

50-302

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NO ACKNOWLEDGEMENT REQUIRED

A045



**FLORIDA POWER**  
**CRYSTAL RIVER UNIT 3**  
**PLANT OPERATING MANUAL**

**EMERGENCY PLAN IMPLEMENTING PROCEDURE**

**EM-225F**

**LONG TERM EMERGENCY FEEDWATER MANAGEMENT**

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## **1.0 PURPOSE**

The purpose of this procedure is to provide guidance to the TSC Accident Assessment Team (AAT) to ensure Emergency Feedwater (EFW) or Auxiliary Feedwater (AFW) remains available when OTSG heat transfer is required to remove core decay heat.

These guidelines are applicable if EFW or AFW is operating for extended periods of time and normal surveillance testing is not in progress.

## **2.0 REFERENCES**

### **2.1 DEVELOPMENTAL REFERENCES**

- 2.1.1 PC 99-1710
- 2.1.2 M 99-0027 Rev. 6, CR-3 Emergency Feedwater System Hydraulic Design Verification Analysis
- 2.1.3 NRC Letter to FPC, 3N0899-05, dated 8/11/99, NRC Safety Evaluation Related to Amendment 182
- 2.1.4 Engineering Calculation E 91-0026 Revision 4
- 2.1.5 PC 99-3329
- 2.1.6 FPC Letter to NRC, 3F1198-01, dated 11/24/98

### **3.0 PERSONNEL INDOCTRINATION**

#### **3.1 DEFINITIONS**

None

#### **3.2 RESPONSIBILITIES**

##### **3.2.1 TSC ACCIDENT ASSESSMENT TEAM (AAT)**

- Monitor EFT-2 temperature and provide recommendations to resolve high temperatures if approached.
- Provide recommendations for alternate feedwater sources and feedwater flow paths during long term EFW or AFW operation.
- Ensure EFW or AFW is maintained until OTSG heat transfer is no longer required.

##### **3.2.2 EMERGENCY COORDINATOR (EC)**

- Review and approve all recommendations provided by the Accident Assessment Team prior to implementation by the Control Room staff.

##### **3.2.3 TSC ACCIDENT ASSESSMENT TEAM (AAT)**

- Monitor EFT-2 temperature and provide recommendations to resolve high temperatures if approached.
- Provide recommendations for alternate feedwater sources and feedwater flow paths during long term EFW or AFW operation.
- Ensure EFW or AFW is maintained until OTSG heat transfer is no longer required.

##### **3.2.4 EMERGENCY REPAIR TEAM (ERT)**

- Install support equipment for transferring the contents of EFT-2 to either FST-1A or CDT-1 due to elevated temperatures in EFT-2.

##### **3.2.5 OPERATIONS (OPS)**

- Coordinate with the Control Room and provide alternate alignments for EFW or AFW systems and support systems.

### 3.3 LIMITS AND PRECAUTIONS

- 3.3.1 Ensure adequate load margin is available on EDGs prior to starting ES powered component. Refer to EOP-13, Rule 5, EDG Control.
- 3.3.2 EFT-2 tank temperature is only available on a local gauge (EF-28-TI) inside the tank building. Hazardous conditions may exist due to nitrogen gas leakage. If a loss of off-site power has occurred, ventilation and lighting will not be available in the enclosure.
- 3.3.3 EFT-2 temperature increases faster as level decreases.
- 3.3.4 EFW or AFW pump discharge TEMP of  $> 150^{\circ}\text{F}$  can challenge NPSH limits, equipment qualifications, and RB penetration stresses. EFT-2 TEMP is limited to  $< 139^{\circ}\text{F}$  to prevent exceeding these limits.
- 3.3.5 All actions recommended to the Control Room as a result of this procedure must be pre-approved by the Emergency Coordinator.
- 3.3.6 Inadequate NPSH could occur if EFP-3 is placed in STOP and allowed to run at reduced speed if EFT-2 is isolated. Stop EFP-3 by placing control switch in Pull To Lock.
- 3.3.7 FW-336-TI (95 IB on the RB wall across from EFP-2) can be used to monitor EFW discharge temperature only if flow to the OTSGs exists.
- 3.3.8 Use hand-held contact thermometers to monitor temperatures locally at EFW/AFW pumps if other instrumentation is not available and pump discharge temps are desired.
- 3.3.9 Following a steam generator overfill event ensure the main steam lines and the EFP-2 steam supply header are properly drained prior to starting EFP-2.
- 3.3.10 When operating EFP-1 or EFP-2 with the pump suction aligned solely to CDT-1 or FST-1A/1B maintain EFV-142 in the full open position to ensure adequate NPSH to the EFPs.

## 4.0 INSTRUCTIONS

### 4.1 GENERAL GUIDELINES

#### NOTE

Closing NGV-243 early will ensure EFT-2 and CDT-1/FST-1A levels will draw down together.

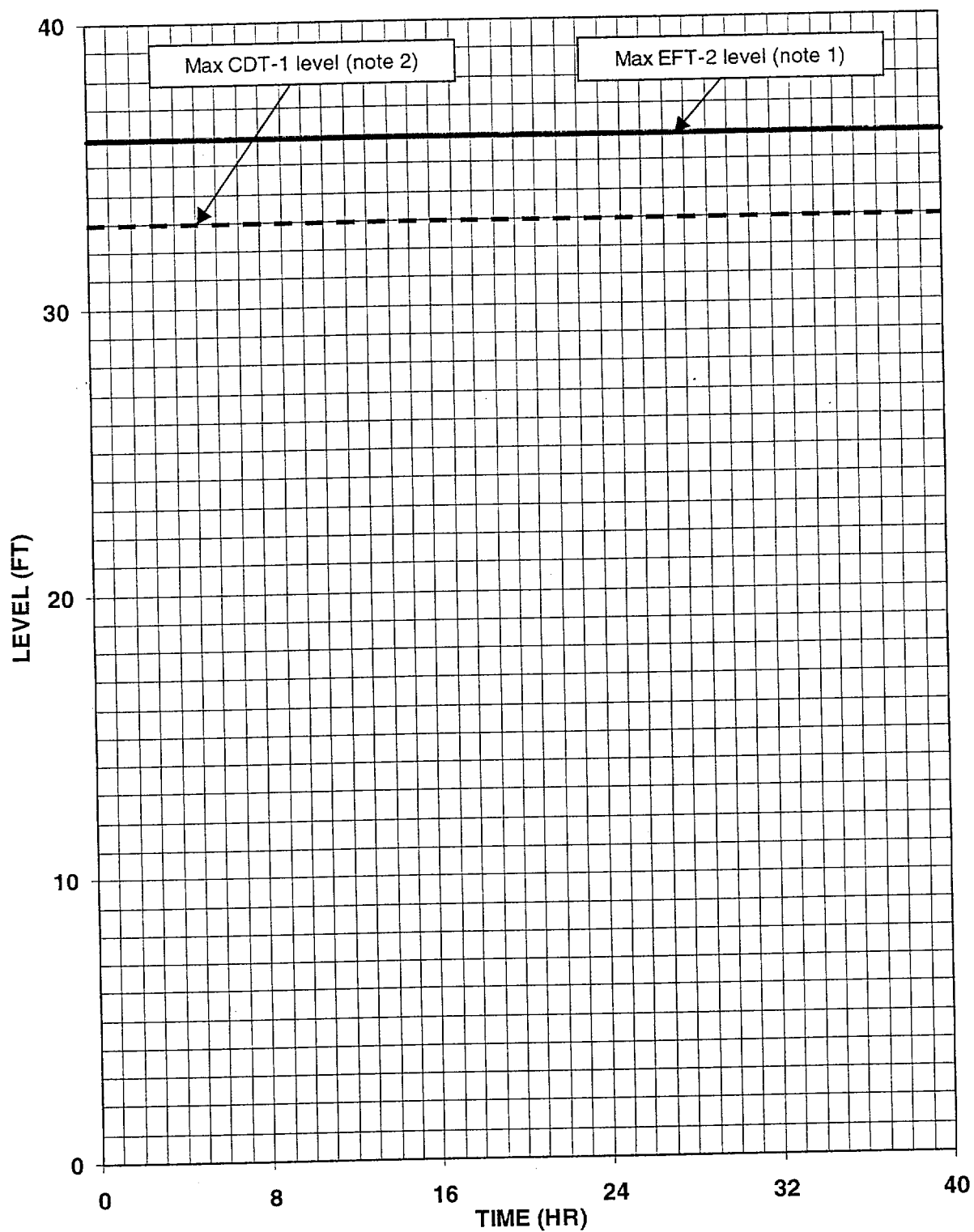
- 4.1.1 IF EFW is operating,  
THEN NOTIFY the TSC Repair Coordinator that an available operator and re-entry team are needed to isolate the nitrogen supply to EFT-2 by closing NGV-243 "N2 TO EFT-2" (119 ft TB by FWHE-2B).
- 4.1.2 IF EFW OR AFW is operating,  
THEN START plotting EFT-2 and CDT-1 level and temperatures on Enclosure 1 in this procedure.
- 4.1.3 REVIEW EFW Management Plan, Enclosure 2, in this procedure, and PERFORM appropriate actions if required.

#### NOTE

EFT-2 temperature limit of 139°F can be challenged within 8 hours under extreme conditions.

- 4.1.4 IF at any time, any EFW pump is running AND EFT-2 level is < 20 ft,  
THEN REFER to Enclosure 3 in this procedure for guidance.
- 4.1.5 IF at any time, FWP-7 is running AND CDT-1 level is < 20 ft,  
THEN REFER to Enclosure 3 in this procedure for guidance.
- 4.1.6 IF at any time, EFT-2 TEMP is  $\geq 110^{\circ}\text{F}$ ,  
THEN NOTIFY the TSC Repair Coordinator to install EFT-2 temporary transfer hose per Enclosure 4 in this procedure.
- 4.1.7 IF at any time, EFT-2 TEMP reaches  $130^{\circ}\text{F}$ ,  
THEN REFER to Enclosure 5 in this procedure for guidance.
- 4.1.8 IF EFT-2 will be cross-tied to CDT-1,  
THEN NOTIFY Chemistry to consider Amerzine addition to CDT-1.

