

**HOPE CREEK GENERATING STATION**

**HC.OP-AR.ZZ-0019(Q) - Rev. 17**

**OVERHEAD ANNUNCIATOR WINDOW BOX E6**

**USE CATEGORY: II**

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- Packages and Affected Document Numbers incorporated into this revision:  
CP No. \_\_\_\_\_ CP Rev. \_\_\_\_\_ AD No. \_\_\_\_\_ Rev No. \_\_\_\_\_ None ✓
  - The following OPEX were incorporated into this revision: None
  - The following OTSCs were incorporated into this revision: None
- 

**REVISION SUMMARY**

- 1SD-RR-4813 has been removed by DCP 80083637. Operator Action 3.b on Attachment A4 is changed to refer to 1SP-RI-4813 for indication. The indicator and recorder were both located on panel 10C604. This was evaluated by the DCP and is editorial. (70101800-0010)
- Combines Actions for Channels 1, 2, and 3 on Attachment A4 which are identical.

**IMPLEMENTATION REQUIREMENTS**

**Effective Date** 10/8/09

None

## OVERHEAD ANNUNCIATOR WINDOW BOX E6

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## ATTACHMENT A1

CONTROL RM

VENT RAD

ALARM/TRBL

Window Location E6-A1**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **IF** valid alarm condition exists,  
**VERIFY** auto start of CREF Trains in pressurization (OA) mode.
3. **DETERMINE** radiation level in Control Room  
**AND REFER TO** HC.OP-AB.HVAC-0002(Q), Control Room Environment.
4. **DETERMINE**  
**IF** OPERATE failure condition for 1SP-RI-4858C(D) is cause of alarm. (Panel 10C604)
5. **NOTIFY** Radiation Protection of alarm condition.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
1SP-RI-4858C	CH 1 AND/OR CH 2 HIGH LED ILLUMINATED OR OPER LED EXTINGUISHED.	CONTROL ROOM ISOL/CREF AUTO START ON HIGH RAD IF "A" SUPPLY FAN RUNNING
1SP-RI-4858D	CH 1 AND/OR CH 2 HIGH LED ILLUMINATED OR OPER LED EXTINGUISHED.	CONTROL ROOM ISOL/CREF AUTO START ON HIGH RAD IF "B" SUPPLY FAN RUNNING

**REFERENCES:** J-26-0, Sht. 2  
M-26-1, Sht. 1  
H-89-0, Sht. 10

J373(Q)-45(5)-7  
E-6796-0

## ATTACHMENT A1

**NOMENCLATURE** CTRL RM VENT RMS CH C      **SETPOINT** HIGH 2 X 10<sup>-5</sup> uCi/cc

**DESCRIPTION** Channel C Control Room Inlet Plenum high radiation      **ORIGIN** RY-4858C

**AUTOMATIC ACTION:**

Computer indication of radiation level at Air Inlet Plenum to Control Room.  
At radiation levels equal to 2 X 10<sup>-5</sup> uCi/cc (HI HI RAD) CREF automatically initiates  
AND normal Control Building Ventilation (CAE) isolates.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. IF valid alarm condition exists,  
    **VERIFY** AUTO START CREF trains.
3. **DETERMINE** radiation level in Control Room  
    AND REFER to HC.OP-AB.HVAC-0002(Q), Control Room Environment.
4. **DETERMINE**  
    IF OPERATE failure condition for 1SP-RI-4858C is cause of alarm.

CAUSE CORRECTIVE	ACTION
1. High radiation level at Control Building Air Inlet Plenum.	1A. <b>CLOSE</b> HV-9588AA, AB, BA <u>AND</u> BB by pressing ISOLATE PB. 1B. <b>ENSURE</b> Control Room Exhaust Fans are off by dispatching operator to Local Panel EC485. 1C. <b>ENSURE</b> proper operation of CREF Trains. 1D. <b>DETERMINE</b> radiation level in Control Room <u>AND REFER TO</u> HC.OP-AB.HVAC-0002(Q). 1E. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** J-26-0, Sht. 2  
 M-26-1, Sht. 1  
 H-89-0, Sht. 10  
 J373(Q)-45(5)-7

ATTACHMENT A1

ALARM POINT 1SP-RI-4858C

CAUSE CORRECTIVE	ACTION
2. Power      Failure	2A. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1CJ481, Bkr. 19.
3. Detector      Failure	3A. <b>REFER TO</b> T/S 3.3.7.1 for Action Statement
	3B. <b>NOTIFY</b> SM/CRS of failure <u>AND</u> T/S Action Statement.

## ATTACHMENT A1

**NOMENCLATURE** CTRL RM VENT RMS CH D **SETPOINT** HIGH 2 X 10<sup>-5</sup> uCi/cc

**DESCRIPTION** Channel D Control Room Inlet Plenum high radiation **ORIGIN** RY-4858D

**AUTOMATIC ACTION:**

Computer indication of radiation level at Air Inlet Plenum to Control Room.  
At radiation levels equal to 2 X 10<sup>-5</sup> uCi/cc (HI HI RAD) CREF automatically initiates  
AND normal Control Building Ventilation (CAE) isolates.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. IF valid alarm condition exists,  
**VERIFY** AUTO START CREF Trains.
3. **DETERMINE** radiation level in Control Room  
AND REFER TO HC.OP-AB.HVAC-0002(Q), Control Room Environment.
4. **DETERMINE**  
IF OPERATE failure condition for 1SP-RI-4858D is cause of alarm.

CAUSE CORRECTIVE	ACTION
1. High radiation level at Control Building Air Inlet Plenum.	1A. <b>CLOSE</b> HV-9588AA, AB, BA <u>AND</u> BB by pressing ISOLATE PB.  1B. <b>ENSURE</b> Control Room Exhaust Fans are OFF by dispatching operator to Local Panel EC485.  1C. <b>ENSURE</b> proper operation of CREF Trains.  1D. <b>DETERMINE</b> radiation level in Control Room <u>AND REFER TO</u> HC.OP-AB.HVAC-0002(Q).  1E. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** J-26-0, Sht. 2  
M-26-1, Sht. 1  
H-89-0, Sht. 10  
J373(Q)-45(5)-7

ATTACHMENT A1

ALARM POINT 1SP-RI-4858D

CAUSE CORRECTIVE	ACTION
2. Power      Failure	2A. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1DJ481, Bkr. 19.
3. Detector      Failure	3A. <b>REFER TO</b> TS 3.3.7.1 for Action Statement
	3B. <b>NOTIFY</b> SM/CRS of failure <u>AND</u> T/S Action Statement.

