

E.J. Mrocza  
Form Approved by Station Superintendent

8-25-83  
Effective Date

STATION PROCEDURE COVER SHEET

A. IDENTIFICATION

Number EOP 2525

Rev. 0

Title STANDARD POST TRIP ACTIONS

Prepared By G. Bischoff

B. REVIEW

I have reviewed the above procedure and have found it to be satisfactory.

<u>TITLE</u>	<u>SIGNATURE</u>	<u>DATE</u>
DEPARTMENT HEAD	<u>John S. Keenan</u>	<u>2/24/84</u>
<u>Operations Engineer</u>	<u>Robert Beebe</u>	<u>2-9-84</u>

C. UNREVIEWED SAFETY QUESTION EVALUATION DOCUMENTATION REQUIRED:

(Significant change in procedure method or scope  
as described in FSAR)  
(If yes, document in PORC/SORC meeting minutes)

YES [ ] NO [☒]

ENVIRONMENTAL IMPACT

(Adverse environmental impact)  
(If yes, document in PORC/SORC meeting minutes)

YES [ ] NO [☒]

D. PROCEDURE REQUIRES PORC/SORC REVIEW

YES [☒] NO [ ]

E. PORC/SORC APPROVAL

PORC/SORC Meeting Number 2-83-240

F. APPROVAL AND IMPLEMENTATION

The attached procedure is hereby approved, and effective on the date below:

John S. Keenan  
Station/Service/Unit Superintendent

1-7-84  
Effective Date

SF-301  
Rev. 6

STANDARD POST TRIP ACTIONS

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Eff. Rev.

0

## STANDARD POST TRIP ACTIONS

### 1. PURPOSE

To provide the immediate actions which must be accomplished after an automatic or manual reactor trip. These actions are necessary to ensure the plant response results in stable safe conditions or that the plant is configured to respond to a continuing emergency. This is the entry procedure for the EOP System.

### 2. ENTRY CONDITIONS

Any symptom(s) of a Reactor Trip.

- a. Reactor trip alarm (C04)
- b. CEA Bottom Lights (C04)
- c. Rapid decrease in reactor power (C04)
- d. Reactor trip circuit breakers open (C04/RPS)

## STANDARD POST TRIP ACTIONS

### 3. IMMEDIATE OPERATOR ACTIONS

#### NOTE

Steps 3.1 through 3.7 should be performed by the Primary Plant Operator. Steps 3.8 through 3.21 should be performed by the Secondary Plant Operator. Steps 3.22 through 3.25 should be performed by the SS/SCO. The three designated operators perform their assigned actions in parallel.

#### PRIMARY PLANT OPERATOR

##### Instructions

##### Contingency Actions

#### NOTE

Boration times when more than 1 CEA not fully inserted are:

- a. 12 min/CEA - 3 chg pumps
- b. 18 min/CEA - 2 chg pumps
- c. 36 min/CEA - 1 chg pump

- \_\_\_\_ 3.1 Ensure the reactor has tripped by depressing the four "Reactor Manual Trip" pushbuttons (C04), Then
- a. Verify reactor power decreasing (C04)
  - and
  - b. Verify no more than 1 CEA not inserted (C04)

- 3.1
- a. Open CEDM MG set feeder breakers (C04)
  - or
  - b. Borate by the following
    - i. Verify BAST level greater than 10% (C02)
    - ii. Open boric acid pump discharge to charging pump, 2-CH-514 (C02)
    - iii. Start both boric acid pumps (C02)

## Instructions

## Contingency Actions

- iv. Close boric acid pump recirculation valves 2-CH-510 and 2-CH-511 (C02)
- v. Start all available charging pumps (C02)
- vi. If necessary, refer to Functional Recovery of Reactivity Control, EOP 2540A, Step 3.3, for additional boration paths.
- vii. When time permits, Then complete OPS Form 2208-13, Shutdown Margin

### NOTE

Pressurizer level will normally decrease to 25-30% after reactor trip and will take approximately 30 minutes to regain 35-45% level.

