

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

EXERCISE NUMBER ROT-9-200 - _____ REQUALIFICATION CYCLE 97 / 05
Year / Cycle

DESCRIPTION: TRAINING EFFECTIVENESS EVALUATION FOR EOP-02,03,08, AP-770,520 & 545

REFERENCES: EOP-02, EOP-03, EOP-08, EOP-13, EOP-14, AP-520, AP-545, AP-770, AI-505

1. **BASIS FOR DEVELOPMENT:**

This scenario was developed to evaluate the effectiveness of EOP training by observing the crew's ability to mitigate a design basis type event with the revised EOPs. The event is an RCS leak on an HPI line coincident with a loss of offsite power and a failure of EDG-1A. The mitigation path for this scenario will exercise portions of EOPs 02, 03, 08, 13, & 14. AP-545 for a FW pump trip and AP-520 for a small RCS leak and AP-770 for an ES under voltage will also be exercised.

2. **SCENARIO OVERVIEW:**

FWP TRIP, SMALL RCS LEAK (40 gpm), HPI LINE BREAK LOCA LOSS OF SCM, LOSS OF OFFSITE POWER. The simulator is initialized at a 100% power MOL condition with nothing tagged out. The crew is informed of an oil leak on FWP-2A. The crew should begin a controlled plant shutdown. At approximately 85% the MFWP trips resulting in an automatic runback to 55%. After AP-545 is completed, a small leak on an HPI line occurs. The crew will enter AP-520 and begin a controlled plant S/D. At approximately 40% power the HPI line leak gets larger. The leak is sized so that a loss of ASCM will occur. The crew will either manually trip the Rx or it will auto trip on low pressure. When the Rx is tripped, a loss of offsite power occurs and EDG-1A fails to start. The crew will perform the immediate actions of EOP-02 and transition to EOP-03 when the inadequate subcooling margin symptom becomes evident. The crew will swap power to the de-energized HPI valves and ensure HPI flow is properly directed. The crew will perform all time critical and follow up steps in EOP-03 and transition to EOP-08 as directed by EOP-03. The crew will also recover EDG-1A and perform load management while starting ES loads per AP-770 and Rule #5.

3. **SCENARIO OBJECTIVES:**

- 1) With the plant initially in mode 1; recognize and respond to a loss of a main feedwater pump. Actions will be in accordance with AP-545.
- 2) With the plant initially in mode 1; recognize and respond to an RCS leak. Actions will be in accordance with AP-520.
- 3) With the plant initially in mode 1; recognize and respond to a small break LOCA on an HPI line concurrent with a loss of offsite power and a failure of EDG-1A. Actions will be in accordance with AP-770, EOP-02, EOP-03, EOP-13, EOP-14 and EOP-08.

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

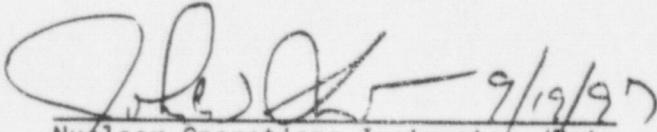
SCENARIO OBJECTIVES (cont'd):

- 4) With a loss of adequate subcooling margin and a loss of the "A" ES 4160V bus; ensure HPI lines are energized and opened within 10 minutes from the loss of ASCM. Actions will be in accordance with EOP-03.
- 5) With a loss of adequate subcooling margin and a loss of power to ESMCC 3AB; ensure HPI flow is properly directed by providing power to and closing MUV-27 and MUV-18 within 20 minutes of the loss of ASCM. Actions will be in accordance with EOP-03.
- 6) With a loss of adequate subcooling margin; ensure HPI flow is properly directed by isolating the leaking HPI line within 20 minutes of the loss of ASCM. Actions will be in accordance with EOP-03.
- 7) With a loss of adequate subcooling margin and a loss of power to the "A" ES 4160V bus; ensure CREVS is operating within 30 minutes of the loss of ASCM. Actions will be in accordance with EOP-03 and EOP-14.
- 8) With an ES 4160V powered by the EDG; ensure EDG load limits are not violated by performing EDG load management. Actions will be in accordance with AP-770 and rule #5.
- 9) With the plant in an Emergency or Abnormal Event; utilize the EOPs and APs in accordance with plant standards. Usage of procedures will be in accordance with AI-505.