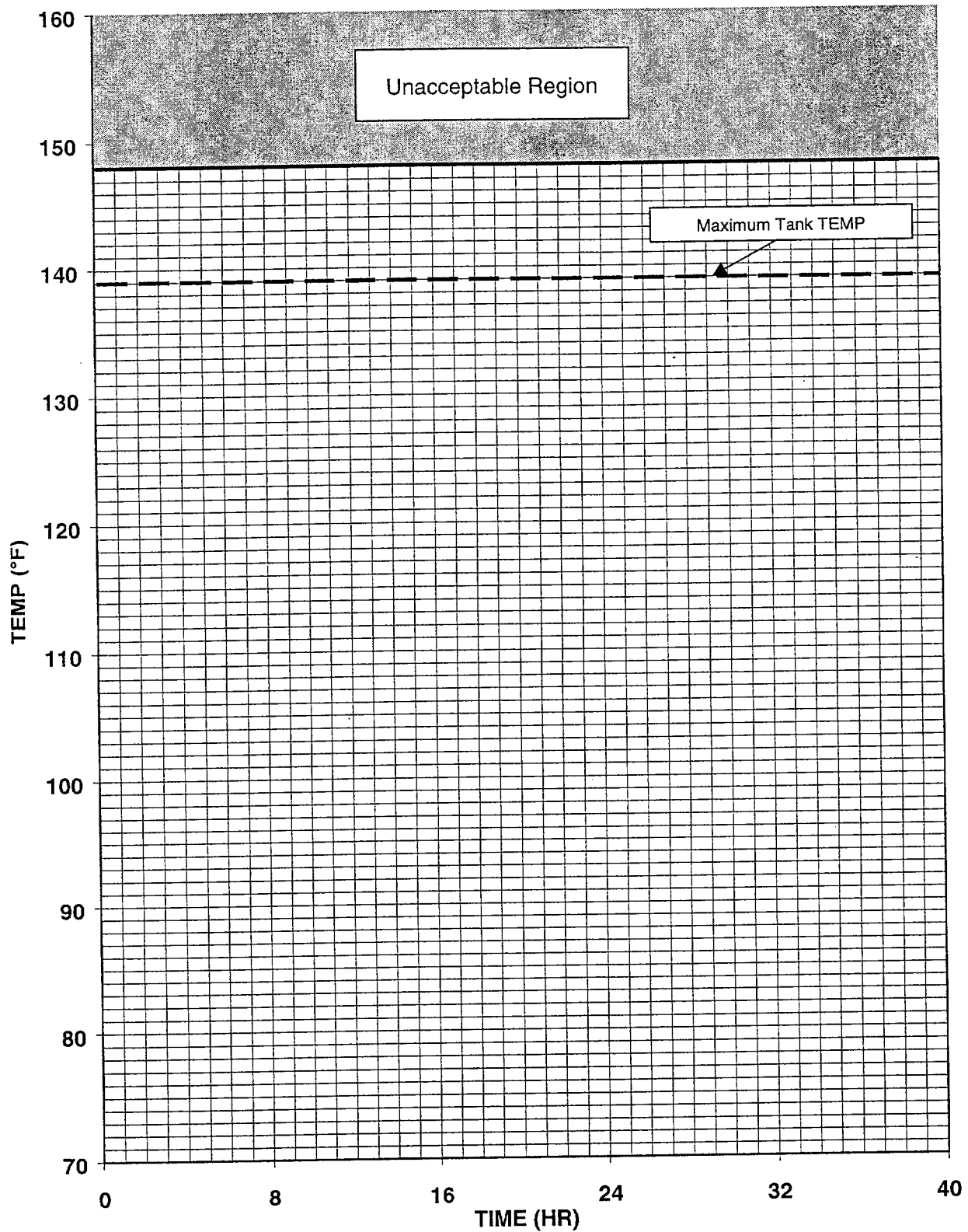
LEVEL TRENDS



Note 1: EFT-2 level instrumentation reference leg will flood if level is  $> 36$  ft.  
Note 2: CDT-1 will overflow to TB if level is  $> 33$  ft.



TEMP TRENDS



Note 1: EFT-2 TEMP can be obtained from EF-28-TI.

## ENCLOSURE 2 EFW MANAGEMENT PLAN

STATUS: EFP-3 IS RUNNING		
PROBLEM	SOLUTION	REFER TO
Any of the following are failed:  • A EDG • A Train battery chargers • A Train battery failure	<ul style="list-style-type: none"> <li>Start EFP-2 OR FWP-7</li> <li>Stop EFP-3 before A Train battery fails.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF EFP-2 or FWP-7 NOT available, THEN cross-tie EFP-3 to B Train EFW.</li> </ul>	Enclosure 9  -----OR-----  Enclosure 16
Water sources on berm are depleted AND all the following are NOT available:  • EFP-1 • FWP-7	<ul style="list-style-type: none"> <li>Start EFP-2 aligned to hotwell.</li> <li>Align Units 1 or 2 Aux steam to EFP-2 before OTSG PRESS &lt; 200 psig.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF EFP-2 is NOT available, THEN fill FST-1A/B using Units 1/2 fire service.</li> </ul>	Enclosure 12 Enclosure 6  -----OR-----  Enclosure 13
Water sources on berm are depleted AND all the following are NOT available:  • FWP-7 • EFP-2	<ul style="list-style-type: none"> <li>IF EFP-1 is available AND only A ES 4160V BUS energized, THEN start EFP-1 and align to the hotwell.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF EFP-1 is available AND Both ES 4160V Buses are energized by EDGs, THEN start EFP-1 and align to the hotwell.</li> </ul>	Enclosure 10 then Enclosure 12  -----OR-----  Enclosure 11 then Enclosure 12
EFT-2 TEMP is $\geq 130^{\circ}\text{F}$	<ul style="list-style-type: none"> <li>Align EFP-3 to CDT-1 and isolate EFT-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Start FWP-7 aligned to CDT-1</li> <li>Stop EFP-3</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Start EFP-2 aligned to the hotwell.</li> <li>Align Units 1 or 2 Aux steam to EFP-2 before OTSG PRESS &lt; 200 psig.</li> <li>Stop EFP-3</li> </ul>	Enclosure 5  -----OR-----  Enclosure 9  -----OR-----  Enclosure 12 Enclosure 6  Enclosure 9
Water sources on berm are depleted AND all the following are NOT available:  • FWP-7 • B-Battery	<ul style="list-style-type: none"> <li>Start EFP-1 on A ES 4160V BUS</li> <li>Align EFP-1 to hotwell.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Cross-Tie EFP-2 to A Train EFW.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Refill EFT-2 using EFP-2</li> </ul>	Enclosure 10 then Enclosure 12  -----OR-----  Enclosure 7  -----OR-----  Enclosure 8

## ENCLOSURE 2 EFW MANAGEMENT PLAN (CONT'D)

STATUS: EFP-2 IS RUNNING		
PROBLEM	SOLUTION	REFER TO
EFT-2 TEMP is $\geq 130^{\circ}\text{F}$	<ul style="list-style-type: none"> <li>Start FWP-7 aligned to CDT-1</li> <li>Stop EFP-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Align EFP-2 to hotwell.</li> <li>Align Units 1 or 2 Aux steam to EFP-2 before OTSG PRESS &lt; 200 psig.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Align EFP-2 to CDT-<u>AND</u> isolate EFT-2</li> </ul>	<p>Enclosure 9</p> <p>-----OR-----</p> <p>Enclosure 12 Enclosure 6</p> <p>-----OR-----</p> <p>Enclosure 5</p>
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>Water sources on berm are depleted</li> <li>Hotwell is <u>NOT</u> available</li> </ul>	<ul style="list-style-type: none"> <li>Fill Fire Storage Tanks using Units 1/2 Fire Service.</li> </ul>	Enclosure 13
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>EFP-2 suction is aligned to hotwell</li> <li>Hotwell level is approaching 24 in</li> </ul>	<ul style="list-style-type: none"> <li>IF adequate level exists in EFT-2, <u>AND</u> EFT-2 temperature is &lt; 139°F, <u>THEN</u> align EFP-2 suction to EFT-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Gravity drain water from CDT-1 and FST-1A/B to hotwell using CDV-88</li> </ul>	<p>Enclosure 14</p> <p>-----</p> <p>N/A</p>
<p><u>All</u> the following are <u>NOT</u> available:</p> <ul style="list-style-type: none"> <li>EFP-3</li> <li>FWP-7</li> </ul>	<ul style="list-style-type: none"> <li>IF EFP-1 is <u>NOT</u> available, <u>THEN</u> align Unit 1 or 2 steam to EFP-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF EFP-1 is available <u>AND</u> only A ES 4160V BUS energized, <u>THEN</u> start EFP-1</li> <li>Stop EFP-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF EFP-1 is available <u>AND</u> Both ES 4160V Buses are energized by EDGs, <u>THEN</u> start EFP-1</li> <li>Stop EFP-2</li> </ul>	<p>Enclosure 6</p> <p>-----OR-----</p> <p>Enclosure 10</p> <p>Enclosure 9</p> <p>-----OR-----</p> <p>Enclosure 11</p> <p>Enclosure 9</p>

# **ENCLOSURE 2 EFW MANAGEMENT PLAN (CONT'D)**

STATUS: EFP-1 IS RUNNING		
PROBLEM	SOLUTION	REFER TO
EFT-2 TEMP is $\geq 130^{\circ}\text{F}$	<ul style="list-style-type: none"> <li>Start FWP-7 aligned to CDT-1</li> <li>Stop EFP-1</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Align suction of EFP-1 to hotwell.</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Align EFP-1 to CDT-1 <u>AND</u> isolate EFT-2</li> </ul>	<p>Enclosure 9</p> <p>-----OR-----</p> <p>Enclosure 12</p> <p>-----OR-----</p> <p>Enclosure 5</p>
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>Water sources on berm are depleted</li> <li>Hotwell is <u>NOT</u> available</li> </ul>	<ul style="list-style-type: none"> <li>Fill Fire Storage Tanks using Units 1/2 Fire Service.</li> </ul>	Enclosure 13
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>EFP-1 suction is aligned to hotwell</li> <li>Hotwell level is approaching 24 in</li> </ul>	<ul style="list-style-type: none"> <li>IF adequate level exists in EFT-2, <u>AND</u> EFT-2 temperature is <math>&lt; 139^{\circ}\text{F}</math>, <u>THEN</u> align EFP-1 suction to EFT-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>IF adequate level exists in EFT-2, <u>AND</u> EFT-2 temperature is <math>&lt; 139^{\circ}\text{F}</math>, <u>THEN</u> start EFP-3 aligned to EFT-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>Gravity drain water from CDT-1 and FST-1A/B to hotwell using CDV-88</li> </ul>	<p>Enclosure 14</p> <p>-----OR-----</p> <p>Enclosure 9</p> <p>-----OR-----</p> <p>N/A</p>
<p><u>Any</u> of the following are failed:</p> <ul style="list-style-type: none"> <li>A Train battery chargers</li> <li>A Train battery failure</li> </ul>	<ul style="list-style-type: none"> <li>Start EFP-2 <u>OR</u> FWP-7</li> <li>Stop EFP-1 before A Train battery fails.</li> </ul> <p>-----OR-----</p> <p>IF EFP-2 or FWP-7 <u>NOT</u> available, <u>THEN</u> cross-tie EFP-1 to B Train EFW</p>	<p>Enclosure 9</p> <p>-----OR-----</p> <p>Enclosure 16</p>