## ATTACHMENT A2

**DRYWELL  
COOLER FANS  
TROUBLE**

Window Location E6-A2

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. IF necessary,  
**ENTER** HC.OP-AB.CONT-0001(Q), Drywell Pressure.
3. **DETERMINE** the Drywell Cooler that initiated the trouble alarm  
by checking Control Room indication.
4. IF needed,  
**START** additional Drywell Coolers.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D3668	DRYWELL CLR FANS "A" TROUBLE	Standby fan auto starts.
D4304	DRYWELL CLR FANS "B" TROUBLE	Standby fan auto starts.

**REFERENCES:** H-86-0, Sht. 1, 3



## ATTACHMENT A3

REFUEL FLR

EXH RAD

ALARM/TRBL

Window Location E6-A3**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE**  
IF OPERATE failure condition for 1SP-RI-4856A(B,C) is NOT cause of alarm,  
THEN **PERFORM** the following:
  - a. **REFER TO** HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage,  
AND HC.OP-AB.COOL-0004(Q), Fuel Pool Cooling.
  - b. **SUSPEND** all Refuel operations OR Dry Cask Storage (DCS) operations on refuel floor.
  - c. **ENSURE** FRVS (Filtration, Recirculation, Ventilation System) has started.
  - d. **ENSURE** Reactor Building Ventilation is isolated.
  - e. **REFER TO** HC.OP-EO.ZZ-0103(Q), Reactor Building Control, for possible entry condition.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
1SP-RI-4856A	Refueling Floor Exhaust RMS CH A / CH 1 HIGH LED ILLUMINATED OR OPER LED EXTINGUISHED	RR4856A records radiation level at ALERT FRVS Auto starts (2/3) RBVS Auto isolates (2/3)
1SP-RI-4856B	Refueling Floor Exhaust RMS CH B / CH 1 HIGH LED ILLUMINATED OR OPER LED EXTINGUISHED	FRVS Auto starts (2/3) RBVS Auto isolates (2/3)
1SP-RI-4856C	Refueling Floor Exhaust RMS CH C / CH 1 HIGH LED ILLUMINATED OR OPER LED EXTINGUISHED	FRVS Auto starts (2/3) RBVS Auto isolates (2/3)

**REFERENCES:** M-84-1 M-26-1, Sht. 1  
 J-26-0, Sht. 2 E-6796-0

## ATTACHMENT A3

**NOMENCLATURE** RFLG FLR EXH RMS CH A **SETPOINT** HIGH 2 X 10<sup>-3</sup> uCi/cc

**DESCRIPTION** Refuel Floor Ventilation Exhaust Radiation High Ch A **ORIGIN** RE-4856A

**AUTOMATIC ACTION:**

AUTO START of FRVS (2/3 logic), RBVS AUTO isolation (2/3 logic)

**OPERATOR ACTION:**

1. **NOTIFY** Radiation Protection of the alarm condition.
2. **EVACUATE** personnel from the Refuel Floor.
3. **ENSURE** HC.OP-EO.ZZ-0103/4(Q) has been entered.
4. **REFER TO** HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release, AND HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage.
5. **MONITOR** radiation level on Refuel Floor (RI-4856A,B,C).
6. **DETERMINE** source of activity  
AND ISOLATE IF possible.

CAUSE CORRECTIVE	ACTION
1. High radiation in Refueling Floor Exhaust Plenum Ch A.	1A. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Isolation Dampers are closed. 1B. <b>ENSURE</b> proper operation of FRVS. 1C. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Fans are off. 1D. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage. 1E. <u>IF</u> activity is due to Fuel Pool inventory loss <b>REFER TO</b> HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.

Continued next page

**REFERENCES** M-84-1, M-26-1, Sht. 1  
J-26-0, Sht. 2  
E6796-0

ATTACHMENT A3

CAUSE	CORRECTIVE ACTION
<p>1. High radiation in Refueling Floor Exhaust Plenum Ch A. (continued)</p> <p>2. Power Failure</p> <p>3. Detector Failure</p>	<p>1F. IF __ FRVS did not start <u>OR</u> Secondary Containment fails to isolate <u>THEN REFER TO</u> T/S 3.6.5</p> <p>1G. <b>REQUEST</b> SM/CRS to initiate corrective action.</p> <p>2A. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1AJ481, Bkr. 20.</p> <p>3A. <b>REFER TO</b> T/S 3.3.2 for Action Statement</p> <p>3B. <b>NOTIFY</b> SM/CRS of failure <u>AND</u> T/S Action Statement.</p>

**REFERENCES:** M-84-1  
M-26-1, Sht. 1  
J-26-0, Sht. 2  
  
E6796-0

## ATTACHMENT A3

**NOMENCLATURE** RFLG FLR EXH RMS CH B **SETPOINT** HIGH 2 X 10<sup>-3</sup> uCi/cc

**DESCRIPTION** Refuel Floor Ventilation Exhaust radiation high Ch B **ORIGIN** RE-4856B

**AUTOMATIC ACTION:**

Auto Start of FRVS (2/3 logic) RBVS AUTO isolation (2/3 logic)

**OPERATOR ACTION:**

1. **NOTIFY** Radiation Protection of the alarm condition.
2. **EVACUATE** personnel from the Refuel Floor.
3. **ENSURE** HC.OP-EO.ZZ-0103/4(Q) has been entered.
4. **REFER TO** HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release, AND HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage.
5. **MONITOR** radiation level on Refuel Floor (RI-4856A,B,C).
6. **DETERMINE** source of activity AND ISOLATE IF possible.

CAUSE CORRECTIVE	ACTION
1. High radiation in Refueling Floor Exhaust Plenum Ch B.	1A. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Isolation Dampers are closed. 1B. <b>ENSURE</b> proper operation of FRVS. 1C. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Fans are OFF. 1D. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage. 1E. <u>IF</u> activity is due to Fuel Pool inventory loss <b>REFER TO</b> HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.
Continued next page	

**REFERENCES:** M-84-1, M-26-1, Sht. 1  
 J-26-0, Sht. 2  
 E6796-0

ATTACHMENT A3

CAUSE CORRECTIVE	ACTION
<p>1. High radiation in Refueling Floor Exhaust Plenum Ch B. (continued)</p> <p>2. Power Failure</p> <p>3. Detector Failure</p>	<p>1F. IF __ FRVS did not start <u>OR</u> Secondary Containment fails to isolate <u>THEN REFER TO</u> T/S 3.6.5</p> <p>1G. <b>REQUEST</b> SM/CRS to initiate corrective action.</p> <p>2. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1BJ481, Bkr. 20.</p> <p>3A. <b>REFER TO</b> T/S 3.3.2 for Action Statement</p> <p>3B. <b>NOTIFY</b> SM/CRS of failure <u>AND</u> T/S Action Statement.</p>