### 3.2 Verify RCS Inventory Control by the following

- a. Pressurizer level between 20 and 65% (C03)
- b. Pressurizer level trending to 35-45% (C03)
- c. RCS greater than 20°F sub-cooled (RC05E)

### 3.2

- a. Verify that Tavg is not decreasing below 525°F (C04).
- and
- b. Manually control charging and letdown (C02)



## Instructions

## Contingency Actions

### NOTE

Pressurizer pressure will normally decrease to 2000-2200 psia after reactor trip and take approximately 10 minutes to regain 2225-2300 psia.

#### 3.3 Verify RCS pressure control by

- a. Pressurizer pressure  
1900 - 2350 psia (C03)
- b. Pressurizer pressure trending  
to 2225 - 2300 psia (C03)
- c. PORVs and pressurizer  
safeties not open by
  - i. Normal quench tank  
level, pressure and  
temperatures (C03)  
and
  - ii. No acoustic monitor  
alarms (C02)

#### 3.3 Do the following

- a. Manually control heaters  
and spray to return  
pressure to 2225-2300  
psia (C03)
- b. If pressurizer pressure  
decreases to 1600 psia  
(C03), Then
  - i. Verify or manually  
initiate SIAS, CIAS,  
and EBFAS (C01/C01X)  
and
  - ii. Stop all RCPS (C03)
- c. If either PORV is open,  
Then
  - i. Verify RCS pressure  
less than 2300 psia  
(C03)  
and
  - ii. Close the block  
valve of the open  
PORV (C03)
- d. Note abnormal conditions  
on Break Identification  
Chart, Figure 4.1, to  
assist in event  
diagnosis

## Instructions

## Contingency Actions

### NOTE

Verification of natural circulation flow is accomplished in EOP Recovery Procedures.

- |  |   |
|--|---|
| <p>_____ 3.4 <u>Verify</u> at least one RCP operating in each loop (C03)</p> <p>_____ 3.5 <u>Verify</u> normal containment conditions by the following</p> <ul style="list-style-type: none"><li>a. Containment pressure less than 2 psig (C01)</li><li>b. Containment temperature less than 120°F (computer point K570)</li><li>c. No increase in containment radiation monitors (RC14 and C101)</li><li>d. No unexplained increase in containment sump level (C06)</li></ul> | <p>3.4 <u>If</u> an electrical emergency is diagnosed, <u>Then</u></p> <ul style="list-style-type: none"><li>a. Complete Standard Post Trip Actions<br/><u>and</u></li><li>b. Consider use of Electrical Emergency, EOP 2528</li></ul> <p>3.5 <u>Do</u> the following</p> <ul style="list-style-type: none"><li>a. <u>If</u> containment pressure increases to 5 psig (C01), <u>Then</u> verify or manually initiate SIAS, CIAS, and EBFAS (C01/C01X)</li><li>b. <u>If</u> containment pressure increases to 27 psig (C01), <u>Then</u> verify or manually initiate CSAS (C01/C01X)</li><li>c. Note abnormal conditions on Break Identification Chart, Figure 4.1, to assist in event diagnosis</li></ul> |
|--|---|

### Instructions

- \_\_\_\_ 3.6 Verify Steam Jet Air  
Ejector and Blowdown Radiation  
monitors not alarming (RC14)
- \_\_\_\_ 3.7 Verify plant Radiation monitors  
outside containment not increasing  
(RC14, C06, C101)

### Contingency Actions

- 3.6
- a. Note abnormal conditions  
on Break Identification  
Chart, Figure 4.1  
and
  - b. If Steam Generator Tube  
Rupture is diagnosed, Then
    - i. Complete Standard  
Post Trip Actions  
and
    - ii. Consider use of Steam  
Generator Tube Rupture,  
EOP 2534
- 3.7 If radiation levels increasing,  
Then investigate for breaks  
outside containment (local)



