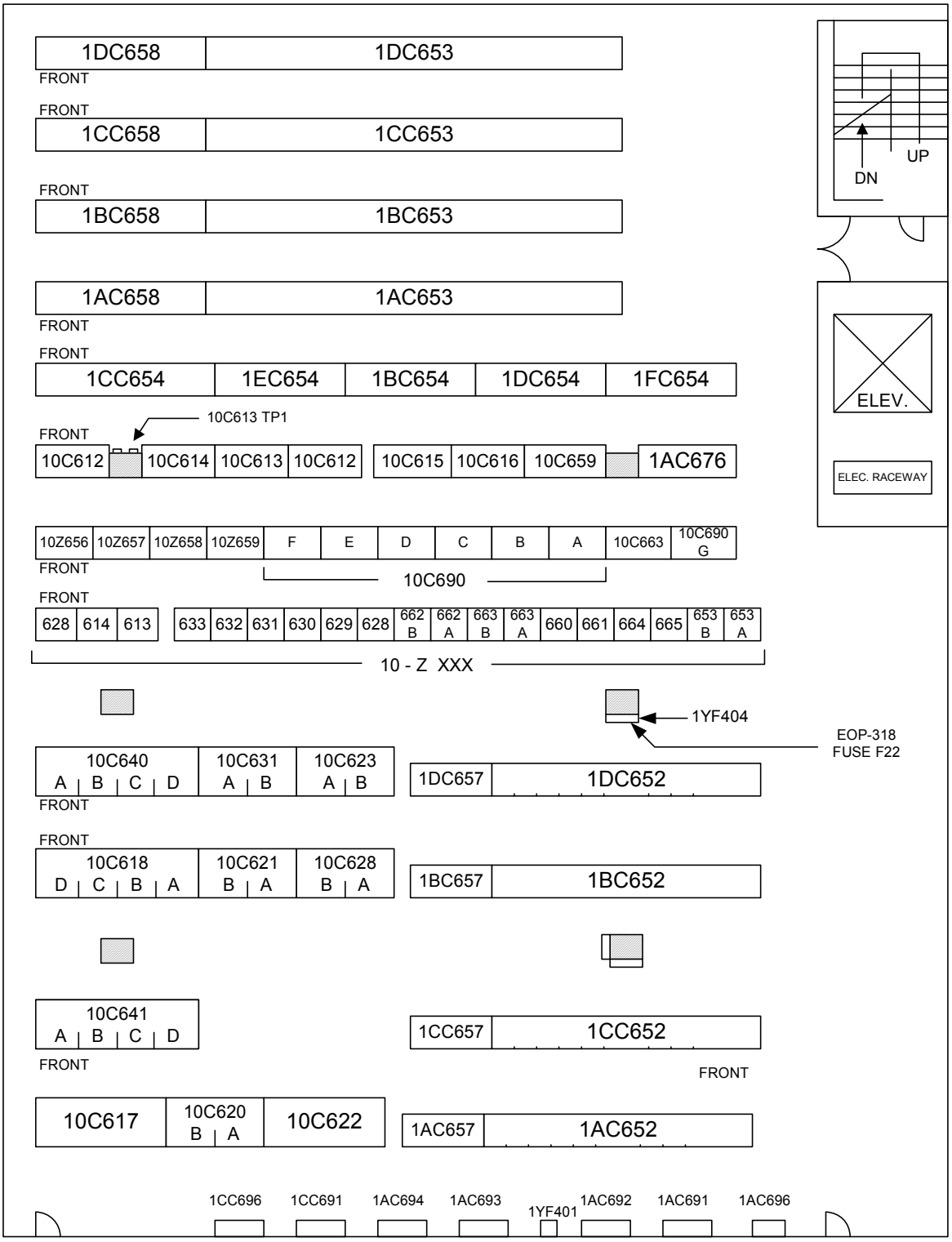
PERFORMED BY:

PRINT NAME	SIGNATURE	INITIALS	DATE/TIME

REVIEWED BY:

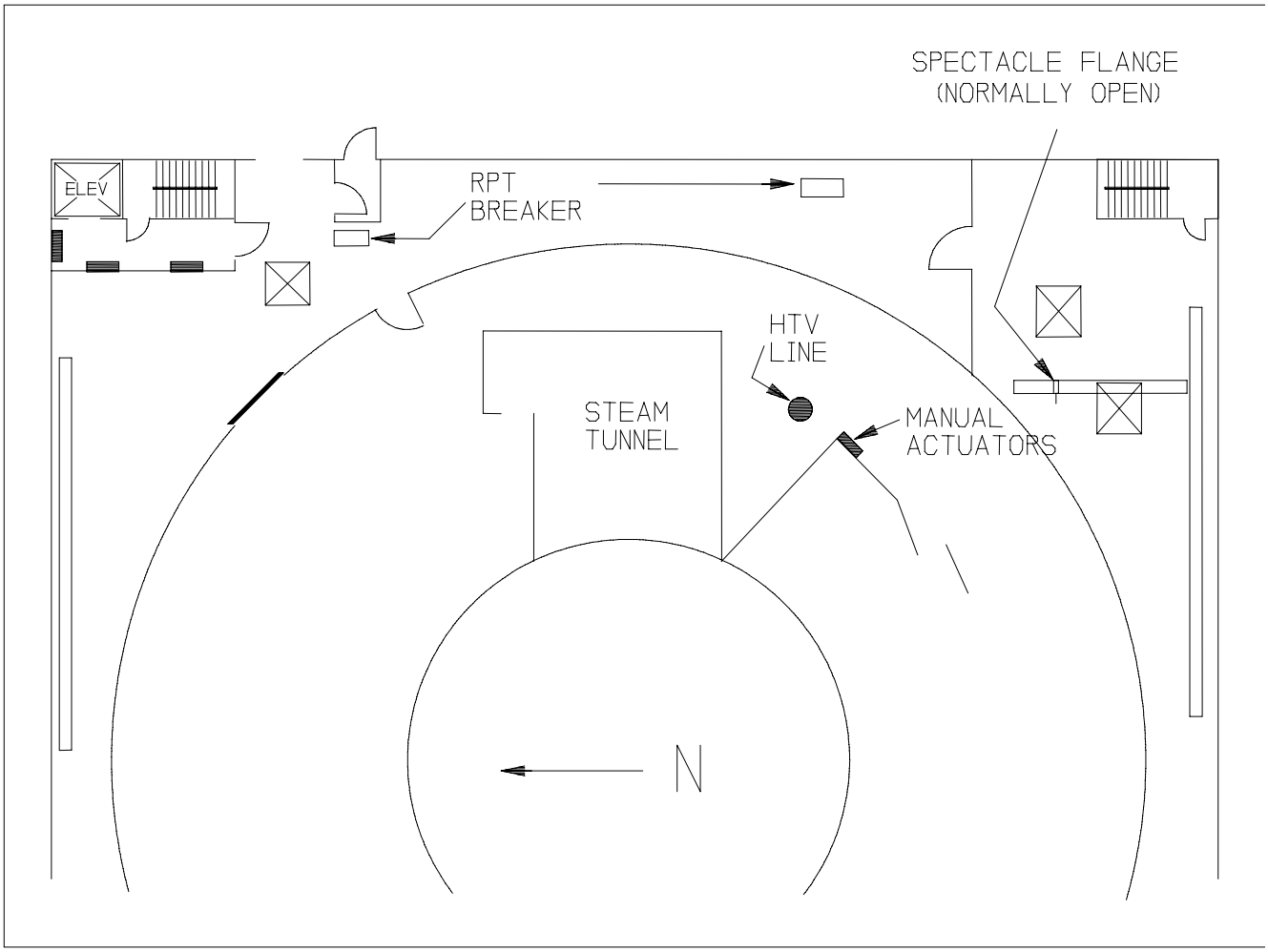
SM/CRS _____ Date-Time

ATTACHMENT 2
LOWER RELAY ROOM LOCATIONS

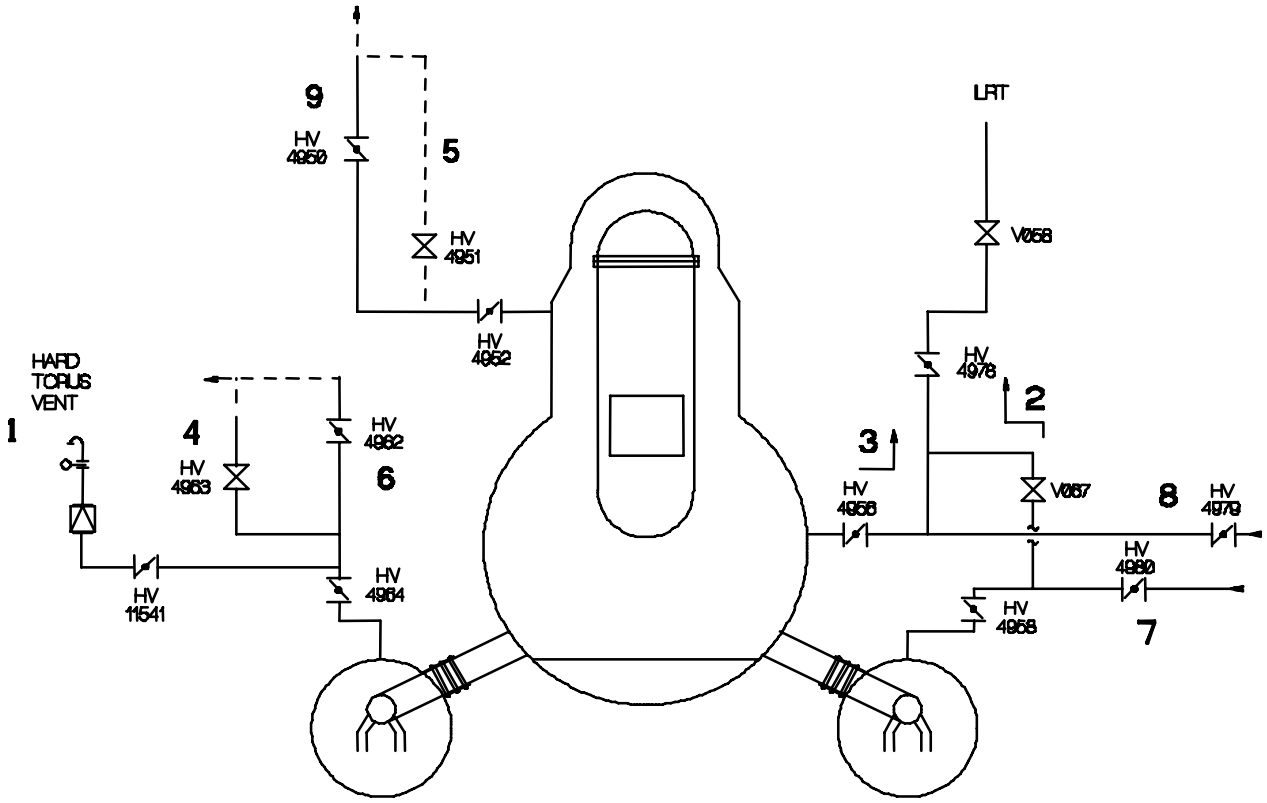


LOWER RELAY ROOM

ATTACHMENT 3
REACTOR BUILDING 102' ELEV. LOCATIONS



ATTACHMENT 4
CONTAINMENT VENT PATHS



VENT PATH NUMBER	EOP SECTION #			
	PRESS CONTROL		H2 CONTROL	
	<180"	>180"	<180"	>180"
1	5.1.1			
2	5.1.2		5.3.1	
3	5.1.3	5.2.1		5.4.1
4	5.1.4		5.3.2	
5	5.1.5	5.2.2	5.3.3	5.4.2
6	5.1.6			
7	5.1.7			
8	5.1.8	5.2.3		
9	5.1.9	5.2.4		