# ENCLOSURE 2 EFW MANAGEMENT PLAN (CONT'D)

STATUS: FWP-7 IS RUNNING		
PROBLEM	SOLUTION	REFER TO
CDT-1 TEMP is $\geq 130^{\circ}\text{F}$	<ul style="list-style-type: none"> <li>• IF adequate level exists in EFT-2, <u>AND</u> EFT-2 temperature is <math>&lt; 139^{\circ}\text{F}</math>, <u>THEN</u> start EFP-2 aligned to EFT-2</li> <li>• Stop FWP-7</li> <li>• Align Unit 1 or 2 steam to EFP-2</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>• Align suction of FWP-7 to hotwell.</li> <li>• Gravity drain CDT-1 to hotwell using CDV-88</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>• IF Off-site power is available, <u>THEN</u> refill CDT-1 with Demin Water.</li> </ul>	<p>Enclosure 9</p> <p>Enclosure 9 Enclosure 6</p> <p>-----OR-----</p> <p>Enclosure 12</p> <p>-----OR-----</p> <p>Enclosure 3</p>
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>• FWP-7 suction is aligned to hotwell</li> <li>• Hotwell level approaching 24 in</li> </ul>	<ul style="list-style-type: none"> <li>• Gravity drain water from CDT-1 and FST-1A/B to hotwell using CDV-88</li> </ul>	N/A
<p><u>All</u> the following exist:</p> <ul style="list-style-type: none"> <li>• EFP-1 start up is desired</li> <li>• EDG load management <u>NOT</u> possible</li> </ul>	<ul style="list-style-type: none"> <li>• IF EFP-1 is available <u>AND</u> only A ES 4160V BUS energized, <u>THEN</u> start EFP-1</li> <li>• Stop FWP-7</li> </ul> <p>-----OR-----</p> <ul style="list-style-type: none"> <li>• IF EFP-1 is available, <u>AND</u> Both ES 4160V Buses are energized by EDGs, <u>THEN</u> start EFP-1</li> <li>• Stop FWP-7</li> </ul>	<p>Enclosure 10</p> <p>Enclosure 9</p> <p>-----OR-----</p> <p>Enclosure 11</p> <p>Enclosure 9</p>

### ENCLOSURE 3 EFT-2/CDT-1 INVENTORY CONTROL

#### ACTIONS

- 3.1 IF at least 1 CDP is running,  
THEN maintain EFT-2 level.

#### DETAILS

- 1 Ensure CD Hdr PRESS is between 90 and 150 psig.
- 2 Notify SPO to maintain EFT-2 level between 10 and 36 ft (95 ft TB behind Atmospheric Drain Tank):
  - Open CDV-260  
"EFT-2 FILL FROM CONDENSATE".
  - Throttle CDV-259  
"EFT-2 FILL FROM CONDENSATE"  
as necessary to maintain EFT-2 level.

ENCLOSURE 3 EFT-2/CDT-1 INVENTORY CONTROL (CONT'D)

ACTIONS

DETAILS

3.2              Maintain CDT-1 level.

- IF at least 1 CDP is running,  
              THEN maintain CDT-1 level  
              between 10 and 31 ft using CD:

          Ensure CD Hdr PRESS is  
              between 90 and 150 psig.

          Notify SPO to throttle  
              CDV-88  
              "CONDENSATE REJECT  
              TO CDT-1"  
              as necessary to maintain  
              CDT-1 level  
              (95 ft TB behind Atmospheric  
              Drain Tank).

- IF no CDPs are running,  
              THEN notify SPO to maintain  
              CDT-1 level between 10 and 31 ft  
              using DW:

          Ensure CDV-88  
              "CONDENSATE REJECT TO  
              CDT-1" is closed  
              (95 ft TB behind Atmospheric  
              Drain Tank).

          Throttle CDV-112  
              "DW MAKEUP TO CDT-1"  
              as necessary to maintain  
              CDT-1 level  
              (95 ft TB by MFWBPs).

## ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE

### ACTIONS

### DETAILS

#### CAUTION

Entry into EFT-2 Building may require additional precautions if power is not available to ventilation fan.

#### NOTE

- All fittings, hoses, and tools are located in the Fire Pump House.
- Five individuals are required to perform this enclosure

4.1    \_\_\_ Notify Control Room that  
EFT-2 temporary transfer  
line is being installed.

---

4.2    \_\_\_ IF B 4160V UNIT BUS is  
energized,  
THEN ensure AHF-152  
"EFT-2 ENC Vent Fan"  
runs for > 10 min prior to  
entry (Entrance to EFT-2).

---

4.3    \_\_\_ Ensure EFV-96  
"EFT-2 DRAIN" is closed  
(Inside EFT-2 Building  
north wall).  
(OPS or ERT)

- Refer to Enclosure 17, "EFP-2  
TEMPORARY TRANSFER LINE  
CONFIGURATION," Figures 1  
and 2, in this procedure.
- 

4.4    \_\_\_ Remove 4 in blank flange  
from EFV-96 "EFT-2  
DRAIN"  
(Inside EFT-2 Building  
north wall).  
(ERT)

- Refer to Enclosure 17, "EFP-2  
TEMPORARY TRANSFER LINE  
CONFIGURATION," Figures 1  
and 2, in this procedure.



## ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

### ACTIONS

### DETAILS

#### NOTE

Match marks are installed on the flexible spool piece for match-up with EFV-96.

- |   |  |
|---|--|
| 4.5    —    Install flexible spool piece with gaskets between EFV-96 "EFT-2 DRAIN" and spare penetration (Inside EFT-2 Building north wall).<br>(ERT) | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure |
| <hr/>   |  |
| 4.6    —    Ensure flange bolts and hose clamps are tight.<br>(ERT)   | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure |
| <hr/>   |  |
| 4.7    —    Remove 4 in blank flange on spare penetration (Maintenance Support Building under diamond plate, below stairs south wall).<br>(ERT)       | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure |
| <hr/>   |  |
| 4.8    —    Install double elbow assembly with gaskets on spare penetration.<br>(ERT)   | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure |

## ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

### ACTIONS

### DETAILS

4.9 \_\_\_\_ Install hose adapter with gaskets to double elbow assembly.

- Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure

4.10 \_\_\_\_ Ensure flange bolts are tight.  
(ERT)

- Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figures 1 and 2, in this procedure

4.11 \_\_\_\_ Ensure adequate temporary support is placed under hose adapter.

4.12 \_\_\_\_ Connect 6 in hose to hose adapter on double elbow assembly and tighten securely.  
(ERT)

4.13 \_\_\_\_ IF EFT-2 connection to FST-1A is desired,  
THEN GO TO Step 4.22 in this enclosure.

ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

ACTIONS

DETAILS

STATUS

EFT-2 connection to CDT-1 is desired.

CAUTION

FWP-7 cannot be operated if EFT-2 is connected to CDT-1 unless FWV-265 is closed.

- 
- |           |  |  |
|-----------|--|--|
| 4.14 ____ | Install 4x6 in adapter with gaskets on FWV-265 "FWP-7 FW EMERGENCY TRANSFER TO FS OR SD SYSTEM ISO" (119 ft TB near southwest stairway). (ERT) | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 3, in this procedure. |
|-----------|--|--|
- 
- |           |  |  |
|-----------|--|--|
| 4.15 ____ | Install hose adapter with gaskets to 4 x 6 in adapter. | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 3, in this procedure. |
|-----------|--|--|
- 
- |           |   |  |
|-----------|---|--|
| 4.16 ____ | Ensure adequate temporary support is placed under hose adapter. |  |
|-----------|---|--|

ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

ACTIONS

DETAILS

NOTE

Route hose between FSTs, down east side of FST-1A and through Turbine Building door.

- 4.17 — Connect sections of 6 in hose together and attach to hose adapter on FWV-265 "FWP-7 FW EMERGENCY TRANSFER TO FS OR SD SYSTEM ISO" (119 ft TB near southwest stairway). (ERT)

- Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 3, in this procedure.

ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

ACTIONS

DETAILS

4.18 \_\_\_\_ Ensure all couplings and fittings are tight.  
(ERT)

---

4.19 \_\_\_\_ Pressurize transfer hose.  
(OPS)

1 \_\_\_\_ Slowly open EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building north wall).

2 \_\_\_\_ Check all hoses and connections for leaks.

3 \_\_\_\_ IF leaks exist,  
THEN perform the following in order:

\_\_\_\_ Close EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building north wall).

\_\_\_\_ Repair leaks.

---

4.20 \_\_\_\_ Close EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building north wall).

---

4.21 \_\_\_\_ **EXIT** this enclosure.

## ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

### ACTIONS

### DETAILS

#### STATUS

EFT-2 connection to FST-1A is desired.

- 
- |           |  |  |
|-----------|--|--|
| 4.22 ____ | Install 2½ x 4 in adapter and 4 x 6 in adapter with gaskets to FSV-919 "FST-1A DRAIN AND SAMPLE VALVE" (Southeast side of FST-1A). | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 4, in this procedure. |
|-----------|--|--|
- 
- |           |  |  |
|-----------|--|--|
| 4.23 ____ | Install hose adapter with gaskets to 4 x 6 in adapter. | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 4, in this procedure. |
|-----------|--|--|
- 
- |           |   |  |
|-----------|---|--|
| 4.24 ____ | Ensure adequate temporary support is placed under hose adapter. |  |
|-----------|---|--|
- 
- |           |  |  |
|-----------|--|--|
| 4.25 ____ | Connect sections of 6 in hose together and attach to hose adapter on FSV-919 "FST-1A DRAIN AND SAMPLE VALVE" (Southeast side of FST-1A). | • Refer to Enclosure 17, "EFP-2 TEMPORARY TRANSFER LINE CONFIGURATION," Figure 4, in this procedure. |
|-----------|--|--|
- 
- |           |  |  |
|-----------|--|--|
| 4.26 ____ | Ensure all couplings and fittings are tight. |  |
|-----------|--|--|

ENCLOSURE 4 INSTALLATION OF EFT-2 TEMPORARY TRANSFER LINE (CONT'D)

ACTIONS

DETAILS

4.27 \_\_\_\_ Pressurize transfer hose.  
(OPS)

1 \_\_\_\_ Slowly open EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building north wall).

2 \_\_\_\_ Check all hoses and connections for  
leaks.

3 \_\_\_\_ IF leaks exist,  
THEN perform the following in  
order:

\_\_\_\_ Close EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building  
north wall).

\_\_\_\_ Repair leaks.

---

4.28 \_\_\_\_ Close EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building  
north wall).

---

4.29 \_\_\_\_ **EXIT** this enclosure.

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING

ACTIONS

DETAILS

- 5.1     IF EFT-2 transfer  
         to FST-1A is desired,  
         THEN GO TO Step 5.12  
         in this enclosure.



ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

STATUS

EFT-2 transfer to CDT-1 is desired.

5.2    \_\_\_    Verify 6 in hose is installed  
              between EFT-2 and  
              FWV-265  
              "FWP-7 FW EMERGENCY  
              TRANSFER TO FS OR SD  
              SYSTEM ISO"  
              (119 ft TB near southwest  
              stairway).

      \_\_\_    IF hose is NOT installed  
              between EFT-2 and  
              FWV-265,  
              THEN PERFORM  
              Enclosure 4 in this  
              procedure.

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

CAUTION

Entry into EFT-2 Building may require additional precautions if power is not available to ventilation fan.

