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NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

02-LOT-006-344-02-10 Revision ~~0~~ 3 GK 12/13/90

TITLE: EMERGENCY OPERATING PROCEDURES, SECONDARY CONTAINMENT CONTROL (SCL)

	SIGNATURE	DATE
PREPARER	[signature]	12-4-90
TRAINING SUPPORT SUPERVISOR	[signature] for J. LeBlanc	12-4-90
TRAINING AREA SUPERVISOR	[signature]	12-5-90
PLANT SUPERVISOR/ USER GROUP SUPERVISOR	[signature] FOR D TOOLEY	12/10/90

Summary of Pages

(Effective Date: 12/10/90)

Number of Pages: 13

Date	Pages
December 1990	1 - 13

TRAINING DEPARTMENT RECORDS ADMINISTRATION ONLY:

VERIFICATION: _____ _____

DATA ENTRY: _____ _____

RECORDS: _____ _____

15 5/3/267

ATTACHMENT 6
LESSON PLAN TEMPORARY/PUBLICATION/ADDENDUM CHANGE FORM

The attached change was made to:

Lesson plan title: Emergency Operating Procedures, Secondary Containment Control (SCC)

Lesson plan number: 02-LOT-0006-344-2-10

Name of instructor initiating change: D. Penfield

Reason for the change: Change Revision # to Rev. 3 due to typographical error

Type of change:

1. Temporary change ____
2. Publication change X
3. Addendum change ____

Disposition:

X 1. Incorporate this change during the next scheduled revision.

____ 2. Begin revising the lesson plan immediately. Supervisor initiate the process.

____ 3. To be used one time only.

Approvals:

Instructor: [signature] /Date 12-12-90

Training Area Supervisor (or designee): J. Kaminski /Date 12-13-90

I. TRAINING DESCRIPTION

A. Title of Lesson: Emergency Operating Procedures., Secondary Containment Control (SCL)

B. Lesson Description: This lesson plan discusses the actions taken to control Secondary Containment Water Level.

C. Estimated Duration of the Lesson: 1 hour

D. Method of Evaluation, Grade Format, and Standard of Evaluation: Written Examination with 80% minimum passing grade.

E. Method and Setting of Instruction: Classroom Lecture

F. Prerequisites:

1. Instructor:
   a. Certified in accordance with NTP-16.
2. Trainee:
   a. Certified in accordance with NTP-10.

G. References:

1. BWROG Emergency Procedure Guidelines, Rev. 4
2. Plant Procedure N2-EOP-SCL, Rev. 4

II. REQUIREMENTS

A. AP-9, Administration of Training

B. NTP-10, Training of Licensed Operator Candidates

III. TRAINING MATERIALS

A. Instructor Materials:

1. Transparencies Package
2. Overhead Projector
3. Whiteboard and Felt Tip Markers
4. EOP Flow Chart for SCL
5. Training Record

B. Trainee Materials:

1. EOP Flowchart for SCL
2. Course Evaluation Form

IV. EXAM AND MASTER ANSWER KEYS

Will be generated and administered as necessary. They will be on permanent file in the Records Room.

V. LEARNING OBJECTIVES

Upon completion of this training, the trainee will have gained the knowledge to perform the following:

A. Terminal Objectives:

TO-1.0 Given conditions requiring the use of the Emergency Operating Procedure, use the procedure to place the plant in a stable condition as prescribed in the procedure.

TO-2.0 (SRO ONLY) Direct the actions required per N2-EOP-SC Section SCL. (3449470603)

TO-3.0 Perform the actions required for a steam line rupture. (2000400501)

TO-4.0 Perform the actions required for a large break LOCA, outside the Primary Containment. (2009120501)

TO-5.0 Perform the actions required for a general area flooding in the Reactor Building. (2009230501)

TO-6.0 Perform the actions required for a Reactor Building sump level hi-hi. (2009240501)

TO-7.0 Scram the reactor manually and take immediate actions. (2010130101)

TO-8.0 Restore Reactor Building ventilation following an isolation. (2889040101)

B. Enabling Objectives:

EO-1.0 State the purpose of the Reactor Building Level Control Procedure.

EO-2.0 State the entry conditions for the Reactor Building Level Control Procedure.

EO-3.0 Given the procedural step, discuss the technical basis for that step.

VI. LESSON CONTENT

LESSON CONTENT	DELIVERY NOTES	OBJECTIVES/ NOTES
I. INTRODUCTION	Preliminary Activities: 1. Introduce self to class (if unfamiliar). 2. Distribute TR for completion. 3. Distribute Course Evaluation Forms and describe their use. 4. Discuss Method of Evaluation.	
A. Student Learning Objectives	Review Learning Objectives with the class.	
B. Purpose To provide the actions necessary to control Reactor Building water levels to: • Protect equipment in the Reactor Building • Limit radioactivity release to the Reactor Building, and either • Maintain Reactor Building integrity, or • Limit radioactivity release from the Reactor Building.		EO-1.0
C. Procedure Overview 1. The Reactor Building Radiation Control procedure is executed concurrently with the following procedures: a. N2-EOP-SCT Reactor Building Temperature Control b. N2-EOP-SCR Reactor Building Radiation Control 2. The symptomatic approach to emergency response, where the initiating event of the transient is not known in advance demands concurrent execution of these procedures.		