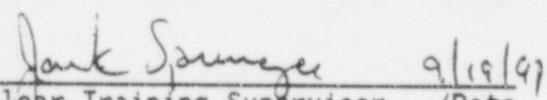
4. PLANT MANIPULATION COVERED:

- PM-7.2 Leaks in and out of the RB.
PM-7.3 Large/small leaks, including leak rate.
PM-7.4 Saturated RCS response.
PM-9 Loss/degraded electrical power sources
PM-15 Loss of normal FW or FW failure.
PM-25 Reactor Trip.

Prepared By:

 9/19/97
Nuclear Operations Instructor /Date

Reviewed By:

 9/19/97
Nuclear Training Supervisor /Date

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

5. PRE-EXERCISE BRIEFING:

- A. Assign students to shift positions as appropriate.
- B. Have students sign attendance records.
- C. Ensure the students have the appropriate procedures.
 - o Copy of procedures, EOPs 02, 03, 08, 13, 14, APs 520, 545 and 770
- D. Discuss the purpose of this exercise, including the following topics:
 - o The crew will be using the revised EOPs for this exercise.
 - o The focus of this training is to evaluate the effectiveness of EOP training and to allow the crews to diagnose and respond to the events in an evaluation environment.
 - o The crew should perform this exercise formally in accordance with Operations procedures, standards, and expectations.
 - o There will be a formal critique at the end of this exercise facilitated by the primary instructor and led by the Shift Supervisor.
 - o The exercise will run until completion with no interruptions or breaks.
 - o Implementation of the emergency plan IS required.

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

6. **EXERCISE SETUP:**

- A. Initialize the simulator to a 100% MOL (IC).
- B. Ensure the IC is modified as follows:
 - 1. Execute and Start Lesson Plan 27 from the LP Misc. file.

7. **EXERCISE OUTLINE:** FWP TRIP, SMALL RCS LEAK (40gpm), HPI LINE BREAK LOCA LOSS OF SCM, LOSS OF OFFSITE POWER. The simulator is initialized at a 100% power MOL condition with nothing tagged out. The crew is informed of an oil leak on FWP-2A. The crew should begin a controlled plant shutdown. At approximately 85% the MFWP trips resulting in an automatic runback to 55%. After AP-545 is completed, a small leak on an HPI line occurs. The crew will enter AP-520 and begin a controlled plant S/D. At approximately 40% power the HPI line leak gets larger. The leak is sized so that a loss of ASCM will occur. The crew will either manually trip the Rx or it will auto trip on low pressure. When the Rx is tripped, a loss of offsite power occurs and EDG-1A fails to start. The crew will perform the immediate actions of EOP-02 and transition to EOP-03 when the inadequate subcooling margin symptom becomes evident. The crew will swap power to the de-energized HPI valves and ensure HPI flow is properly directed. The crew will perform all time critical and follow up steps in EOP-03 and transition to EOP-08 as directed by EOP-03. The crew will also recover EDG-1A and perform load management while starting ES loads per AP-770 and Rule #5.

8. **INSTRUCTOR IMPLEMENTATION:**

- 1. Provide the crew with a turnover.
- 2. Unfreeze the simulator and allow the crew to walk down the control board.
- SPO 3. When the crew ready, trigger the start of FWP-4A. When the crew sends the SPO to investigate, report that a steady stream of oil is running out of the control cabinet on FWP-2A faster than it can be wiped up. [Trigger auto start of FWP-4A, STEP #1]
 - o The crew should begin a plant shutdown per AP-510 or OP-204 to stop the pump.