- 5.3    IF B 4160V UNIT BUS is energized,  
      THEN ensure AHF-152 "EFT-2 ENC Vent Fan" runs for > 10 min prior to entry (Entrance to EFT-2).
- 

- 5.4    Open EFV-96  
      "EFT-2 DRAIN"  
      (Inside EFT-2 Building north wall).
- 

- 5.5    Ensure transfer hose is not leaking.
- 

NOTE

The next steps may result in a rapid decrease in EFT-2 level.

- 5.6    Notify Control Room EFT-2 alignment to CDT-1 is in progress.

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

5.7    \_\_\_    Open FWV-265  
              "FWP-7 FW EMERGENCY  
              TRANSFER TO FS OR SD  
              SYSTEM ISO"  
              (119 ft TB near south  
              west stairway).

---

5.8    \_\_\_    Ensure CDV-103  
              "CDT-1 TO EFP SUCTION"  
              is open  
              (119 ft Berm by CDT-1).

---

5.9    \_\_\_    Unlock and close EFV-111  
              "EFT-2 TO EFP SUCTION  
              ISOLATION "  
              (Inside EFT-2 Building  
              northwest corner).

---

5.10   \_\_\_    Unlock and close EFV-109  
              "EFT-2 TO EFP SUCTION  
              ISOLATION"  
              (Inside EFT-2 Building  
              north wall).

---

5.11   \_\_\_    **EXIT** this enclosure.

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

STATUS

EFT-2 transfer to FST-1A is desired.

5.12 \_\_\_\_ Verify 6 in hose is installed  
between EFT-2 and FSV-919  
"FST-1A DRAIN AND  
SAMPLE VALVE"  
(Southeast side of FST-1A).

\_\_\_\_ IF hose is NOT installed  
between EFT-2 and  
FSV-919,  
THEN PERFORM  
Enclosure 4 in this  
procedure.

CAUTION

Entry into EFT-2 Building may require additional precautions if power is not available to ventilation fan.

5.13 \_\_\_\_ IF B 4160V UNIT BUS is  
energized,  
THEN ensure AHF-152  
"EFT-2 ENC Vent Fan"  
runs for > 10 min prior to  
entry (Entrance to EFT-2).

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

5.14 \_\_\_\_ Open EFV-96  
"EFT-2 DRAIN"  
(Inside EFT-2 Building  
north wall).

---

5.15 \_\_\_\_ Ensure transfer hose is not  
leaking.

NOTE

The next step may result in a rapid decrease in EFT-2 level.

5.16 \_\_\_\_ Notify Control Room EFT-2  
alignment to CDT-1  
is in progress.

---

5.17 \_\_\_\_ Open FSV-919  
"FST-1A DRAIN AND  
SAMPLE VALVE"  
(Southeast side of FST-1A).

---

5.18 \_\_\_\_ Close CDV-288  
"FST TO CDT-1  
CROSS-TIE DRAIN"  
(119 ft Berm by FST-1A).

ENCLOSURE 5 EFT-2 TRANSFER TO ALTERNATE TANKS FOR COOLING (CONT'D)

ACTIONS

DETAILS

5.19 \_\_\_\_ Open CDV-289  
"FST TO CDT-1  
CROSS-TIE ISO"  
(119 ft Berm by FST-1A).

---

5.20 \_\_\_\_ Open FSV-918  
"FST TO CDT-1  
CROSS-TIE ISO"  
(119 ft Berm by FST-1A).

---

5.21 \_\_\_\_ Unlock and close EFV-111  
"TO EFW PUMP SUCTION"  
(Inside EFT-2 Building  
northwest corner).

---

5.22 \_\_\_\_ Unlock and close EFV-109  
"TO EFW PUMP SUCTION"  
(Inside EFT-2 Building  
north wall).

---

5.23 \_\_\_\_ EXIT this enclosure.

ENCLOSURE 6 ALIGNING UNIT 1 OR 2 STEAM TO EFP-2

ACTIONS

DETAILS

NOTE

If EFP-2 is the only available FW source, then not aligning Unit 1 or 2 steam may require EFP-2 to be cycled on and off based on available steam pressure.

6.1 — IF Unit 1 or 2 steam is available,  
AND 95 ft IB is accessible,  
THEN notify SPO to perform warmup and pressurization of AS line to EFP-2

1 — Throttle ASV-15  
"AS ISO TO EFP-2"  
1 turn open  
(119 ft TB NW stairs).

2 — WHEN steam PRESS is equalized around ASV-15,  
THEN open ASV-15

3 — Blowdown condensate from ASDT-2 by cycling ASV-110  
"ASDT-2 BLOWDOWN"  
(95 ft TB behind Atmospheric Drain Tank).

4 — WHEN AS lines are warmed and free of condensate,  
THEN notify Control Room.

---

6.2 — WHEN AS lines are warmed and pressurized,  
THEN notify PPO to blowdown MSDT-21

- Blowdown condensate from MSDT-21 by throttling open MSV-290  
"MSDT-21 BLOWDOWN"  
(95 ft IB by EFP-2).

ENCLOSURE 6 ALIGNING UNIT 1 OR 2 STEAM TO EFP-2 (CONT'D)

ACTIONS

DETAILS

6.3    WHEN AS is ready to be  
aligned to EFP-2,  
THEN notify PPO to align  
Unit 1 or 2 steam to EFP-2

1    Ensure MSDT-21 is free of  
condensate and close MSV-290  
"MSDT-21 BLOWDOWN"  
(95 ft IB by EFP-2).

2    Open ASV-23  
"UNITS 1 OR 2 STEAM  
TO EFP-2"  
(95 ft IB by EFP-2).

---

6.4    EXIT this enclosure.



ACTIONS

DETAILS

STATUS

- A EDG is supplying the A ES 4160V BUS.
- B ES 4160V BUS is de-energized.
- EFP-2 cross-tie to A Train EFW is desired.

7.1 — Verify ASV-50  
"EFP-2 TRIP &  
THROTTLE VALVE"  
is not tripped.

- "EF PUMP 2 TRIP" annunciator alarm  
(H-07-04) not lit.

— IF ASV-50 is tripped,  
THEN notify SPO to  
perform Enclosure 15,  
"EFP-2 TRIP RECOVERY" in  
this procedure.

ENCLOSURE 7 EFP-2 CROSS-TIE TO A TRAIN EFW (CONT'D)

ACTIONS

DETAILS

7.2    \_\_\_    Ensure EFP-2 normal  
                 discharge path is isolated.

1    \_\_\_    Depress "MANUAL PERMISSIVE"  
                 push buttons on  
                 EFIC channels A and B.

2    Close EFP-2 discharge block valves:

      \_\_\_    EFV-11

      \_\_\_    EFV-32

3    Notify PPO to open EFP-2 discharge  
                 block valve switches  
                 (A ES 480V SWGR Room):

      \_\_\_    DPDP 8C-1  
                 "EFV-11 MOTOR POWER"

      \_\_\_    DPDP 8C-3  
                 "EFV-32 MOTOR POWER"

---

7.3    \_\_\_    Start EFP-2

      •    Open ASV-204

ENCLOSURE 7 EFP-2 CROSS-TIE TO A TRAIN EFW (CONT'D)

ACTIONS

DETAILS

7.4    \_\_\_    Notify PPO to cross  
              connect EFW trains.

1    \_\_\_    Unlock and close EFV-12 switches  
              (A ES 480V SWGR Room):

      \_\_\_    DPDP 8C-5  
              "EFV-12 MOTOR POWER"

      \_\_\_    DPDP 8C-6  
              "EFV-12 CONTROL POWER"

2    \_\_\_    Depress the open push button on  
              EFV-12-MST  
              (A ES 480V SWGR Room).

3    \_\_\_    WHEN EFV-12 is open,  
              THEN open and lock EFV-12  
              switches  
              (A ES 480V SWGR Room):

      \_\_\_    DPDP 8C-5  
              "EFV-12 MOTOR POWER"

      \_\_\_    DPDP 8C-6  
              "EFV-12 CONTROL POWER"

4    \_\_\_    Notify Control Room that EFV-12  
              is open.

---

7.5    \_\_\_    WHEN EFP-2 is aligned to  
              supply EFW to OTSGs,  
              THEN stop EFP-3

ENCLOSURE 7 EFP-2 CROSS-TIE TO A TRAIN EFW (CONT'D)

ACTIONS

DETAILS

7.6              Depress both  
                  "EFW INITIATE"  
                  push buttons on  
                  EFIC channels A and B.

---

7.7              Ensure EFW flow is  
                  controlled.

[Rule 3, EFW/AFW Control]

---

7.8              **EXIT** this enclosure.

## ENCLOSURE 8 TRANSFERRING HOTWELL TO EFT-2 USING EFP-2

### ACTIONS

### DETAILS

#### STATUS

All the following exist:

- B-Battery failed
- Water sources on berm depleted
- Hotwell transfer to EFT-2 using EFP-2 is desired

8.1 ☐ IF hotwell is NOT at atmospheric PRESS, THEN break condenser vacuum.

1 Close all MSIVs:

☐ MSV-412

☐ MSV-413

☐ MSV-414

☐ MSV-411

2 ☐ Control OTSG PRESS using ADVs.

3 Select condenser ARPs to "PULL TO LOCK":

☐ ARP-1A

☐ ARP-1B

4 Open condenser vacuum Bkrs:

☐ ARV-48

☐ ARV-49

## ENCLOSURE 8 TRANSFERRING HOTWELL TO EFT-2 USING EFP-2 (CONT'D)

### ACTIONS

### DETAILS

8.2 \_\_\_\_ Ensure EFP-2 EFW block valves are closed.

- \_\_\_\_ EFV-11
  - \_\_\_\_ EFV-32
- 

8.3 \_\_\_\_ WHEN condenser is at atmospheric PRESS, THEN notify SPO to align EFP-2 to hotwell.

- 1 \_\_\_\_ Ensure EFV-36  
"EFW & AFW SUCTION ISO FROM HOTWELL" is open  
(95 ft TB between C & D inlet waterboxes).
  - 2 \_\_\_\_ Unlock and open EFV-1  
"EFP-2 SUCTION FROM CONDENSER"  
(95 ft IB by EFP-2).
  - 3 \_\_\_\_ Unlock and close EFV-4  
"EFP-2 SUCTION FROM EFT-2"  
(95 ft IB by EFP-2).
- 

8.4 \_\_\_\_ Start EFP-2

- Open ASV-204

ENCLOSURE 8 TRANSFERING HOTWELL TO EFT-2 USING EFP-2 (CONT'D)

ACTIONS

DETAILS

8.5    WHEN hotwell  $\leq$  24 in,  
         OR EFT-2 is at desired  
         level,  
         THEN stop EFP-2

- Close ASV-204

---

8.6    EXIT this enclosure.

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS

### ACTIONS

### DETAILS

#### CAUTION

Ensure adequate margin is available on A EDG before starting EFP-1

9.1 \_\_\_\_ IF EFP-1 start is desired from hotwell,  
THEN ensure flow path is properly aligned and start EFP-1

- 1 \_\_\_\_ Ensure condenser is at atmospheric PRESS.
- 2 \_\_\_\_ Ensure EFV-36  
"EFW & AFW SUCTION ISO FROM HOTWELL" is open (95 ft TB between C & D inlet waterboxes).
- 3 \_\_\_\_ Unlock and open EFV-2  
"EFP-1 SUCTION FROM CONDENSER"  
(95 ft IB by EFP-1).
- 4 \_\_\_\_ Unlock and close EFV-3  
"EFP-1 SUCTION FROM EFT-2"  
(95 ft IB by EFP-1).
- 5 \_\_\_\_ Ensure EFP-1 EFIC control valves are closed.
- 6 \_\_\_\_ Ensure EFP-3 is in  
"PULL TO LOCK".
- 7 \_\_\_\_ Start EFP-1 and ensure EFW flow is controlled.