**REFERENCES:** M-84-1, M-26-1, Sht. 1  
J-26-0, Sht. 2  
E6796-0

## ATTACHMENT A3

**NOMENCLATURE** RFLG FLR EXH RMS CH C **SETPOINT** HIGH 2 X 10<sup>-3</sup> uCi/cc

**DESCRIPTION** Refuel Floor Ventilation Exhaust radiation high Ch C **ORIGIN** RE-4856C

**AUTOMATIC ACTION:**

AUTO START of FRVS (2/3 logic), RBVS AUTO isolation (2/3 logic)

**OPERATOR ACTION:**

1. **NOTIFY** Radiation Protection of the alarm condition.
2. **EVACUATE** personnel from the Refuel Floor.
3. **ENSURE** HC.OP-EO.ZZ-0103/4(Q) has been entered.
4. **REFER TO** HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release, AND HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage.
5. **MONITOR** radiation level on Refuel Floor (RI-4856A,B,C).
6. **DETERMINE** source of activity AND ISOLATE IF possible.

CAUSE CORRECTIVE	ACTION
1. High radiation in Refueling Floor Exhaust Plenum Ch C.	1A. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Isolation Dampers are closed. 1B. <b>ENSURE</b> proper operation of FRVS. 1C. <b>ENSURE</b> all Reactor Building Supply <u>AND</u> Exhaust Fans are OFF. 1D. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage. 1E. <u>IF</u> activity is due to Fuel Pool inventory loss <b>REFER TO</b> HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.
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**REFERENCES:** M-84-1, M-26-1, Sht. 1  
 J-26-0, Sht. 2,  
 E6796-0

## ATTACHMENT A3

CAUSE CORRECTIVE	ACTION
<p>1. High radiation in Refueling Floor Exhaust Plenum Ch C. (continued)</p> <p>2. Power Failure</p> <p>3. Detector Failure</p>	<p>1F. IF __ FRVS did not start <u>OR</u> Secondary Containment fails to isolate <u>THEN REFER TO</u> T/S 3.6.5</p> <p>1G. <b>REQUEST</b> SM/CRS to initiate corrective action.</p> <p>2A. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1CJ481, Bkr. 20.</p> <p>3A. <b>REFER TO</b> T/S 3.3.2 for Action Statement</p> <p>3B. <b>NOTIFY</b> SM/CRS of failure <u>AND</u> T/S Action Statement.</p>

**REFERENCES:** M-84-1  
M-26-1, Sht. 1  
J-26-0, Sht. 2  
E6796-0

## ATTACHMENT A4

NEW FUEL

CRITICALITY

RAD HI

Window Location E6-A4**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. IF OPERATE failure condition of instruments is NOT cause of alarm,  
THEN **PERFORM** the following:
  - a. **SUSPEND** all Refueling operations  
OR DCS operations are ongoing on refuel floor.
  - b. IF alarm is high radiation (HIGH LED lit on 1SP-RI-4813, any channel)  
AND the radiation level is increasing,  
THEN **EVACUATE** the Refuel Floor via the PA System.
  - c. **DETERMINE** whether rad level was caused by radioactive equipment in the vicinity of the detector(s) (e.g. Dryer, Separator, etc.).

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
R9612	NEW FUEL CRITICALITY OR SPENT FUEL AREA CH A HIGH RAD/OPERATE FAILURE	Alarm will sound on Refuel floor
R9613	NEW FUEL CRITICALITY OR SPENT FUEL AREA CH B HIGH RAD/OPERATE FAILURE	Alarm will sound on Refuel floor
R9707	NEW FUEL CRITICALITY//Spent Fuel Storage Pool// HIGH RAD/OPERATE FAILURE	Alarm will sound on Refuel floor

**REFERENCES:** M-26-1, Sht. 2  
E-6796-0

Dwg. J-26-0, Sht. 3  
J-R 1000-0



## ATTACHMENT A4

NOMENCLATURE	DESCRIPTION	SETPOINT	ORIGIN
NEW FUEL CRITICALITY//Spent Fuel Storage Pool Radiation	High radiation in the vicinity of the Spent Fuel Storage Pool/OPERATE Failure	HIGH 13.8 mr/hr	1SD-RE-6607 (Channel 1)
NEW FUEL CRITICALITY CH A Radiation	High radiation in the vicinity of the New Fuel Storage Vault/OPERATE Failure	HIGH 6.54 mr/hr	1SP-RE-4813A (Channel 2)
NEW FUEL CRITICALITY CH B Radiation	High radiation in the vicinity of the New Fuel Storage Vault/OPERATE Failure	HIGH 6.54 mr/hr	1SP-RE-4813B (Channel 3)

**AUTOMATIC ACTION:**

Evacuation alarm will sound on Refuel Floor.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. IF alarm is high radiation (HIGH LED lit on 1SP-RI-4813, any channel)  
AND the radiation level is increasing,  
THEN **EVACUATE** the Refuel Floor via the PA System.

CAUSE CORRECTIVE	ACTION
1. High radiation in the vicinity of the Spent Fuel Storage Pool (Ch 1) New Fuel Storage Vault (Ch 1 or 2) (HIGH LED lit)	1A. <u>IF</u> moving radioactive equipment <u>OR</u> parts <b>SECURE</b> as soon as possible.  1B. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage.  1C. <u>IF</u> activity is due to Fuel Pool inventory loss <b>REFER TO</b> HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.
Continued next page	

**REFERENCES:** M-26-1, Sht. 2  
E-6796-0

J-26-0, Sht. 3  
J-R 1000-0

ATTACHMENT A4

CAUSE CORRECTIVE	ACTION
<p>1. High radiation in the vicinity of the Spent Fuel Storage Pool (Ch 1) New Fuel Storage Vault (Ch 1 or 2) (HIGH LED lit) (continued)</p> <p>2. Power      Failure</p> <p>3. Detector    Failure</p>	<p>1D. <b>NOTIFY</b> the SM/CRS to initiate corrective action.</p> <p>1E. <b>CONSIDER</b> isolation of the Reactor Building Ventilation System <u>AND</u> starting FRVS.</p> <p>1F. <b>PERFORM</b> any actions required IAW HCGS Emergency Plan</p> <p>2A. <b>CHECK</b> power supply</p> <p>3A. <b>NOTIFY</b> SM/CRS of failure</p>