INSTRUCTOR NOTE: Action steps/directions require a repeat back and confirmation prior to manipulation.

INSTRUCTOR NOTE: Notes and cautions must be read and paraphrased back for applicable steps. Status' need only confirmation of plant conditions.

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

4. When the plant is approximately 85% trigger the FWP trip and observe the crew for the following:
[Trigger FWP failure, conditional STEP #1]
- o Enter AP-545 based on a tripped MFWP.
 - o Stabilize the plant.
 - o Perform the follow up steps of AP-545.
 - o Request technical assistance to recover the FWP. (i.e. FW system engineer, I&C, Electricians etc...)
 - o Notify appropriate personnel per OI-08

5. After the plant is stable and the crew has completed AP-545, trigger the small RCS leak on the HPI line.
[Trigger small RCS leak downstream of MUV-23, STEP #2]

The crew should perform the following:

- o Diagnose the RCS leak, enter AP-520 and perform follow up steps.
- o Estimate the leak rate so the SSOD can determine the appropriate EAL in EM-202.
- o Begin a controlled plant shut down per AP-510 or OP-204.
- o Attempt to isolate sources of leak per AP-520

6. When the Rx power is at approximately 40% the leak size will increase such that the Rx will trip on low pressure and ASCM eventually be lost.
[Trigger, increase leak size downstream of MUV-23, STEP #3]

INSTRUCTOR NOTE: The time critical steps should be evaluated from the time subcooling margin is lost. The crew should expedite performing EOP-03 in order to meet the time critical steps.

The crew should perform the following:

- o Diagnose the increased leak and inform the SSOD and ANSS.
- o Trip the Rx based on increased leakage or low RCS pressure, perform and verify the immediate actions of EOP-02.
[Conditional; LOOP and loss of EDG-1A on Rx trip]
- o Pause to look for symptoms and continue follow up steps in EOP-02.
- o Transition to EOP-03 when the Inadequate subcooling margin symptom becomes evident and verify RCPs are not running.

TIME _____

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

- TIME____ o Ensure HPI lines are energized and opened within 10 min. of ISCM.
- TIME____ o Ensure HPI flow is properly directed by transferring power to MUV-27 and MUV-18 and closing them within 20 minutes of ISCM.
- TIME____ o Ensure HPI flow is properly directed by isolating the leaking HPI line (MUV-23) within 20 minutes of ISCM.
- PPO o Notify PPO to perform enclosure 2.
[Trigger PPO enclosure, STEP #4]
- o Select ISCM on EFIC and ensure EFW is controlling per Rule #3.
- o Ensure EDG load management per AP-770 and rule #5.
- o Ensure CREVS is operating within 30 minutes and the CC chiller is running within 90 minutes of ISCM.
[IF pp. ch]
- PPO
MECH 7. o Transition to EOP-08 and perform the follow up steps of EOP-08.
7. After the crew transitions to EOP-08 call the control room and inform them that the EDG has a tripped fuel rack, it can be reset, and nothing else appears to be wrong.
[IF pp. edg]
- The crew should perform the following:
- o Ensure the EDG is recovered per AP-770.
- o Ensure EDG load management is performed prior to starting ES equipment.
- o Ensure EFP-1 and MUP-1B is properly loaded on to the EDG.
8. The SSOD should perform the following:
- o Make plant notifications per OI-08.
- o Request maintenance assistance for faulted equipment.
- o Solicit crew input for major decisions as time permits.
- o Acknowledge and concur with all transitions into EOPs and APs.
- o Hold shift briefings or status updates at timely intervals.
- o Maintain and communicate the "big picture" for event mitigation.