[Rule 5, EDG Control]

- 8 \_\_\_\_ Ensure EFW flow is maintained  
< limit of EOP-14, Emergency Operating Procedures Enclosures, Figure 3



## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

### DETAILS

#### CAUTION

Ensure adequate margin is available on A EDG before starting EFP-1

9.2 — IF EFP-1 start is desired from EFT-2,  
THEN ensure flow path is properly aligned and start EFP-1

- 1 — OPEN EFV-109  
"EFT-2 TO EFW PUMP SUCTION"  
(119 ft berm inside EFT-2 Building).
- 2 — Open EFV-111  
"EFT-2 TO EFW PUMP SUCTION"  
(119 ft Berm inside EFT-2 Building).
- 3 — Unlock and open EFV-3  
"EFP-1 SUCTION FROM EFT-2"  
(95 ft IB by EFP-1).
- 4 — Unlock and close EFV-2  
"EFP-1 SUCTION FROM CONDENSER"  
(95 ft IB by EFP-1).
- 5 — Ensure EFP-1 EFIC control valves are closed.
- 6 — Ensure EFP-3 is in "PULL TO LOCK".
- 7 — Start EFP-1 and ensure EFW flow is controlled.

[Rule 5, EDG Control]

- 8 — Ensure EFW flow is controlled.

[Rule 3, EFW/AFW Control]

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

### DETAILS

9.3    IF EFP-2 start is desired  
         from hotwell,  
         THEN ensure flow path is  
         properly aligned and start  
         EFP-2

- 1    Ensure condenser is at  
     atmospheric PRESS.
- 2    Ensure EFV-36  
     "EFW & AFW SUCTION ISO  
     FROM HOTWELL" is open  
     (95 ft TB between C & D inlet  
     waterboxes).
- 3    Unlock and open EFV-1  
     "EFP-2 SUCTION FROM  
     CONDENSER"  
     (95 ft IB by EFP-2).
- 4    Unlock and close EFV-4  
     "EFP-2 SUCTION FROM EFT-2"  
     (95 ft IB by EFP-2).
- 5    Ensure EFP-2 EFIC control valves  
     are closed.
- 6    Start EFP-2 by opening 1 of the  
     following:  
               ASV-5  
               ASV-204
- 7    Ensure EFW flow is controlled.

[Rule 3, EFW/AFW Control]

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

### DETAILS

9.4    IF EFP-2 start is desired  
         from EFT-2,  
         THEN ensure flow path is  
         properly aligned and start  
         EFP-2

1    OPEN EFV-109  
     "EFT-2 TO EFW PUMP SUCTION"  
     (119 ft berm inside  
     EFT-2 Building).

2    Open EFV-111  
     "EFT-2 TO EFW PUMP SUCTION"  
     (119 ft Berm inside  
     EFT-2 Building).

3    Unlock and open EFV-4  
     "EFP-2 SUCTION FROM EFT-2"  
     (95 ft IB by EFP-2).

4    Unlock and close EFV-1  
     "EFP-2 SUCTION FROM  
     CONDENSER"  
     (95 ft IB by EFP-2).

5    Ensure EFP-2 EFIC control valves  
     are closed.

6    Start EFP-2 by opening 1 of the  
     following:

ASV-5

ASV-204

7    Ensure EFW flow is controlled.

     [Rule 3, EFW/AFW Control]

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

- 9.5 — IF EFP-3 start is desired,  
THEN ensure flow path is  
properly aligned and start  
EFP-3

### DETAILS

- 1 — IF starting EFP-3 from EFT-2,  
THEN ensure the following valves  
are open:
- EFV-109  
"EFT-2 TO EFW PUMP  
SUCTION"  
(119 ft berm inside  
EFT-2 Building)
  - EFV-111  
"EFT-2 TO EFW PUMP  
SUCTION"  
(119 ft Berm inside  
EFT-2 Building)
- 2 — IF EFP-3 will NOT be aligned  
to EFT-2,  
THEN ensure proper suction flow  
path exists.
- 3 — Ensure EFP-3 EFIC control valves  
are closed.
- 4 — Ensure EFP-1 is in  
"PULL TO LOCK".
- 5 — Depress "MANUAL PERMISSIVE"  
push button on EFIC channel A.
- 6 — Select EFP-3 to  
"NORMAL AFTER STOP".
- 7 — Reset the fuel rack on  
EFP-3 diesel (119 ft Berm inside  
EFP-3 Building).
- 8 — Start EFP-3
- 9 — Ensure EFW flow is controlled.
- [Rule 3, EFW/AFW Control]

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

### DETAILS

9.6 \_\_\_\_ IF FWP-7 start is desired  
from CDT-1,  
THEN ensure flow path is  
properly aligned and start  
FWP-7

- 1 \_\_\_\_ Ensure CDT-1 level  $\geq$  5 ft.
- 2 \_\_\_\_ Ensure CDV-102  
"CDT-1 LOWER ISO" is open  
(119 ft Berm by CDT-1).
- 3 \_\_\_\_ OPEN FWV-214 "FWP-7  
SUCTION FROM CDT-1"  
(95 ft TB by FWP-7).
- 4 \_\_\_\_ Close FWV-213  
"FWP-7 SUCTION FROM  
HOTWELL"  
(95 ft TB by FWP-7).
- 5 \_\_\_\_ Ensure all AFW control valves are  
closed.
- 6 \_\_\_\_ Start FWP-7

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

- 9.7    IF FWP-7 start is desired from hotwell,  
      THEN ensure flow path is properly aligned and start FWP-7

### DETAILS

- 1    Ensure condenser is at atmospheric PRESS.
- 2    Ensure hotwell level  $\geq$  48 in.
- 3    Ensure EFV-36  
      "EFW & AFW SUCTION ISO FROM HOTWELL" is open  
      (95 ft TB between C & D inlet waterboxes).
- 4    Open FWV-213  
      "FWP-7 SUCTION FROM HOTWELL"  
      (95 ft TB by FWP-7).
- 5    Close FWV-214  
      "FWP-7 SUCTION FROM CDT-1"  
      (95 ft TB by FWP-7).
- 6    Ensure all AFW control valves are closed.
- 7    Start FWP-7

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

- 9.8 \_\_\_\_ IF FWP-7 start is desired from EFT-2,  
THEN ensure flow path is properly aligned and start FWP-7

### DETAILS

- 1 \_\_\_\_ Ensure EFT-2 level  $\geq 9$  ft.
- 2 \_\_\_\_ Ensure EFP-1 and EFP-2 are not running.
- 3 \_\_\_\_ OPEN EFV-109  
"EFT-2 TO EFW PUMP SUCTION"  
(119 ft berm inside EFT-2 Building).
- 4 \_\_\_\_ Ensure EFV-3 is open  
"EFP-1 SUCTION FROM EFT-2"  
(95 ft IB by EFP-1).
- 5 \_\_\_\_ Unlock and open EFV-2  
"EFP-1 SUCTION FROM CONDENSER"  
(95 ft IB by EFP-1).
- 6 \_\_\_\_ Open FWV-213  
"FWP-7 SUCTION FROM HOTWELL"  
(95 ft TB by FWP-7).
- 7 \_\_\_\_ Close FWV-214  
"FWP-7 SUCTION FROM CDT-1"  
(95 ft TB by FWP-7).
- 8 \_\_\_\_ Close EFV-36  
"EFW & AFW SUCTION ISO FROM HOTWELL"  
(95 ft TB between C & D inlet waterboxes).
- 9 \_\_\_\_ Ensure all AFW control valves are closed.
- 10 \_\_\_\_ Start FWP-7

## ENCLOSURE 9 START UP AND SHUTDOWN OF EFW/AFW PUMPS (CONT'D)

### ACTIONS

### DETAILS

9.9    IF stopping any EFW  
      OR AFW pump is desired,  
      THEN stop affected pump.

1    IF EFP-1 shutdown is desired,  
      THEN select EFP-1 to  
      "PULL TO LOCK".

2    IF EFP-2 shutdown is desired,  
      THEN perform the following in  
      order:

      \_\_\_ Depress "MANUAL  
          PERMISSIVE" push button  
          on EFIC channel B.

      \_\_\_ Close ASV-204

      \_\_\_ Close ASV-5

3    IF EFP-3 shutdown is desired,  
      AND EFP-3 is aligned to EFT-2,  
      THEN perform the following in  
      order:

      \_\_\_ Depress "MANUAL  
          PERMISSIVE" push button  
          on EFIC channel A.

      \_\_\_ Stop EFP-3

4    IF EFP-3 shutdown is desired,  
      AND EFT-2 is isolated,  
      THEN select EFP-3 to  
      "PULL TO LOCK".

5    IF FWP-7 shutdown is desired,  
      THEN stop FWP-7

---

9.10    EXIT this enclosure.



## ENCLOSURE 10 EFP-1 TO DHR TRANSITION

### ACTIONS

### DETAILS

#### STATUS

All the following exist:

- EFP-1 starting desired
- B ES 4160V BUS not energized
- A EDG supplying power to A ES 4160V BUS
- DHR not in service
- LPI not required

10.1 \_\_\_\_ Ensure available margin on  
A EDG.

- Ensure all the following are not  
running:

\_\_\_\_ DHP-1A

\_\_\_\_ RWP-3A

\_\_\_\_ DCP-1A

\_\_\_\_ BSP-1A

\_\_\_\_ AHF-15A

ENCLOSURE 10 EFP-1 TO DHR TRANSITION (CONT'D)

ACTIONS

DETAILS

10.2 \_\_\_ Start EFP-1

1 \_\_\_ Ensure proper suction flow path exists.

2 \_\_\_ IF EFP-3 is running,  
    THEN stop select EFP-3 to  
    "PULL TO LOCK".

3 Ensure EFP-1 EFIC control valves are closed:

\_\_\_ EFV-58

\_\_\_ EFV-57

4 \_\_\_ Start EFP-1

[Rule 5, EDG Control]

5 \_\_\_ Ensure EFW flow is controlled.

[Rule 3, EFW/AFW Control]

ENCLOSURE 10 EFP-1 TO DHR TRANSITION (CONT'D)

ACTIONS

DETAILS

10.3 \_\_\_\_ WHEN transition to DHR is  
required,  
THEN stop EFP-1

1 \_\_\_\_ Raise level in available OTSGs to  
> 90%.