**REFERENCES:**      M-26-1, Sht. 2  
E-6796-0

Dwg. J-26-0, Sht. 3  
J-R 1000-0

## ATTACHMENT A5

**RB EXH**  
**RADIATION**  
**ALARM/TRBL**

Window Location E6-A5

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **EVACUATE** the Reactor Building.
4. IF \_\_ alarm is high radiation (HIGH LED lit on 1SP-RI-4856A[B,C] Panel 10C604):
  - a. **ENSURE** FRVS (Filtration Recirculation, Ventilation System) is started.
  - b. **ENSURE** Reactor Building Ventilation is isolated.
5. **REFER TO** HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release.
6. **REFER TO** T/S 3.11.2.1, 3.11.2.2, 3.11.2.3 and 3.11.2.5. 3.
7. IF \_\_ alarm is downscale (OPERATE LED extinguished on 1SP-RI4856A[B,C] Panel 10C604) **ENSURE** power supply energized.
8. **REFER TO** HC.OP-EO.ZZ-0103(Q), Reactor Building Control, for possible entry condition.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
1SP-RI-4856A	REACTOR BLDG EXHAUST RMS CH A / CH 2 HIGH LED lit or OPERATE LED extinguished	Red pen (RR-4857A) on DRYWELL ATMOS POST ACCIDENT RAD MONITOR recorder records the rad level in Reactor Building Ventilation Exhaust (ALERT LED) FRVS AUTO STARTS (2/3) RBVS AUTO ISOLATES (2/3)

**REFERENCES:**

M-76-1 M-83-1 M-84-1

M-26-1, Sht. 1

E-0012-1, Sht.

1E-6796-0

J-R 1000-0

J-26-0, Sht. 2

J-102-0, Sht. 1 through 9

## ATTACHMENT A5

## INPUTS

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
1SP-RI-4856B	REACTOR BLDG EXHAUST RMS CH B / CH 2 HIGH LED lit <u>OR</u> downscale OPERATE LED extinguished)	FRVS AUTO STARTS (2/3) RBVS AUTO ISOLATES (2/3)
1SP-RI-4856C	REACTOR BLDG EXHAUST RMS CH C / CH 2 HIGH LED lit <u>OR</u> downscale OPERATE LED extinguished)	FRVS AUTO STARTS (2/3) RBVS AUTO ISOLATES (2/3)

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

## ATTACHMENT A5

		<b>ALARM POINT</b>	<u>1SP-RI-4856A</u>
<b>NOMENCLATURE</b>	REACTOR BLDG EXHAUST SETPOINT Radiation	<b>SETPOINT</b>	<u>HIGH 1.0E-3 uCi/cc</u>
<b>DESCRIPTION ORIGIN</b>	High radiation in Reactor Building Ventilation Exhaust Plenum (HIGH LED lit)		<u>1SP-RE-4857A</u>

**AUTOMATIC ACTION:**

IF radiation level reaches 1.0 E-3 uCi/cc (HIGH LED lit on 1SP-RI-4856A[B,C]) the Reactor Building Ventilation System will isolate  
AND FRVS will auto start.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **EVACUATE** the Reactor Building.
4. IF HIGH LED is lit on 1SP-RI-4856A(B,C) (at least two)  
**ENSURE** Reactor Building Ventilation System has isolated  
AND FRVS has started.
5. **REFER TO** HC.OP-AB.CONT-0004(Q); Radioactive Gaseous Release.
6. **DETERMINE** source of activity  
AND ISOLATE.

CAUSE CORRECTIVE	ACTION
1. High airborne radiation from one or more Reactor Building rooms, compartments or Drywell and Torus	1A. <b>ENSURE</b> proper operation of FRVS.  1B. <b>ENSURE</b> Reactor Building Ventilation System is isolated.  1C. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage.
Continued next page	

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

ATTACHMENT A5

ALARM POINT 1SP-RI-4856A

CAUSE CORRECTIVE	ACTION
<p>1. High airborne radiation from one or more Reactor Building rooms, compartments  <u>OR</u> Drywell and Torus. (continued)</p>	<p>1D. <b>DETERMINE</b> area(s) of high airborne radiation  <u>AND ISOLATE</u>.</p> <p>1E. <u>IF</u> activity is due to Fuel Pool inventory loss  <b>REFER TO</b> HC.OP-AB.COOL-0004(Q);  Fuel Pool Cooling.</p> <p>1F. <b>REFER TO</b> ODCM 3.11.2.1, 3.11.2.2,  3.11.2.3, &amp; 3.11.2.5.</p> <p>1G. <b>REQUEST</b> SM/CRS to initiate corrective  action.</p>

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0 J-26-0, Sht 2  
J-102-0, Sht. 1 through 9

**ATTACHMENT A5**

**NOMENCLATURE** REACTOR BLDG EXHAUST Radiation **SETPOINT** N/A

**DESCRIPTION ORIGIN** Reactor Building Ventilation Exhaust 1SP-RE-4857A  
Radiation Monitor downscale  
(OPERATE LED extinguished)

**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **ENSURE** power supply energized.

CAUSE CORRECTIVE	ACTION
1. Power failure	1A. <b>ENSURE</b> power supply energized from 120 VAC Distribution Panel 1AJ481 Bkr 1AJ481-20.
2. Detector failure	2A. <b>REFER TO</b> T/S 3.3.2 for Action Statement. 2B. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

## ATTACHMENT A5

ALARM POINT 1SP-RI-4856BNOMENCLATURE REACTOR BLDG EXHAUST  
RadiationSETPOINT HIGH 1.0E-3 uCi/ccDESCRIPTION High radiation in Reactor Building  
Ventilation Exhaust Plenum (HIGH LED lit)1SP-RE-4857B**AUTOMATIC ACTION:**

IF radiation level reaches 1.0 E-3 uCi/cc (HIGH LED lit on 1SP-RE-4856A[B,C]) the Reactor Building Ventilation System will isolate  
AND FRVS will auto start.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **EVACUATE** personnel from the Reactor Building.
4. IF HIGH LED is lit on 1SP-RE-4856A(B,C) (at least two)  
**ENSURE** Reactor Building Ventilation System has isolated  
AND FRVS has started.
5. **REFER TO** HC.OP-AB.CONT-0004(Q); Radioactive Gaseous Release.
6. **DETERMINE** source of activity  
AND ISOLATE.