## SECONDARY PLANT OPERATOR

### Instructions

- \_\_\_\_\_ 3.8 Ensure the turbine has tripped by depressing the turbine "Trip" pushbutton (EHC insert panel), Then do the following
- Verify all steam admission valves closed (C07)  
and
  - Verify generator megawatts indicate zero (C07)
- \_\_\_\_\_ 3.9 Ensure the generator ACBs are open by simultaneously depressing both "8T & 9T Emerg Trip" push-buttons (C07), Then verify generator ACBs indicate open (C07)
- \_\_\_\_\_ 3.10 Verify the transfer of 6.9 KV and 4.16 KV buses to the RSST by
- NSST breakers open (C08)  
and
  - RSST breakers closed (C08)

### Contingency Actions

- 3.8 If generator megawatts not zero, Then
- Close MSIVs (C05)  
and
  - Verify MSIV bypass valves closed (C05)
- 3.9 a. Manually open ACBs at Remote Switchgear Terminal (GE/TAC, Unit #1)  
or
- Direct Convex to manually trip ACBs by the following:
    - Open 15G-8T-2
    - Open 15G-7T-2
    - Open 348-15G-5
    - Close 15G-8T-2
    - Open 15G-9T-2
- 3.10 Verify diesel generators start (or manually start) and energize buses 24C and 24D (C08), Then
- Complete Standard Post Trip Actions  
and
  - Consider use of Electrical Emergency, EOP 2528

## Instructions

## Contingency Actions

### NOTE

Loss of 125 VDC bus will result in extensive loss of plant instrumentation.

\_\_\_\_ 3.11 Verify 125 VDC load centers, 201A and 201B, are energized (C08)

3.11

- a. Complete Standard Post Trip Actions  
and
- b. Consider use of Electrical Emergency, EOP 2528

\_\_\_\_ 3.12 Stop all but one condensate pump by placing switches in "pull to lock". (C05)

3.12 Continue with this procedure

\_\_\_\_ 3.13 Open heater drain pump subcooling valve, 2-HD-106 (C05)

3.13 Continue with this procedure

\_\_\_\_ 3.14 Stop both heater drain pumps (C05)

3.14 Continue with this procedure

### Instructions

- 3.15 Establish proper main feedwater system configuration
- a. One main feed pump operating (C05)
  - b. Speed control at minimum (C05)
  - c. Main feed regulating valves closed (C05)
  - d. Feed regulating valve bypass valves open to 50-60% (C05)
  - e. Feed flow decreasing (C05)
  - f. Main feed pump discharge pressure 50-150 psi greater than steam generator pressure (C05)

### Contingency Actions

- 3.15 Do the following
- a. If main feed regulating valves fail to close,  
Then
    - i. Manually close main feed regulating valves or blocking valves and control feedwater flow using bypass (C05)  
or
    - ii. Trip the main feed-pumps (C05)
  - b. If main feed water is unavailable, Then manually start electric driven (preferred) or steam driven auxiliary feed pump (C05)
  - c. If high steam generator trip was initiated, Then open feed regulating valve bypass valves when high level trip clears (C05)
  - d. If all feedwater flow is lost, Then
    - i. Complete Standard Post Trip actions  
and
    - ii. Consider use of Loss of All Feedwater, EOP 2537

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CAUTION

Do not overreact to low steam generator level. Add feed-water slowly to avoid

- a. excessive pressurizer level and pressure transient
  - b. excessive cooldown rate
  - c. overfilling steam generators
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NOTES

- 1. Steam generator level may go below 0% after trip, and take several minutes to regain level in the indicating range.
- 2. If steam generator level falls below 12%, auxiliary feedwater automatically initiates and will start pumps and commence feeding steam generators, after a 3 minute and 25 second time delay.