2 Close EFP-1 EFIC control valves

\_\_\_\_ EFV-58

\_\_\_\_ EFV-57

3 \_\_\_\_ Select EFP-1 to "PULL TO LOCK".

---

10.4 \_\_\_\_ Transition to DHR using  
applicable EOP or AP.

---

10.5 \_\_\_\_ **EXIT** this enclosure.

ENCLOSURE 11 EFP-1 ALIGNMENT TO A EDG WITHOUT LOAD MANAGEMENT

ACTIONS

DETAILS

STATUS

All the following exist:

- EFP-1 starting desired
- BOTH ES 4160V Buses energized by EDGs
- Stopping SWP-1A or RWP-2A not desired
- DHR not in service
- LPI not required

11.1 \_\_\_\_ Ensure CC ventilation and  
CC chiller is aligned to  
B ES 4160V BUS.

- Refer to EOP-14, Enclosure 17,  
Control Complex Emergency  
Ventilation and Cooling, for guidance.

11.2 \_\_\_\_ Ensure available margin on  
A EDG.

- Ensure all the following are not  
running:

\_\_\_\_ DHP-1A  
\_\_\_\_ RWP-3A  
\_\_\_\_ DCP-1A  
\_\_\_\_ BSP-1A  
\_\_\_\_ AHF-15A

ENCLOSURE 11 EFP-1 ALIGNMENT TO A EDG WITHOUT LOAD MANAGEMENT  
(CONT'D)

ACTIONS

DETAILS

11.3 \_\_\_ Start EFP-1

1 \_\_\_ Ensure a proper suction flow path exists.

2 \_\_\_ IF EFP-3 is running,  
THEN select EFP-3 to  
"PULL TO LOCK".

3 Ensure EFP-1 EFIC control valves are closed:

\_\_\_ EFV-58

\_\_\_ EFV-57

4 \_\_\_ Start EFP-1

[Rule 5, EDG Control]

5 \_\_\_ Ensure EFW flow is controlled.

[Rule 3, EFW/AFW Control]

---

11.4 \_\_\_ WHEN transition to DHR is required,  
THEN ensure DHR is aligned to the  
B ES 4160V BUS.

- Transition to DHR using applicable EOP or AP.

---

11.5 \_\_\_ EXIT this enclosure.

## ENCLOSURE 12 ALIGNING EFW/AFW PUMPS TO HOTWELL

### ACTIONS

### DETAILS

12.1 \_\_\_\_ Ensure hotwell is at atmospheric PRESS.

1 Close all MSIVs:

\_\_\_\_ MSV-412

\_\_\_\_ MSV-413

\_\_\_\_ MSV-414

\_\_\_\_ MSV-411

2 \_\_\_\_ Control OTSG PRESS using ADVs.

3 Select condenser ARPs to "PULL TO LOCK":

\_\_\_\_ ARP-1A

\_\_\_\_ ARP-1B

4 Open condenser vacuum Bkrs:

\_\_\_\_ ARV-48

\_\_\_\_ ARV-49

---

12.2 \_\_\_\_ WHEN hotwell is at atmospheric PRESS, THEN notify SPO to determine hotwell TEMP.

• Record hotwell TEMP:

CD-53-TI  
"CDHE-4A SOUTHSIDE  
TEMPERATURE": \_\_\_\_\_ °F  
(95 ft TB south of A hotwell)

CD-55-TI  
"CDHE-4B SOUTHSIDE  
TEMPERATURE": \_\_\_\_\_ °F  
(95 ft TB south of B hotwell)

## ENCLOSURE 12 ALIGNING EFW/AFW PUMPS TO HOTWELL (CONT'D)

### ACTIONS

### DETAILS

12.3 \_\_\_ Verify hotwell is available.

- Verify all the following exist:

\_\_\_ Hotwell level > 48 in

\_\_\_ Hotwell TEMP < 139°F

\_\_\_ IF hotwell is NOT available,  
THEN EXIT this enclosure.

---

12.4 \_\_\_ IF EFP-1 alignment to the  
hotwell is desired,  
THEN align EFP-1 to  
hotwell.

- 1 \_\_\_ Ensure EFV-36  
"EFW & AFW SUCTION ISO  
FROM HOTWELL" is open  
(95 ft TB between C & D inlet  
waterboxes).
- 2 \_\_\_ Unlock and open EFV-2  
"EFP-1 SUCTION FROM  
CONDENSER"  
(95 ft IB by EFP-1).
- 3 \_\_\_ Unlock and close EFV-3  
"EFP-1 SUCTION FROM EFT-2"  
(95 ft IB by EFP-1).
- 4 \_\_\_ IF EFP-1 start up is desired,  
THEN CONCURRENTLY PERFORM  
Enclosure 9 in this procedure.
- 5 \_\_\_ Maintain total EFW flow  $\leq$  limits  
of EOP-14, Emergency Operating  
Procedures Enclosures, Figure 3

## ENCLOSURE 12 ALIGNING EFW/AFW PUMPS TO HOTWELL (CONT'D)

### ACTIONS

12.5 \_\_\_\_ IF EFP-2 alignment to the hotwell is desired, THEN align EFP-2 to hotwell.

### DETAILS

- 1 \_\_\_\_ Ensure EFV-36  
"EFW & AFW SUCTION ISO FROM HOTWELL" is open  
(95 ft TB between C & D inlet waterboxes).
- 2 \_\_\_\_ Unlock and open EFV-1  
"EFP-2 SUCTION FROM CONDENSER"  
(95 ft IB by EFP-2).
- 3 \_\_\_\_ Unlock and close EFV-4  
"EFP-2 SUCTION FROM EFT-2"  
(95 ft IB by EFP-2).
- 4 \_\_\_\_ IF EFP-2 start up is desired, THEN CONCURRENTLY PERFORM  
Enclosure 9 in this procedure.
- 5 \_\_\_\_ Maintain total EFW flow  $\leq$  limits  
of EOP-14, Emergency Operating  
Procedures Enclosures, Figure 3



## ENCLOSURE 12 ALIGNING EFW/AFW PUMPS TO HOTWELL (CONT'D)

### ACTIONS

### DETAILS

12.6 \_\_\_\_ IF FWP-7 alignment to the hotwell is desired,  
THEN align FWP-7 suction from hotwell.

- 1 \_\_\_\_ Ensure EFV-36  
"EFW & AFW SUCTION ISO FROM HOTWELL" is open  
(95 ft TB between C & D inlet waterboxes).
- 2 \_\_\_\_ Open FWV-213  
"FWP-7 SUCTION FROM HOTWELL"  
(95 ft TB by FWP-7).
- 3 \_\_\_\_ Close FWV-214  
"FWP-7 SUCTION FROM CDT-1"  
(95 ft TB by FWP-7).
- 4 \_\_\_\_ IF FWP-7 start up is desired,  
THEN CONCURRENTLY PERFORM  
Enclosure 9 in this procedure.

---

12.7 \_\_\_\_ IF at any time hotwell level is  $\leq 24$  in,  
THEN ensure adequate suction source exists.

- Perform 1 of the following:
  - \_\_\_\_ Transfer pump suction to alternate supply.
  - \_\_\_\_ Refill hotwell.
  - \_\_\_\_ Stop any running EFW or AFW pump aligned to the hotwell.

---

12.8 \_\_\_\_ WHEN no running EFW  
OR AFW pump is aligned to the hotwell,  
THEN EXIT this enclosure.

## ENCLOSURE 13 REFILLING FST-1A/1B FROM UNIT 1 OR 2 FIRE SYSTEM

### ACTIONS

- 13.1 \_\_\_\_ Notify CR-1/2  
Control Room that FST  
filling evolution will be  
performed.

### DETAILS

#### NOTE

FST-1A or 1B is full when level is 36 ft (Approximately 9,860 gal = 1 ft.)

- 13.2 \_\_\_\_ Start FST-1A fill.

- 1 \_\_\_\_ Ensure FSV-27  
"FST-1A INLET ISO"  
is open  
(119 ft Berm between FSTs).
- 2 \_\_\_\_ IF FST-1A and FST-1B are NOT  
cross-tied,  
THEN ensure FSV-28  
"FST-1B INLET ISO" is closed  
(119 ft Berm between FSTs).

3 Open 1 of the following valves:

- \_\_\_\_ FSV-25  
"UNIT 1 & 2 FILL ISOLATION TO  
UNIT 3 FIRE SERVICE"  
(95 ft West of Berm outside  
protected area)
- \_\_\_\_ FSV-285  
"FSV-25 BYPASS"  
(95 ft West of Berm outside  
protected area)

ENCLOSURE 13 REFILLING FST-1A/1B FROM UNIT 1 OR 2 FIRE SYSTEM  
(CONT'D)

ACTIONS

DETAILS

13.3 \_\_\_\_ WHEN FSTs are at desired level,  
THEN stop FST fill.

- 1 \_\_\_\_ Close FSV-25  
"UNIT 1 & 2 FILL ISOLATION TO  
UNIT 3 FIRE SERVICE"  
(95 ft West of Berm outside  
protected area).
- 2 \_\_\_\_ Close FSV-285  
"FSV-25 BYPASS"  
(95 ft West of Berm outside  
protected area).
- 3 \_\_\_\_ IF FST-1A and FST-1B are NOT  
cross-tied,  
THEN perform the following:
  - \_\_\_\_ Open FSV-28  
"FST-1B INLET ISO  
(119 ft Berm between FSTs).
  - \_\_\_\_ Close FSV-27  
"FST-1A INLET ISO"  
(119 ft Berm between FSTs).

---

13.4 \_\_\_\_ **EXIT** this enclosure.

## ENCLOSURE 14 ALIGNING EFW PUMPS TO EFT-2

### ACTIONS

### DETAILS

14.1 \_\_\_\_ Ensure EFT-2 level is  $\geq 9$  ft.

---

14.2 \_\_\_\_ Verify CDT-1 level is  $\geq 5$  ft.

\_\_\_\_ IF CDT-1 level is  $< 5$  ft,  
THEN ensure CDV-103  
"CDT-1 TO EFP SUCTION"  
is closed  
(119 ft Berm by CDT-1).

---

14.3 \_\_\_\_ IF EFP-1 alignment to EFT-2  
is desired,  
THEN align EFP-1 to EFT-2

1 \_\_\_\_ Ensure EFV-109  
"EFT-2 TO EFW PUMP SUCTION"  
is open  
(119 ft berm inside  
EFT-2 Building).

2 \_\_\_\_ Ensure EFV-111  
"EFT-2 TO EFW PUMP SUCTION"  
is open  
(119 ft Berm inside  
EFT-2 Building).

3 \_\_\_\_ Unlock and open EFV-3  
"EFP-1 SUCTION FROM EFT-2"  
(95 ft IB by EFP-1).

4 \_\_\_\_ Unlock and close EFV-2  
"EFP-1 SUCTION FROM  
CONDENSER"  
(95 ft IB by EFP-1).