ATTACHMENT 5
HARD TORUS VENT VALVE MANUAL OPERATION

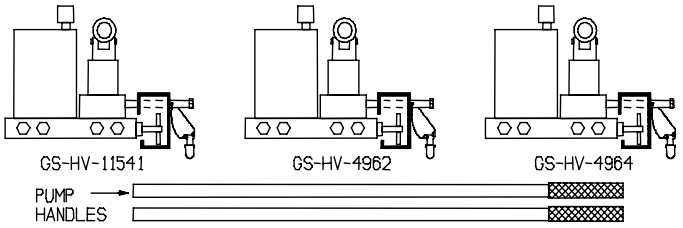


Figure 1

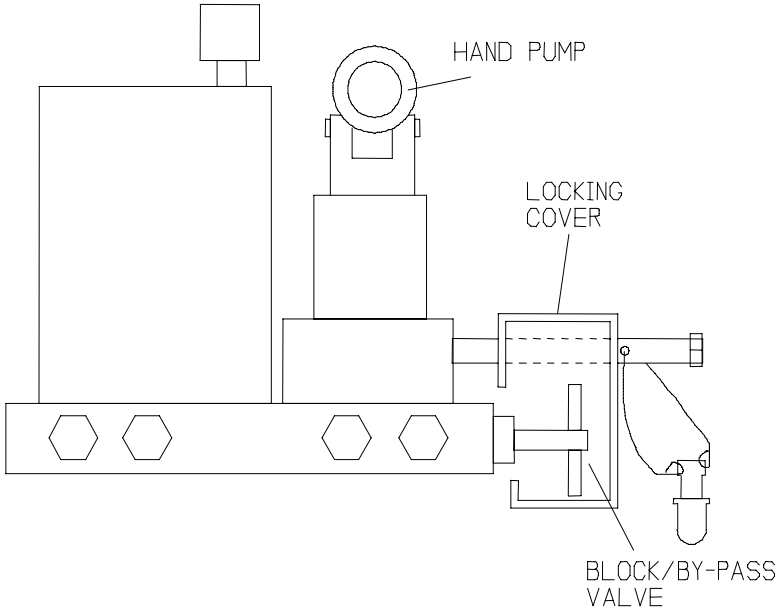


Figure 2

NOTE

Valves GS-HV-11541, GS-HV-4964 and GS-HV-4962 can be operated manually via hydraulic hand pumps located in the Reactor Bldg Elev. 102' (see Attachment 3).
To operate the GS valve actuator in the open direction, the "block/bypass" valve must be closed. With the "block/bypass" valve closed, the GS valve actuator cannot be operated remotely.

1. In the Reactor Bldg Elev. 102' at the Hard Torus Vent manual actuators (see Attachment 3),
   UNLOCK and **REMOVE/ROTATE** locking cover for the respective valve (Figures 1 and 2). ____

ATTACHMENT 5
HARD TORUS VENT VALVE MANUAL OPERATION

CAUTION

The Hard Torus Vent path is in close proximity to the manual actuator station. These valves should only be opened manually prior to containment pressure reaching 35 psig (rupture disc pressure) or prior to core damage. Once the block/bypass valve has been closed the respective valves cannot be operated remotely.
Rad Pro support should be available when stroking these valves manually. Local and Hard Torus Vent rad monitors/alarms can be used as an indication of area radiation.

1. **CLOSE** the block/bypass valve (see Figure 2). ___

NOTE

Full actuator travel (open) is achieved when an increased pumping resistance is felt. Additional pumping circulates fluid through an internal relief valve.

2. **OPERATE** hand pump (may take several hundred strokes) until increased pumping resistance is noted. ___

3. To close GS-HV-11541 and GS-HV-4964
   OPEN the block/bypass valve on the manual actuator
   AND **CLOSE** GS-HV-11541 and GS-HV-4964. ___