Response to 242-A Evaporator Loss of MCS Control

Changes “Other Than Inconsequential” Require These Additional Reviews:

Radiological Controls
Lee Livesey’s Organization

USQ # EV-18-1986-S, Rev. 0

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<th>CHANGE HISTORY (≤ LAST 5 REV-MODS)</th>
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1.0 AFFECTED PERSONNEL, FACILITIES, EQUIPMENT, OR AREAS

This procedure applies to WRPS personnel operating the 242-A Evaporator Monitoring and Control System (MCS) system and components.

NOTE - Abnormal Operating Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

2.0 ENTRY CONDITIONS

2.1 Loss of MCS Control

2.1.1 Causes for a Loss of MCS Control
- Loss of UPS power supply and failure of the PCMs batteries
- PCMs, DCMs, hardware failures.

2.1.2 Initial indication for loss of MCS control can be one of the following:
- CRT windows on CDCM and DCM0 go blank, but Evaporator process operations continue
- Control Room Operator unable to operate graphic screens from keyboard or mouse on either CDCM or DCM0
- Control Room Operator unable to operate process equipment/components from keyboard, mouse, or graphic screens on CDCM or DCM0
- Time posted on lower right corner of any graphic window does not change over 15 to 30 second time period (the second’s indication should increment every 1 to 5 seconds).
3.0 ACTIONS

NOTE - This is a guide to assist the operator and Shift Manager in placing the facility in a safe configuration.

- Steps in this procedure may be performed simultaneously or in any logical order, depending on situational needs.

- The attached Duty Card is to be completed by the A-1 operator. The Shift Manager has the responsibility to follow and complete all procedural steps. Not all procedural step are included in the duty card.

- Operation of Circuit Breakers, Electrical disconnect Switches, and Similar Switching Equipment shall be performed by a qualified person.

- Component operation requires completion of an Electrical Risk Assessment (ERA).

- When the clean and inspects are current on the electrical equipment (breaker, switchgear, disconnects, motor starters, etc.), the ERA for normal operating condition is applicable, for those workers interacting with electrical equipment.
  - Use safety glasses and leather gloves when manipulating electrical components per the normal ERA.

- When the clean and inspects are delinquent, the ERA for non-normal operating condition is applicable, for those workers interacting with electrical equipment.

3.1 Automatic Actions

NONE

3.2 Initial Actions

3.2.1 ENSURE that the CSM is notified of AOP entry AND

REQUEST CSM to make notifications per TFC-OPS-OPER-C-57.

3.2.2 ISSUE round for backside inspections on desired periodicity.
(See Attachment 2)
3.2 Initial Actions (Cont.)

3.2.3 WHEN performing Step 3.2.3, WRITE time of step completion on the laminated Duty Card AND RECORD time of step completion in the A-1 or Shift Manager logbook.

3.2.4 ENSURE Control Room operator performs required actions per Attachment 1 duty card.

3.2.5 IF Control Room operator is unable to reboot, DECLARE MCS out-of-service.

3.2.6 ENSURE non-essential personnel leave (not evacuate) the facility.

3.2.7 DIRECT Maintenance and Engineering support to the facility to troubleshoot and return MCS control.

3.2.8 NOTIFY LWPF Control Room (373-9000) of any changes in:
   - Steam condensate system
   - Cooling water system status
   - Process condensate system status (stop and restart)
   - Monitoring system status.

Control Room Operator

3.2.9 WHEN performing Step 3.2.10, WRITE time of step completion on the laminated Duty Card AND RECORD time of step completion in the A-1 or Shift Manager logbook.

3.2.10 PERFORM actions per Attachment 1 duty card.

3.3 Follow-on Actions

3.3.1 IF 242-A Shift Manager directs Maintenance and Engineering support to the facility (to troubleshoot and return MCS control), ASSIST as appropriate.

3.3.2 IF Shift Manager so directs, manually SHUTDOWN process operations.

3.3.3 UNTIL remote monitoring capability has been restored to the MCS, CONTINUE Attachment 2 round sheets as directed by Shift Manager.