## ENCLOSURE 14 ALIGNING EFW PUMPS TO EFT-2 (CONT'D)

### ACTIONS

### DETAILS

14.4 \_\_\_\_ IF EFP-2 alignment to EFT-2  
is desired,  
THEN align EFP-2 to EFT-2

- 1 \_\_\_\_ Ensure EFV-109  
"EFT-2 TO EFW PUMP SUCTION"  
is open  
(119 ft berm inside  
EFT-2 Building).
  - 2 \_\_\_\_ EFV-111  
"EFT-2 TO EFW PUMP SUCTION"  
is open  
(119 ft Berm inside  
EFT-2 Building).
  - 3 \_\_\_\_ Unlock and open EFV-4  
"EFP-2 SUCTION FROM EFT-2"  
(95 ft IB by EFP-2).
  - 4 \_\_\_\_ Unlock and close EFV-1  
"EFP-2 SUCTION FROM  
CONDENSER"  
(95 ft IB by EFP-2).
- 

14.5 \_\_\_\_ EXIT this enclosure.

ACTIONS

DETAILS

CAUTION

If EFP-2 trip recovery follows an OTSG overfill event ensure MS lines and EFP-2 steam supply header are drained prior to performing EFP-2 trip recovery.

15.1 ☐ Cause of the EFP-2 trip has been identified and corrected.

---

15.2 ☐ Ensure EFP-2 steam supply isolation valves are closed.

- ☐ ASV-5
  - ☐ ASV-204
- 

15.3 ☐ Ensure EFP-2 normal discharge path is isolated.

1 ☐ Depress "MANUAL PERMISSIVE" push buttons on EFIC channels A and B.

2 Close EFP-2 EFIC control valves:

☐ EFV-55

☐ EFV-56

ENCLOSURE 15 EFT-2 TRIP RECOVERY (CONT'D)

ACTIONS

DETAILS

15.4 \_\_\_ Notify SPO to  
reset ASV-50  
(95 ft IB by EFP-2).

- 1 \_\_\_ Turn handwheel clockwise to  
raise latch collar.
- 2 \_\_\_ Ensure tappet and tappet nut are  
fully depressed.
- 3 \_\_\_ Engage latch lever.
- 4 \_\_\_ Slowly open ASV-50 by turning  
handwheel counterclockwise until  
full open.
- 5 \_\_\_ Notify Control Room to verify  
Annunciator alarm "EF PUMP 2  
TRIP" (H-07-04) clears.

---

15.5 \_\_\_ Notify Control Room EFP-2  
is reset.

---

15.6 \_\_\_ **EXIT** this enclosure.

**ENCLOSURE 16 EFP-1/EFP-3 CROSS-TIE TO B TRAIN EFW**

ACTIONS

DETAILS

**STATUS**

- **EFP-1/EFP-3 cross-tie to B Train EFW is desired.**

16.1\_\_\_ Ensure EFP-1 / EFP-3  
normal discharge path is  
isolated.

1 \_\_\_ Depress "MANUAL PERMISSIVE"  
push buttons on  
EFIC channels A and B.

2 Close EFP-1/ EFP-3 discharge block  
valves:

\_\_\_ EFV-14

\_\_\_ EFV-33

3 Notify PPO to open EFP-1 / EFP-3  
discharge block valve switches  
(B ES 480V SWGR Room):

\_\_\_ DPDP 8D-1  
"EFV-14 MOTOR POWER"

\_\_\_ DPDP 8D-3  
"EFV-33 MOTOR POWER"



ENCLOSURE 16 EFP-1/EFP-3 CROSS-TIE TO B TRAIN EFW (CONT'D)

ACTIONS

DETAILS

16.2 — IF EFV-12 power available,  
THEN notify PPO to open  
EFV-12 electrically.

1 Unlock and close EFV-12 switches  
(A ES 480V SWGR Room):

— DPDP 8C-5  
"EFV-12 MOTOR POWER"

— DPDP 8C-6  
"EFV-12 CONTROL POWER"

2 — Depress the open push button on  
EFV-12-MST  
(A ES 480V SWGR Room).

3 — WHEN EFV-12 is open,  
THEN open and lock EFV-12  
switches  
(A ES 480V SWGR Room):

— DPDP 8C-5  
"EFV-12 MOTOR POWER"

— DPDP 8C-6  
"EFV-12 CONTROL POWER"

— IF EFV-12 power is NOT  
available,  
THEN notify PPO to open  
EFV-12 manually.  
(95 ft IB by EFP-1)

---

16.3 — IF EFP-2 is not running,  
THEN close EFP-2 EFIC  
control valves.

• Close EFP-2 EFIC control valves:

— EFV-55

— EFV-56

ENCLOSURE 16 EFP-1/EFP-3 CROSS-TIE TO B TRAIN EFW (CONT'D)

ACTIONS

DETAILS

16.4\_\_\_ Start EFP-1 or EFP-3.

---

16.5\_\_\_ Depress both  
"EFW INITIATE"  
push buttons on  
EFIC channels A and B.

---

16.6\_\_\_ IF EFP-2 is running,  
THEN stop EFP-2

---

16.7\_\_\_ Ensure EFW flow is  
controlled.

[Rule 3, EFW/AFW Control]

---

16.8\_\_\_ **EXIT** this enclosure.