\_\_\_\_ 3.16 Verify steam generator level  
trending to 70-80% (C05)

3.16

- a. Adjust main or auxiliary feed flow to return level to 70-80% (C05)  
or
- b. If automatic auxiliary feed-water initiated, Then do the following
  - i. Verify steam generator level greater than 12% (C05)
  - ii. Position auxiliary feed-water override hand-switches to "Pull to Lock" (C05)
  - iii. Manually control auxiliary feed regulating valves to return level to 70-80% (C05)

## Instructions

- 3.17 Verify proper steam generator heat removal by the following
- a. When steam generator pressure is less than 950 psia, Then verify steam generator safeties are closed (local)
  - b. When steam generator pressure is less than atmospheric dump valve controller setpoint, Then verify atmospheric dump valves closed (C05)
  - c. Steam dump and bypass valves functioning to
    - i. Return Tavg to 530-535°F (C04/5)
    - and
    - ii. Control steam generator pressure at 880-920 psia (C05)

## Contingency Actions

- 3.17 Do the following
- a. If condenser vacuum (back pres.) is not 0-15 in. Hg abs., Then
    - i. Operate atmospheric dump valves to return Tavg to 530-535°F (C04) and
    - ii. Refer to Loss of Condenser Vacuum, AOP 2574
  - b. If steam generator pressure decreases to 850 psia, Then do the following
    - i. Verify atmospheric dump valves closed (or manually close) (C05)
    - ii. Verify steam dump and bypass valves closed (or manually close) (C05)
    - iii. Verify steam seal pressure 2-6 psig (or manually isolate) (C05)
    - iv. Isolate blowdown (C05)
    - v. Start mechanical vacuum pumps (local)
    - vi. Secure steam jet air ejectors (local)
    - vii. Switch to electric driven auxiliary feed pumps (C05) and secure main feed pump turbine (C05)



## Instructions

## Contingency Actions

- viii. Dispatch operator  
outside look for  
steam discharge  
(local)
- c. If steam generator pressure decreases below 800 psia, Then close MSIVs.
- d. If either steam generator pressure falls to 500 psia, Then verify MSI or manually initiate MSI, by the following (C05)
  - i. Verify MSIVs closed
  - ii. Verify MSIV bypasses closed
  - iii. Close main and auxiliary feedwater air assisted check valves
  - iv. Close both main feedwater regulating valves
  - v. Trip both main feedwater pumps
  - vi. Close main steam low point drain valves
  - vii. Close main feedwater regulating valves bypass valves
- e. Note abnormal conditons on Break Identification Chart, Figure 4.1, to assist in event diagnosis

### Instructions

- \_\_\_\_ 3.18 Verify instrument air header pressure greater than 90 psig (C06)
- \_\_\_\_ 3.19 Verify two RBCCW pumps operating (C06)
- \_\_\_\_ 3.20 Verify two service water pumps operating (C06)
- \_\_\_\_ 3.21 Verify steam seal pressure 2-6 psig (C07)

### Contingency Actions

- 3.18
- a. Complete Standard Post Trip actions  
and
  - b. Refer to Loss of Instrument Air, AOP 2563
- 3.19
- a. Complete Standard Post Trip Actions  
and
  - b. Refer to Loss of RBCCW, AOP 2564
- 3.20
- a. Complete Standard Post Trip Actions  
and
  - b. Refer to Loss of Service Water, AOP 2565
- 3.21 Manually control steam seal feed valve, 2-MS-182B, or steam seal feed bypass valve, 2-MS-182A, to return pressure to 2-6 psig (C07)

InstructionsContingency Actions

\_\_\_\_\_ 3.22 Notify personnel

a. SS/SCO

and

b. Duty Officer

3.22 Continue with this procedure

\_\_\_\_\_ 3.23 Notify CONVEX of status of plant

3.23 Continue with this procedure

\_\_\_\_\_ 3.24 Refer to Incident Assessment  
and Classification, Unit 2,  
OP 2501, and Communications,  
Outside Assistance and  
Response, ACP 1.07.

3.24 Continue with this procedure

\_\_\_\_\_ 3.25 If plant responding as expected  
after reactor trip, Then go to  
Reactor Trip Recovery, EOP 2526

3.25

- a. If any break is sus-  
pected, Then
  - i. Refer to Break Identi-  
fication Chart, Figure  
4.1 to assist in  
diagnosis  
and
  - ii. Go to appropriate proc-  
edure  
or
- b. If diagnosis of one event  
is not apparent, Then go  
to Functional Recovery,  
EOP 2540

4. FIGURES

4.1 Break Identification Chart

- Final -

Figure 4.1

# BREAK IDENTIFICATION CHART