3.3.4 REQUEST Shift Manager to evaluate the need to notify Environmental per TF-REC-001 and TFC-ESHQ-ENV_FS-C-01.
4.0 EXIT CRITERIA

4.1 Exit Actions/Criteria

4.1.1 MCS control is returned or the Facility is in shutdown mode.

5.0 RECORDS

NOTE - No records are generated during the performance of this procedure.
Response to 242-A Evaporator Loss of MCS Control

Attachment 1 – Loss of MCS Control Duty Card

On both CDCM and DCM:
- No time change on CRT
- Blank CRT
- Lack of keyboard control

Make the following PAX announcements:
- STOP all maintenance activities
- All non-essential personnel LEAVE the facility

NOTIFY 242-A Shift Manager

REBOOT DCMs and CDCM per TO-600-520

IF both DCM and CDCM fail to reboot
DECLARE MCS out-of-service

MCS out-of-service?
YES

NOTIFY Central Shift Manager/CA-1 vessel dump is pending.

WHEN directed by 242-A Shift Manager INITIATE manual shutdown of process operations.

A
**Response to 242-A Evaporator Loss of MCS Control**

**Attachment 1 – Loss of MCS Control Duty Card (Cont.)**

**Time Line**

1. **A**
   - **PRIOR** to operating any electrical breakers **DON**
     - Appropriate PPE.

**PERFORM** the following:
- OPEN feed pump 241-AW-P-102 electrical breaker in cubicle C5 on MCC-1 in AMU.
- OPEN P-B-1 electrical breaker in cubicle A1 on MCC-3 in AMU.
- SHUTDOWN slurry pump P-B-2 via variable frequency drive (VFD) control panel in AMU.

**CLOSE** the following valves:
- H-30 (isolates steam to reboiler)
- HV-H-40 (isolates steam to steam ejectors)

**HV-EA1-4 CLOSED?**
- **No**
  - **CLOSE HV-EA1-4**
- **Yes**
  - **CLOSE valve 5-60** (isolates water to 5-59 (dump line flush) and 5-47 (HV-CA1-2 flush))

**OPEN** the following electrical breakers on MCC-1:
- Breaker in cubicle G6 (isolates pump P-C-106)
- Breaker in cubicle D1 (isolates pump P-C-100)

**OPEN** the following electrical breakers on Panelboard B:
- Breaker 12 (isolates pump P-105)
- Breaker 29 (isolates pump P-105A)
- Breaker 26 (isolates pump P-RC-1)

**Proceed** to follow-on actions in TF-AOP-EVAP-007.

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**Type**: REFERENCE  
**Document No.**: TF-AOP-EVAP-007  
**Rev/Mod**: G-9  
**Release Date**: 01/14/2019  
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## Response to 242-A Evaporator Loss of MCS Control

### Attachment 2 - Temporary Backside Rounds

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#### CONDENSER ROOM INSPECTION
No indications of malfunctioning equipment. (Lack of power to indicating lights, abnormal noises from operating equipment, etc.)

#### HVAC ROOM INSPECTION
No indications of malfunctioning equipment. (Lack of power to indicating lights, abnormal noises from operating equipment, etc.)

#### HOT EQUIPMENT ROOM INSPECTION (use viewing window in AMU room for inspection)
No indications of malfunctioning equipment. (Lack of power to indicating lights, abnormal noises from operating equipment, etc.)

#### WATER SERVICE BUILDING INSPECTION
No indications of malfunctioning equipment. (Lack of power to indicating lights, abnormal noises from operating equipment, etc.)

#### AMU ROOM INSPECTION and MCC BREAKER INSPECTIONS
No indications of malfunctioning equipment. (Lack of power to indicating lights, abnormal noises from operating equipment, etc.)

- **Recirc Pump P-B-1 (MCC-3 Cubicle A1) DISCONNECT:** OFF*/ON**
- **Tank Condensate pump P-C-100 (MCC-1 Cubicle D1) DISCONNECT** OFF*/ON**
- **Condensate Recycle Pump P-C106 (MCC-1 Cubicle G6) DISCONNECT** OFF*/ON**
- **PB2-1-DS DISCONNECT:** OFF*/ON**
- **Seal Water Pump P-C-105 (Panel B, Breaker 12) BREAKER:** OFF*/ON**
- **Pump P-RC-1 Steam Condensate Sample Pump (Panel b, Breaker 26) BREAKER:** OFF*/ON**
- **P-C-105A Seal Water Booster Pump (Panel B Breaker 29) BREAKER:** OFF*/ON**

* - Expected position of breakers/disconnects during SHUT DOWN Mode is OFF.
** - Expected position of breakers/disconnects during OPERATION Mode is ON.

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Operators Initials:

SM Initials:

Desired Periodicity: ____________________________
Comments Page
(This page may be reproduced as necessary)

Record below any comments encountered during performance of the procedure, and a description of any degraded conditions found and resulting actions taken.

Date: ________________

Signature / Print (First & Last) / Date
Shift Manager / OE