CAUSE CORRECTIVE	ACTION
1. High airborne radiation from one or more Reactor Building rooms, compartments <u>OR</u> Drywell and Torus	1A. <b>ENSURE</b> proper operation of FRVS.  1B. <b>ENSURE</b> Reactor Building Ventilation System is isolated.  1C. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage.
Continued next page	

**REFERENCES:** M-76-1, M-83-1, M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0, J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9



## ATTACHMENT A5

ALARM POINT 1SP-RI-4856B

CAUSE CORRECTIVE	ACTION
1. High airborne radiation from one or more Reactor Building rooms, compartments <u>OR</u> Drywell and Torus (continued)	1D. <b>DETERMINE</b> area(s) of high, airborne radiation <u>AND ISOLATE.</u>  1E. <u>IF</u> activity is due to Fuel Pool inventory loss <b>REFER TO</b> HC.OP-AB.COOL-0004(Q); Fuel Pool Cooling.  1F. <b>REFER TO</b> ODCM 3.11.2.1, 3.11.2.2, 3.11.2.3, & 3.11.2.5.  1G. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** M-76-1 M-83-1 M-84-1  
 M-26-1, Sht. 1 E-0012-1, Sht. 1, E-6796-0  
 J-R 1000-0 J-26-0, Sht. 2  
 J-102-0, Sht. 1 through 9

**ATTACHMENT A5**

**NOMENCLATURE** REACTOR BLDG EXHAUST Radiation **SETPOINT** N/A

**DESCRIPTION ORIGIN** Reactor Building Ventilation Exhaust Radiation 1SP-RE-4857B  
Monitor downscale  
(OPERATE LED extinguished)

**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **ENSURE** power supply energized.
2. **NOTIFY** SM/CRS of alarm condition.
3. **NOTIFY** Radiation Protection of alarm condition.

CAUSE CORRECTIVE	ACTION
1. Power failure	1A. <b>ENSURE</b> power supply energized from 120 VAC Distribution Panel 1BJ481 Bkr 1BJ481-20.
2. Detector failure	2A. <b>REFER TO</b> T/S 3.3.2 for Action Statement. 2B. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 1 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

## ATTACHMENT A5

		<b>ALARM POINT</b> <u>1SP-RI-4856C</u>
<b>NOMENCLATURE</b>	REACTOR BLDG EXHAUST Radiation	<b>SETPOINT</b> <u>HIGH 1.0E-3 uCi/cc</u>
<b>DESCRIPTION</b>	<b>ORIGIN</b> High radiation in Reactor Building Ventilation Exhaust Plenum (HIGH LED lit)	<u>1SP-RE-4857C</u>

**AUTOMATIC ACTION:**

IF radiation level reaches 1.0E-3 uCi/cc (HIGH LED lit on 1SP-RE-4856A[B,C]) the Reactor Building Ventilation System will isolate  
AND FRVS will auto start.

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of alarm condition.
3. **EVACUATE** personnel from the Reactor Building.
4. IF HIGH LED is lit on 1SP-RE-4856A(B,C) (at least two)  
**ENSURE** Reactor Building Ventilation System has isolated  
AND FRVS has started.
5. **REFER TO** HC.OP-AB.CONT-0004(Q); Radioactive Gaseous Release.
6. **DETERMINE** source of activity  
AND ISOLATE.

CAUSE CORRECTIVE	ACTION
1. High airborne radiation from one or more Reactor Building rooms, compartments <u>OR</u> Drywell and Torus	1A. <b>ENSURE</b> proper operation of FRVS.  1B. <b>ENSURE</b> Reactor Building Ventilation System is isolated.  1C. <u>IF</u> refueling <u>OR</u> DCS operations are ongoing on refuel floor <b>REFER TO</b> HC.OP-AB.CONT-0005(Q); Irradiated Fuel Damage.
Continued next page	

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 2 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

ATTACHMENT A5

ALARM POINT 1SP-RI4856C

CAUSE CORRECTIVE	ACTION
<p>1. High airborne radiation from one or more Reactor Building rooms, compartments  <u>OR</u> Drywell and Torus (Continued)</p>	<p>1D. <b>DETERMINE</b> area(s) of high, airborne radiation  <u>AND ISOLATE.</u></p> <p>1E. <u>IF</u> activity is due to Fuel Pool inventory loss  <b>REFER TO</b> HC.OP-AB.COOL-0004(Q), Fuel Pool Cooling.</p> <p>1F. <b>REFER TO</b> ODCM 3.11.2.1, 3.11.2.2, 3.11.2.3, &amp; 3.11.2.5.</p> <p>1G. <b>REQUEST</b> SM/CRS to initiate corrective action.</p>

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 2 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

## ATTACHMENT A5

ALARM POINT 1SP-RI-4856CNOMENCLATURE REACTOR BLDG EXHAUST Radiation SETPOINT N/ADESCRIPTION Reactor Building Ventilation Exhaust Radiation ORIGIN 1SP-RE-4857C  
Monitor downscale  
(OPERATE LED extinguished)**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **ENSURE** power supply energized.
2. **NOTIFY** SM/CRS of alarm condition.
3. **NOTIFY** Radiation Protection of alarm condition.

CAUSE CORRECTIVE	ACTION
1. Power failure	1A. <b>ENSURE</b> power supply energized from 120VAC Distribution Panel 1CJ481 Bkr 19.
2. Detector failure	2A. <b>REFER TO</b> T/S 3.3.2 for Action Statement.
	2B. <b>REQUEST</b> SM/CRS initiate corrective action.

**REFERENCES:** M-76-1 M-83-1 M-84-1  
M-26-1, Sht. 1 E-0012-1, Sht. 2 E-6796-0  
J-R 1000-0 J-26-0, Sht. 2  
J-102-0, Sht. 1 through 9

## ATTACHMENT B1

**CONTROL****AREA HVAC****FAN MALF****Window Location** **E6-B1****OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** source of malfunction alarm.
3. **REFER TO** T/S 3.7.2.
4. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.

**INPUTS**

<b>Digital Point/ Indication</b>	<b>Nomenclature/Condition Automatic</b>	<b>Action</b>
CRS malfunction A(B)V403  Fan	Low flow High D/P Loss of bus power Loss of control power Fan auto start trip Low Supply air temp High Supply air temp Low Inlet pressure	Results in trip of the associated Control Room Ventilation System.
CREF malfunction A(B)V400  Fan	Low flow High D/P Loss of bus power Loss of control power Fan auto start trip	Results in possible trip of the associated Control Room Ventilation System.

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8

## ATTACHMENT B1

## INPUTS

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
CERS malfunction A(B)V407  Fan	Low flow Loss of bus power Loss of control power Low Supply air temp High Supply air temp trip Fan auto start Chill water pump trip	Results in trip of the associated fan and Control Room Chiller.
CRRA malfunction A(B)V415 Fan	Low flow Loss of bus power Loss of control power Ventilation trip Fan auto start	Results in possible trip of the associated Control Room System.