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

- o Ensure shift resources are allocated to provide for continuous progression through the EOPs.
 - o Ensure crew is maintaining communication protocol.
 - o Ensure crew is maintaining EOP usage protocol per AI-505.
 - o Enter TS 3.4.12 for RCS leakage and begin a plant shutdown.
 - o Review Eplan for highest action level during LOOP, LOCA, loss of EDG. Site Area Emergency for loss of RCS > 1000 gpm.
 - o Ensure state notifications are performed within 15 minutes.
9. Stop the exercise when ES loads are placed on EDG-1A and crew has reached the status prior to step 3.18 in EOP-08.
[FREEZE]

ATTACHMENT 1
ROT-9-200 INSTRUCTIONAL OUTLINE

9. SHIFT TURNOVER

A. The following are the initial plant conditions:

- 1) Time in core life - 300 EFPD
- 2) Rx power and power history - 100% power for last 30 days
- 3) Boron concentration - 1098 PPMB
- 4) Xenon - equilibrium
- 5) RCS Activity - See status board.

B. Tech. Spec. action requirement(s) in effect:

None.

C. Clearances in effect:

None.

D. Significant problems/abnormalities:

None.

E. Evolutions/maintenance for the on-coming shift:

None.

F. Units 1 and 2 status: On line

G. Units 4 and 5 status: On line

H. SSOD - Instruct the ROs to walk down the main control board and provide you with the following data:

- | | | | |
|----------------------------|-------|-----------------------|-------|
| 1. RCS Average Temperature | _____ | 4. Make-up Tank Level | _____ |
| 2. RCS Pressure | _____ | 5. Turbine Load | _____ |
| 3. Pressurizer Level | _____ | 6. Turbine Reference | _____ |

I. Required Emergency Plan Implementation:

Classifications, initial and upgrade notifications to the state, and internal notifications.

J. The STA should start this exercise OUT of the Control Room.

K. The in-plant CNO should start this exercise OUT of the Control Room.

L. The SSOD should start this exercise OUT the Control Room.

ATTACHMENT 2
 PLANT CONTROL MANIPULATIONS SIMULATOR MANIPULATION RECORD
 (Facsimile of Form 203.7)

EXERCISE NO. ROT-9-200

EXERCISE TITLE: SPECIAL SIMULATOR TRAINING

REVISION: 00

I. Completion of this exercise fulfills the following TDP-203 requirements for Plant Manipulations (PM):

Individual PMs (PMs 1, 3 & 5)

Crew FMs

- PM-7.2 Leaks in and out of the RB.
- PM-7.3 Large/small leaks, including leakrate.
- PM-7.4 Saturated RCS response.
- PM-9 Loss/degraded electrical power sources
- PM-15 Loss of normal FW or FW failure.
- PM-25 Reactor Trip.

Name	SS Number	PM-							

Scenario Description: _____

Date Performed: _____

COMMENTS: _____

Instructor/Date: _____
 Routing: Original -> TIS Entry -> Records Management ->

SS Number _____
 Copy -> Individual File

TRAINING RECORDS MANAGEMENT
ATTACHMENT 1
NUCLEAR OPERATIONS TRAINING DEPARTMENT

QUALITY RECORDS TRANSMITTAL NO. _____

Date of Transmittal: _____

ATTENTION: Nuclear Operations Records Manager
Crystal River Unit No. 3

DOCUMENTS TRANSMITTED: 1

DOCNO=CERT ROT-9-200

SEC 97-C5 (year-cycle, 96-C2)

REF EOP-02, EOP-03, EOP-08, EOP-13, EOP-14, AP-520, AP-545, AP-770, AI-505
(document references)

ADDITIONAL TITLE Licensed Operator EOP Training Evaluation (Keyword Description)

The quality assurance records listed above are hereby transmitted for inclusion in the Nuclear Plant Quality Document file.

Insofar as possible, these records are complete, legible, and in compliance with the requirements of FPC's Quality Programs.

Future retention of these records is your responsibility.

This form prepared by: _____
Nuclear Operations Training Specialist - NU-47