## ENCLOSURE 17 EFT-2 TEMPORARY TRANSFER LINE CONFIGURATION

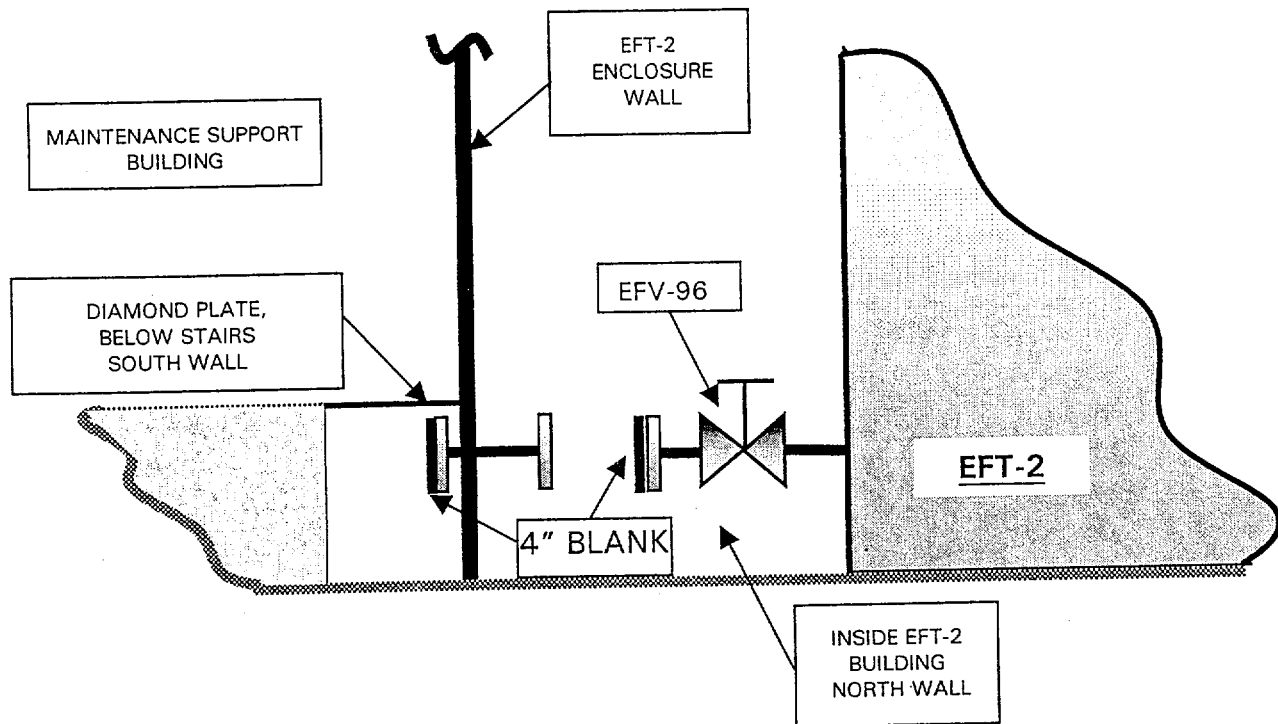


FIGURE 1 - CONFIGURATION OF EFT-2 PIPING  
AT BEGINING ENCLOSURE 4.0

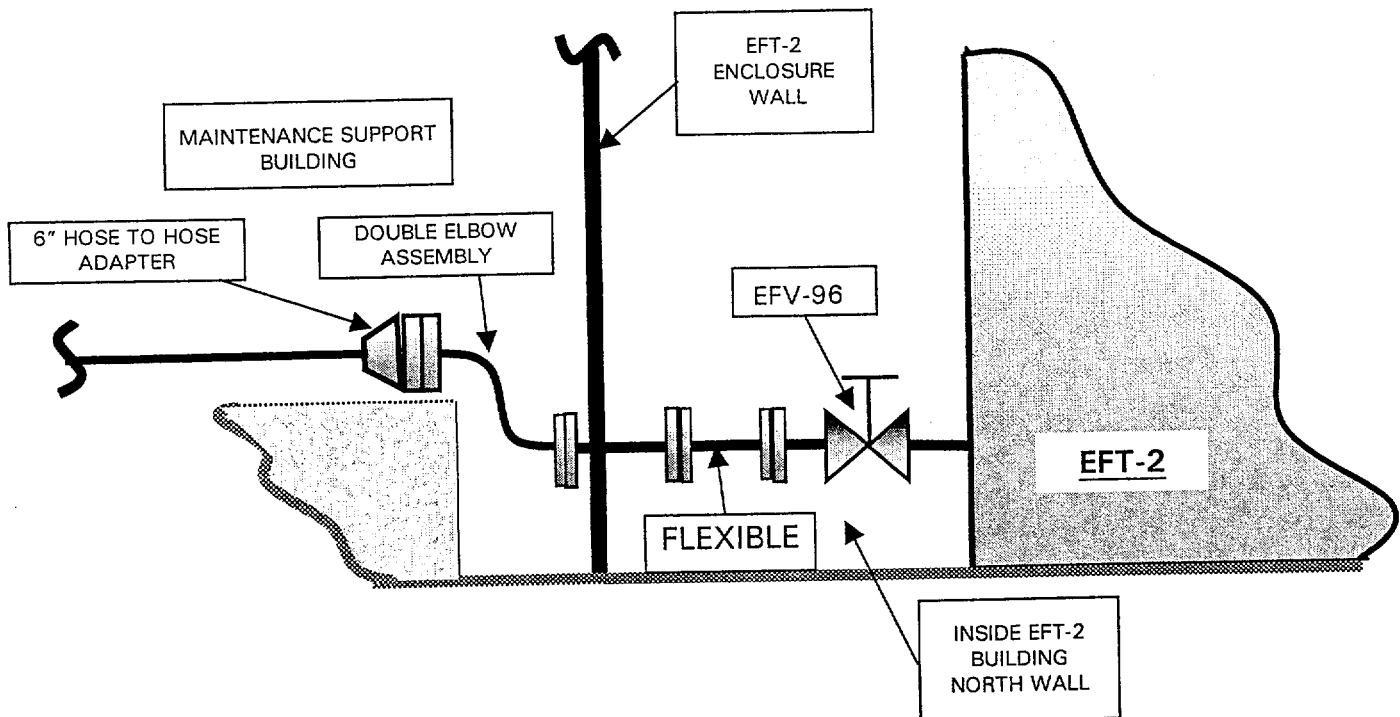


FIGURE 2 - CONFIGURATION OF EFT-2 TRANSFER LINE  
CONNECTION AT THE END OF ENCLOSURE 4, STEP 4.11

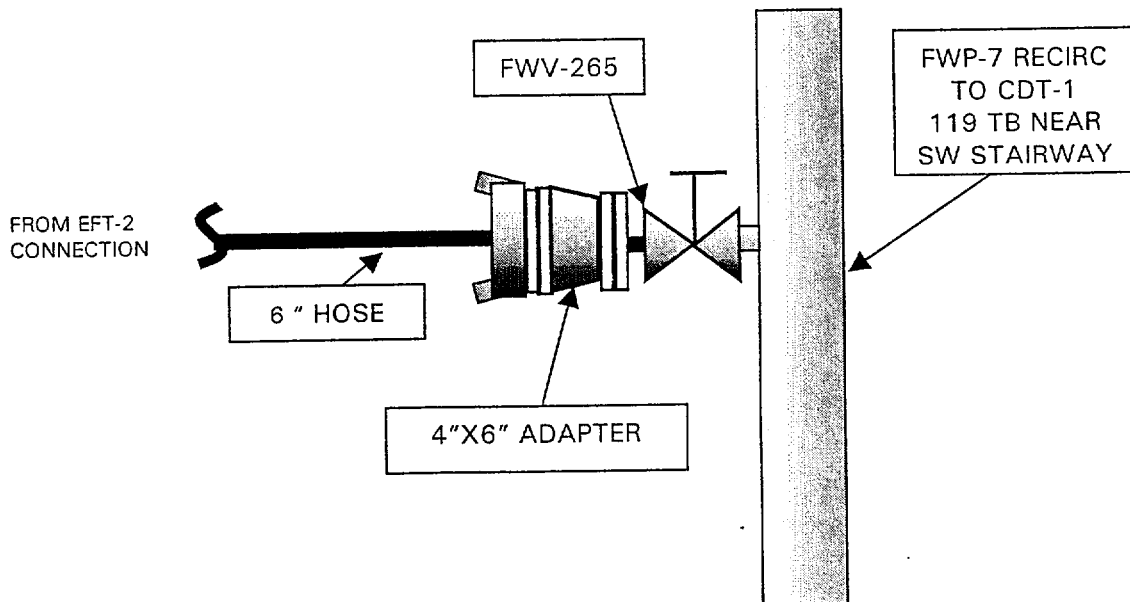


FIGURE 3 - CONFIGURATION OF EFT-2 CONNECTIONS TO CDT-1 AT THE END OF ENCLOSURE 4, STEP 4.16

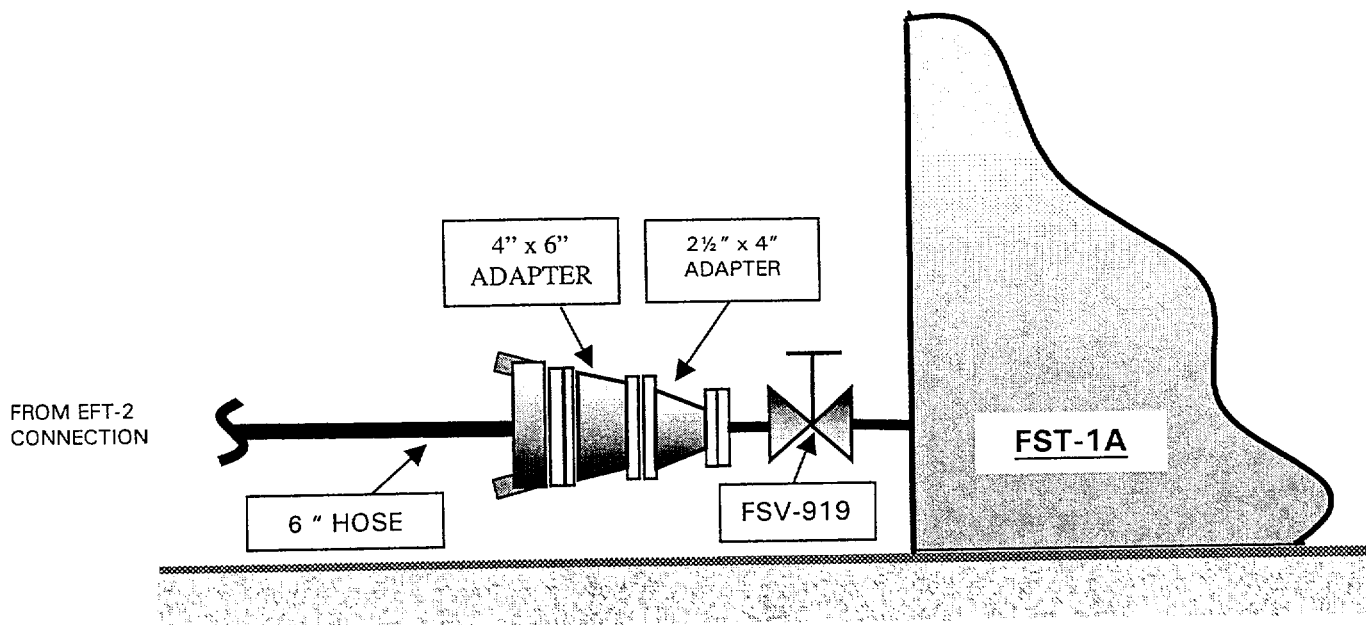


FIGURE 4 - CONFIGURATION OF FST-1A SOUTHEAST SIDE AT THE END OF ENCLOSURE 4, STEP 4.25

# PROCEDURE DEVELOPMENT AND REVISION RECORD

Procedure: EM0225F

New Rev: 2

PRR#: 21359

Title: LONG TERM EMERGENCY FEEDWATER MANAGEMENT

## MINOR CHANGES

If Minor Changes are included, check the applicable box(es) and provide a list of affected steps.  
The following corrections are incorporated throughout:

- |   |   |
|---|---|
| <input type="checkbox"/> Sentence Structure   | <input type="checkbox"/> Redundant words or phrases                 |
| <input type="checkbox"/> Punctuation  | <input type="checkbox"/> Abbreviations                              |
| <input type="checkbox"/> Capitalization   | <input type="checkbox"/> Obviously incorrect units of measure       |
| <input type="checkbox"/> Spelling   | <input type="checkbox"/> Inadvertently omitted symbols (#, %, etc.) |
| <input type="checkbox"/> Organizational Changes: position titles,<br>department names, or telephone numbers | <input type="checkbox"/> Obvious step numbering discrepancies       |
|   | <input checked="" type="checkbox"/> Format                          |

The following corrections are incorporated in the step(s) indicated: "Throughout" is used in lieu of Step# if a specific change affects a large number of steps.

Changing information that is obviously incorrect and referenced correctly elsewhere

Misplaced decimals that are neither setpoint values nor tolerances

Reference to a procedure when an approved procedure has taken the place of another procedure

Fixing branching points when it is clear the branching steps were originally intended but were overlooked or incorrectly stated due to step number changes

Note prior to step 4.1 revised to indicate number of people required to perform the enclosure.

Adding clarifying information such as NOTES and CAUTIONS

Steps 4.3 - 4.11, 4.14 - 4.17, and 4.22 - 4.25 - added detail referencing applicable diagrams provided in Enclosure 17.

Adding words to clarify steps, NOTES, or CAUTIONS which clearly do not change the methodology or intent of the steps

# PROCEDURE DEVELOPMENT AND REVISION RECORD

Procedure: EM0225F      New Rev: 2      PRR#: 21359  
Title: LONG TERM EMERGENCY FEEDWATER MANAGEMENT

## NON-INTENT CHANGES

Changes are incorporated for the reasons provided. "Throughout" is used in lieu of Step # if a specific change affects a large number of steps. For new or cancelled procedures the reason is provided.

2.1.2	Changed revision number of M 99-0027 to reflect latest revision CALCULATION M-99-0027, Revision 6
2.1.7	Step 2.1.7 deleted. Contents of REA 99-1952 (formerly listed as step 2.1.7) incorporated into revision 6 of M 99-0027 (see step 2.1.2 above)
3.3.7	Changed location reference for FW-336-TI from 119 IB to 95 IB to correct error. NUPOST 85167
3.3.9	Added new L&P concerning need to drain steam lines prior to attempting to recover EFP-2 following a SG overflow event. NUPOST 70275
3.3.10	Added new L&P concerning need to maintain EFV-142 open when running EFP-1 or 2 solely from CDT-1 or FST-1A/1B. Calculation M-99-0027, Revision 6 AR 41703
Enclosure 4, step 4.1 (New)	Added new step 4.1 to notify CR when installing temporary transfer line to EFT-2 NUPOST 67889.
Enclosure 4, step 4.3 (Old 4.2)	Revised step to indicate ERT member may verify EFV-36 position NUPOST 66343
Enclosure 7, step 7.1	Step revised to indicate EFP-2 (ASV-50) should be reset using Enclosure 15 (New). Enclosure is a new enclosure added to provide guidance for recovering EFP-2 following a trip. NUPOST 70275
Enclosure 9, step 9.6 (new)	Step 9.6 provides stand alone guidance for starting FWP-7 with suction aligned to CDT-1.
Enclosure 9, step 9.7 (old 9.6)	Step 9.7 (old 9.6) provides guidance for starting FWP-7 with suction aligned to the hotwell. Detail 2 directing that if FWP-7 is not aligned to hotwell ensure suction path exists was deleted and replaced with specific steps (9.6 - 9.8) for aligning FWP-7 to each available suction source.
Enclosure 9, step 9.8 (new)	Step 9.8 provides stand alone guidance for starting FWP-7 with suction aligned to EFT-2. NCR 45113
Enclosure 15 (new)	Added new enclosure 15 to provide stand alone guidance for recovering EFP-2 following an EFP-2 turbine trip. NUPOST 70275

## PROCEDURE DEVELOPMENT AND REVISION RECORD

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Procedure:	EM0225F	New Rev:	2	PRR#:	21359
Title:	LONG TERM EMERGENCY FEEDWATER MANAGEMENT				

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Enclosure 16 (new)	Added new Enclosure 16 which provides guidance for aligning EFP-1 or EFP-3 to the EFW train "B" control valves. NUPOST 93720
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Enclosure 17 (new)	Added new Enclosure 17 which provides diagrams to aid in the installation of temporary transfer line. NUPOST66343
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Enclosure 2 - EFP-3 Running	Added new "solution" option to crosstie EFP-3 to the "B" train EFIC control valves per Enclosure 16 (new) during a loss of "A" train DC power.
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Enclosure 2 - EFP-1 Running	Added new "solution" option to crosstie EFP-1 to the "B" train EFIC control valves per Enclosure 16 (new) during a loss of "A" train DC power.
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