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8  
E-6790-0, Sht. 1

**ATTACHMENT B1**

<b>NOMENCLATURE</b>	<u>Control Area HVAC Fan Malfunction</u>	<b>SETPOINT</b>	<u>Multiple</u>
<b>DESCRIPTION</b>	<u>CRS (Control Room Supply Fans) malfunction A(B)VH403</u>	<b>ORIGIN</b>	<u>Various</u>

**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** which fan A(B)VH403 has malfunctioned  
AND the parameter involved.
3. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.
4. IF there are any adverse affects on the Control Room instrumentation,  
**IMPLEMENT** HC.OP-AB.HVAC-0002(Q); Control Room Environment.

CAUSE CORRECTIVE	ACTION
1. Low flow	1A. <b>OBSERVE</b> Control Room indication for flow (alarm setpoint < 18,500 scfm). (trip setpoint at 16,420 scfm)  1B. <b>DETERMINE</b> <u>IF</u> proper valve lineup exists for malfunctioning fan.
2. High D/P	2A. <b>OBSERVE</b> Control Room indication for D/P (alarm setpoint 1.8 inches water gauge).
Continued next page	

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8  
E-6790-0, Rev. 7



ATTACHMENT B1

CAUSE CORRECTIVE	ACTION
3. Loss of bus/control power	3A. <b>DISPATCH</b> an EO to check A(B)V403 Brkr 52-471062 (52-481072).
4. Fan auto start	4A. Fans auto start on a LOCA <u>OR</u> LOP.
5. Fan trip	5A. <b>DETERMINE</b> <u>IF</u> fan has tripped <u>AND</u> <b>INITIATE</b> corrective action.
6. Supply air High or Low Temp. (1GKTSHL-9589A(B))	6A. <b>OBSERVE</b> Control Room indication for proper Chill Water flow (supply air temp setpoint High 76°F – Low 52°F)
7. Low inlet pressure PDSL-9587A(B) (15 second T.D.)	7A. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8  
E-6790-0, Rev. 7

**ATTACHMENT B1**

**NOMENCLATURE** Control Area HVAC Fan Malfunction **SETPOINT** Multiple

**DESCRIPTION** Control Room Emergency Filtration A(B)V400 trouble **ORIGIN** Various

**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** which fan A(B)V400 has malfunctioned AND the parameter involved.
3. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.
4. IF there are any adverse affects on the Control Room instrumentation, **IMPLEMENT** HC.OP-AB.HVAC-0002(Q); Control Room Environment.

CAUSE CORRECTIVE	ACTION
1. Low flow	1A. <b>OBSERVE</b> Control Room indication to <u>AND DETERMINE</u> <u>IF</u> low flow light is illuminated (alarm setpoint < 4,000 scfm, trip setpoint 3,380 scfm).  1B. <b>DETERMINE</b> <u>IF</u> proper valve lineup exists for malfunctioning fan.
Continued next page	

**REFERENCES:** J-105-0, Sht. 8 E-6790-0  
 H-89-0, Sht. 1 CD-181X  
 FSAR 6.5.1.1.2

ATTACHMENT B1

CAUSE CORRECTIVE	ACTION
<p>2. High D/P</p> <p>3. Loss of bus/control power [CD-181X]</p> <p>4. Auto start or trip of fan</p>	<p>2A. <b>OBSERVE</b> Control Room indication for filter D/P (alarm setpoint 3.5 inches water gauge).</p> <p>3A. <b>DISPATCH</b> an EO to check A(B)V400 Brkr 52-431035(52-441035).</p> <p>4A. A(B)V400 auto start on hi hi radiation/ Control Room Ventilation isolation/ LOCA/LOP. <u>IF</u> a fan trips or auto starts <b>REFER TO</b> Technical Specifications 3/4.7.2. Manual operation is required to start the standby fan.</p> <p>4B. <b>REQUEST</b> SM/CRS to initiate corrective action.</p>

**REFERENCES:** J-105-0, Sht. 8  
E-6790-0  
H-89-0, Sht. 1  
CD-181X  
FSAR 6.5.1.1.2

## ATTACHMENT B1

<b>NOMENCLATURE</b>	<u>Control Area HVAC Fan Malfunction</u>	<b>SETPOINT</b>	<u>Multiple</u>
<b>DESCRIPTION ORIGIN</b>	<u>CONCRETS A(B)V407 malfunction (Control Room Equipment Room Supply Fans)</u>		<u>Various</u>

**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** which fan A(B)V407 has malfunctioned  
AND the parameter involved.
3. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.
4. IF there are any adverse affects on the Control Room instrumentation,  
**IMPLEMENT** HC.OP-AB.HVAC-0002(Q); Control Room Environment.

CAUSE CORRECTIVE	ACTION
1. Low flow	1A. <b>OBSERVE</b> Control Room indication <u>AND</u> <b>DETERMINE</b> <u>IF</u> low flow light is illuminated (alarm setpoint 49,640 scfm, trip setpoint 49,600 scfm).  1B. <b>DETERMINE</b> <u>IF</u> proper valve lineup exists for malfunctioning fan.
Continued next page	

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8  
E-6790-0

ATTACHMENT B1

CAUSE CORRECTIVE	ACTION
2. Loss of bus/control power	2A. <b>DISPATCH</b> an EO to check A(B)V407 Brkr 52-47013(52-48013).
3. Supply air temp > or < SPT	3A. <b>OBSERVE</b> Control Room indication <u>AND DETERMINE</u> <u>IF</u> hi/low supply air light is illuminated (alarm setpoint High 68°F - Low 54°F).
	3B. <b>OBSERVE</b> Chill Water System <u>AND DETERMINE</u> if a malfunction exists.
4. Fan trip	4A. <b>DETERMINE</b> <u>IF</u> fan has tripped <u>AND INITIATE</u> corrective action.
5. Fan auto start	5A. Fans auto start on a LOCA <u>OR</u> LOP.
6. Chill Water Pump trip	6A. <b>DISPATCH</b> operator to determine cause of malfunction of Chill Water System/Pump.
	6B. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** H-89-0, Sht. 1  
J-105-0, Sht. 8  
E-6790-0

**ATTACHMENT B1****NOMENCLATURE** Control Area HVAC Fan Malfunction**SETPOINT** Multiple**DESCRIPTION ORIGIN** Control Room A(B)V415 malfunction  
(Control Room Return Air Fans)Various**AUTOMATIC ACTION:**

None

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** which fan malfunctioned A(B)V415  
AND the parameter involved.
3. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.
4. IF there are any adverse affects on the Control Room instrumentation,  
**IMPLEMENT** HC.OP-AB.HVAC-0002(Q), Control Room Environment.

CAUSE CORRECTIVE	ACTION
1. Low flow	1A. <b>OBSERVE</b> Control Room indication <u>AND DETERMINE</u> <u>IF</u> low flow light is illuminated (alarm setpoint 18,500 - 20,350 scfm, trip at 10,125 scfm).  1B. <b>DETERMINE</b> <u>IF</u> proper valve lineup exists for malfunctioning fan.
Continued next page	

**REFERENCES:** J-105-0, Sht. 8  
 H-89-0, Sht. 1  
 E-6790-0

ATTACHMENT B1

CAUSE CORRECTIVE	ACTION
2. Loss of bus/control power	2A. <b>DISPATCH</b> an EO to check A(B)V415 Brkr 52-431062(52-441062).
3. Fan trip	3A. <b>DETERMINE</b> <u>IF</u> fan has tripped <u>AND</u> <b>INITIATE</b> corrective action.
4. Fan auto start	4A. Fans auto start on a LOCA <u>OR</u> LOP.
	4B. <b>REQUEST</b> SM/CRS to initiate corrective action.

**REFERENCES:** J-105-0, Sht. 8  
H-89-0, Sht. 1  
E-6790-0

## ATTACHMENT B2

**DRYWELL**

**PURGE ISLN**

**OVERRIDE**

Window Location E6-B2

**OPERATOR ACTION:**

1. **DESELECT** ISOLATION OVERRIDE Switch in Control Room.

This applies only

IF the operator does not wish to override the Hi Hi radiation signal for the Reactor Building and/or Refuel Floor Ventilation Exhaust and/or Level 2 isolation signal(s).

2. **NOTIFY** SM/CRS of alarm condition.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
Amber isolation override light illuminated in control room	N/A	Overrides isolation signals on: a. Hi Hi radiation in Reactor Bldg. Exhaust Plenum b. Hi Hi radiation in Refueling Floor Ventilation Exhaust Plenum c. Rx Wtr Level 2

**REFERENCES:** E-6787-0  
H-83-0, Sht. 1



## ATTACHMENT B5

<p style="text-align: center;"><b>RB</b></p> <p style="text-align: center;"><b>PRESSURE</b></p> <p style="text-align: center;"><b>HI/LO</b></p>
---

Window Location E6-B5**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. IF Reactor Building pressure is low  
**START** the standby fan (AV206 or BV206).
3. **REFER TO** HC.OP-AB.CONT-0003(Q), Reactor Building.
4. **DISPATCH** operator to determine cause of condition  
AND take appropriate action.
5. IF sufficient negative pressure cannot be maintained in the Reactor Building  
**REFER TO** T/S 3.6.5.
6. **REFER TO** HC.OP-EO.ZZ-0103(Q), Reactor Building Control, for possible entry condition.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5405	BV206 RUNNING REAC BLDG PRESS HI/LO	Alarm only
D5406	AV206 RUNNING REAC BLDG PRESS HI/LO	Alarm only

**REFERENCES:** E-6787-0  
H-84-0, Sht. 1

## ATTACHMENT C1

CONT AREA

HVAC EXH

PNL 1EC485

Window Location E6-C1**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** operator to Remote Control Panel EC485 to determine cause of alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D3170	CONT AREA EXH HVAC EC485 TRBL	BV402 auto start on low flow signal from AV402  AV402 auto start on low flow signal from BV402  A(B)V402 trip on a CREF initiation (approx. 20 sec. T.D.)

**REFERENCES:** H-89-0, Sht. 1  
 E-6790-0  
 CD-181X  
 FSAR 6.5.1.1.2

## ATTACHMENT C2

DIESEL AREA

HVAC PANEL

1EC483

Window Location E6-C2**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** an operator to local Panel 1EC483 to determine cause of alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5182	DSL AREA HVAC PNL EC483	Alarm only for all except smoke detection. <u>IF</u> smoke is detected in the Wing Area Exhaust duct by Smoke Detectors XSH-9022, XSH-9029 <u>OR</u> XSH-9032 then fans1A(B)V414 <u>AND</u> 1A(B)V304 auto trip.
D5226	DSL AREA BTRY RM 5545 FLOW	Alarm only
D5227	DSL AREA BTRY RM 5541 FLOW	Alarm only
D5228	DSL AREA BTRY RM 5543 FLOW	Alarm only
D5229	DSL AREA BTRY RM 5539 FLOW	Alarm only

**REFERENCES:** E-6790-0  
M-89-1

H-88-0, Sht. 1  
M-78-1

H-89-0, Sht. 1

## ATTACHMENT C5

RBVS &amp; WING

AREA HVAC

PNL 10C382

Window Location E6-C5**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **REFER TO** HC.OP-AB.CONT-0003(Q), Reactor Building.
3. **DISPATCH** an operator to the Remote Control Panel 10C382 to determine cause of alarm.
4. IF a low flow condition exists  
**ENSURE** standby fan(s) auto start to maintain a negative pressure in Secondary Containment.
5. **REFER TO** T/S 3.6.5.2.

**NOTE**

The ORANGE DOT indicates the MCR annunciator will clear when the associated local panel annunciator is acknowledged. Thus with the MCR annunciator clear, the local panel may or may not be in alarm. If the local panel is not acknowledged, the MCR annunciator will be lit and will not re-alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D3960	RBVS EXH RTM PNL C382	Low flow condition on operating fan results in fan trip <u>AND</u> auto start of standby fan(s).
D3961	RBVS SUPPLY RTM PNL C382	Low flow condition on operating fan results in fan trip <u>AND</u> auto start of standby fan(s).
D3198	WING AREA SUPL HVAC 0C382	Alarm only

**REFERENCES:** E-6787-0 CD-443A SER  
H-83-0, Sht. 1 H-84-0, Sht. 1  
H-89-0, Sht. 8; Sht. 13

060-81

ATTACHMENT D1

CABLE TRAY

AREA HVAC

PNL 00C383

Window Location E6-D1

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** a Radwaste Operator to the Remote Control Panel 00C383 to determine cause of alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D2385	UNT CLRS/HTRS RCP-0C383 TRBL	<u>WITH</u> room temperature > 90°F <u>AND</u> fan in auto, fan auto starts.

**REFERENCES:** H-92-0, Sht. 1  
E-6790-0

## ATTACHMENT D2

DIESEL AREA

HVAC 1E PNL

1EC486

Window Location E6-D2**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** an operator to Panel 1EC486 to determine cause of alarm.

**NOTE**

For battery room low flow alarms resulting from planned maintenance, an entry into HC.OP-AB.HVAC-0001 is not required. In this situation guidance in HC.OP-GP.ZZ-0010(Q) should be followed.

3. **REFER TO** HC.OP-AB.HVAC-0001(Q), HVAC.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5742	DIESEL 1E PANEL RM HVAC EC486	Alarm only
D5234	DSL AREA BTRY RM 5614 FLOW	Alarm only
D5235	DSL AREA BTRY RM 5609 FLOW	Alarm only
D5236	DSL AREA BTRY RM 5626 FLOW	Alarm only
D5237	DSL AREA BTRY RM 5627 FLOW	Alarm only

**REFERENCES:** E-6790-0  
H-88-0, Sht. 1

## ATTACHMENT D5

<p style="text-align: center;"><b>FRVS</b></p> <p style="text-align: center;"><b>VENT FAN</b></p> <p style="text-align: center;"><b>MALFUNCTION</b></p>
---

Window Location E6-D5**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Radiation Protection of fan auto start.
3. **REFER TO** HC.OP-AB.CONT-0003(Q), Reactor Building.
4. **DETERMINE**  
IF an auto start has occurred on the standby fan.
5. **REFER TO** Technical Specification 3/4.6.5.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5407	FRVS VENT FAN BV206 TROUBLE	Standby fan auto starts on low flow <u>WITH</u> an initiation signal (level 2, hi hi rad in Reactor Bldg <u>OR</u> Refuel Floor; LOCA and LOP)
D5408	FRVS VENT FAN AV206 TROUBLE	Standby fan auto starts on low flow <u>WITH</u> an initiation signal (level 2, hi hi rad in Reactor Bldg <u>OR</u> Refuel Floor; LOCA and LOP)

**REFERENCES:** H-84-0, Sht. 1  
E-6787-0

ATTACHMENT E1

<p><b>SVCE AREA</b></p> <p><b>SUPPLY</b></p> <p><b>PNL 00C181</b></p>
---

Window Location E6-E1

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** operator to Remote Control Panel 00C181 to determine cause of alarm.
3. IF a fire alarm is present  
**DISPATCH** Site Protection.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5196	SERVICE AREA SUPPLY HVAC PNL 00C181 TROUBLE	Alarm only for all except smoke detection. IF smoke is detected by Smoke Detectors XSH-9022 OR XSH-9023 in the Service Area Supply System return air duct THEN the SAS System Fan 0AVH131 (0BVH131) will automatically trip.

**REFERENCES:** H-93-0, Sht. 1  
M-79-0, Sht. 1  
M-93-0, Sht. 1  
E-6790-0



ATTACHMENT E2

**RADWASTE &**

**SAE HVAC**

**PNL 00C381**

Window Location E6-E2

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** Radwaste Operator to Remote Control Panel 00C381 to determine cause of alarm.

**NOTE**

The ORANGE DOT indicates the MCR annunciator will clear when the associated local panel annunciator is acknowledged. Thus with the MCR annunciator clear, the local panel may or may not be in alarm. IF the local panel is not acknowledged, the MCR annunciator will be lit and will not re-alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5191	RDWST SUPPLY SYS RCP- 00C381 TRBL	Alarm only for all except Smoke Detection. <u>IF</u> smoke is detected in Exhaust air duct by Smoke Detector XSH-9018 <u>THEN</u> Fan VA308(0BV308) auto trips.

**REFERENCES:** E-6790-0 H-92-0, Sht. 1  
H-93-0, Sht. 1 M-93-0, Sht. 1  
M-79-0, Sht. 1

## ATTACHMENT E3

CHEM LAB

EXH HVAC

PNL 00C392

Window Location E6-E3**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **NOTIFY** Chemistry Hot Lab  
IF required.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5198	CHEMISTRY LAB EXH HVAC	<u>IF</u> a low flow condition exists on 0A(B)V307 the standby fan auto starts.

**REFERENCES:** E-6790-0  
H-93-0, Sht. 1

## ATTACHMENT E5

<p style="text-align: center;"><b>FRVS</b></p> <p style="text-align: center;"><b>RECIRC FAN</b></p> <p style="text-align: center;"><b>TROUBLE</b></p>
---

Window Location E6-E5**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DETERMINE** which fan initiated the trouble alarm.
3. **DISPATCH** operator to determine the specific cause of the malfunction.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5474	FRVS RECIRC MOT AV213 & EV213	<u>I</u> F low flow initiated the trouble alarm (AV-213), E(F)V213 auto starts.
D5451	FRVS RECIRC MOT BV213 & FV213	<u>I</u> F low flow initiated the trouble alarm (BV-213), E(F)V213 auto starts.
D5475	FRVS RECIRC MOT CV213	<u>I</u> F low flow initiated the trouble alarm (CV-213), E(F)V213 auto starts.
D5476	FRVS RECIRC MOT DV213	<u>I</u> F low flow initiated the trouble alarm (DV-213), E(F)V213 auto starts.

**REFERENCES:** H-83-0, Sht. 1  
E-6787-0  
J-105-0, Sht. 8

## ATTACHMENT F1

SOLID RADW

SUPPLY/EXH

PNL 00C380

Window Location E6-F1**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** Radwaste operator to Panel 00C380 to determine cause of the alarm.
3. IF a fire alarm is present  
**DISPATCH** Site Protection.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5744	SOLID RDWST HVAC RCP0C380 TRBL	Alarm only for all except smoke detection. IF smoke is detected in Solid Radwaste Area exhaust air duct by Smoke Detector XSH-9024 <u>OR</u> XSH-9028, <u>THEN</u> Fan 0A(B)V318 is auto trips.

**REFERENCES:** E-6790-0  
H-92-0, Sht. 1  
M-91-0, Sht. 3  
M-92-0, Sht. 2

## ATTACHMENT F2

RADWASTE TK

FILTER HVAC

PNL 00C385

Window Location E6-F2**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** Radwaste Operator to Panel 00C385 to determine cause of the alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5192	RDWST TK FLTR SY RCP only 0C385 TRBL	Alarm

**REFERENCES:** E-6790-0  
H-92-0, Sht. 1

ATTACHMENT F3

AUX BOILER

BLDG HVAC

PNL 00C591

Window Location E6-F3

**OPERATOR ACTION:**

1. **NOTIFY** SM/CRS of alarm condition.
2. **DISPATCH** operator to Panel 00C591 to determine cause of the alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D4169	BLR SUBSTA WTR PRETREAT HVAC	Alarm only

**REFERENCES:** H-95-0, Sht. 1  
E-6792-0

ATTACHMENT F4

ASPH STOR

BLDG HVAC

PNL 00C580

Window Location E6-F4

**OPERATOR ACTION:**

**NOTIFY** Radwaste operator of Local Panel 00C580 alarm.

**INPUTS**

Digital Point/ Indication	Nomenclature/Condition Automatic	Action
D5766	ASPH STOR BLDG HVAC0C580 TRBL	Alarm Only

**REFERENCES:** H-95-0, Sht. 1