3. The values and trends of parameters, and the status of plant equipment during the event will dictate the order of execution of each flowpath.

II. DETAILED DESCRIPTION

A. Entry Conditions

1. Setpoints

a. The conditions which require entry into this procedure are:

1) Differential pressure at or above 0 in. of water.

- Indicates a potential loss of Secondary Containment structural integrity, which could result in uncontrolled release of radioactivity.

2) Area temperature above an isolation setpoint.

- Indicates steam may be discharging from Primary System. Increasing area temperatures may compromise equipment needed to carry out EOP actions, and may limit access by personnel.

NOTE: TP's may be used to highlight points of interest on flowchart; use TP's to show procedural steps if flowchart not used. EO-2.0

3) Area radiation level alarm unexpectedly high.
   - Indicates water may be leaking from a Primary System.

4) HVR exhaust radiation level above an isolation setpoint.
   - Indicates radioactivity may be discharging to the environment when HVR should have automatically isolated.

5) Floor Drain Sump water level high-high.
   - Indicates steam water, or both may be discharging to the Secondary Containment.

b. The occurrence of any one of these conditions requires entry into this procedure.

c. If an entry condition clears prior to exiting this procedure, and then re-occurs, re-entry at the beginning of the procedure is required.

d. If a second entry condition occurs while performing the procedure, re-entry at the beginning is again required.

e. If all entry conditions clear while executing this procedure, this procedure may be exited.

2. Setpoint Bases

a. The values selected were chosen on the basis of being simple, readily identifiable and operationally significant. They also provide advance warning of potential emergency conditions, allow action to be taken which may prevent more severe circumstances.

B. Procedural Steps

1. Activate the emergency plan, if required, IAW EAP-1.

- It is appropriate to activate the E-Plan, should plant conditions be at the action levels specified in EAP-1.

2. While executing the following steps:

a. IF

HVR exhaust radiation level exceeds an isolation setpoint

THEN

1) Confirm or manually initiate isolation of HVR.

2) Confirm isolation of or manually initiate SBGT.

- Confirming isolation of Rx Building HVAC will ensure termination of any release of radioactivity to the environment from this system. EO-3.0
- SBGT is the normal means employed under post-transient conditions for maintaining a negative Secondary Containment pressure. Exhaust from SBGT is processed prior to discharge through an elevated release point. EO-3.0

b. IF
HVR isolates
AND
HVR exhaust radiation level is below the isolation setpoint
THEN
Restart HVR - If necessary, defeat high drywell pressure and low RPV water level isolation interlocks (EOP-6, Att. 26).

- If Rx Building HVAC is isolated it is appropriate to restart this system and use it to regain control of Rx Building temperature and pressure once it has been confirmed that restart will not result in excessive radioactivity release.

EO-3.0

3. Monitor and Control Reactor Building Water Levels

- Provides a smooth transition from general plant procedures to EOPs.
- Assures normal methods have been employed prior to more complex actions.

EO-3.0

4. WAIT until a RB floor drain sump is above its high-high level setpoint.
   - Delaying the performance of the subsequent actions in this procedural leg confirms that Reactor Building floor drain sump level is increasing and further action is required.

EO-3.0

5. Operate available sump pumps to restore and maintain it below high-high level setpoint.
   - Simply stated, this step takes normal actions to restore sump level before more drastic actions are taken.

EO-3.0

6. IF
   Any floor drain sump cannot be restored and maintained below its high-high level setpoint
   THEN
   Isolate all systems that are discharging into the sump or area <u>except</u> systems required to shutdown the reactor OR assure adequate core cooling OR suppress a fire.
   a. Systems that are discharging to the Secondary Containment are isolated to terminate the rise in area water level.

EO-3.0

b. Isolation of fire fighting systems is not appropriate because of the potential threat fires pose to safe plant operation.

c. Systems necessary to shutdown the Rx, assure Primary Containment integrity, assure adequate core cooling are not isolated because doing so may complicate the Secondary Containment control efforts.

7. Perform steps #8 * #10 Concurrently

8. WAIT until more than one RB area water level exceeds flooding alarm levels.
   - Flooding alarm levels are the Maximum Safe Operating Water Level.
   - More than one RB area indicates a wide spread problem.

EO-3.0

9. Shutdown the reactor (OP-101C/D)
   - Places the reactor in the lowest energy state by normal means.

EO-3.0

10. WAIT until a Primary System is discharging into the Reactor Building.
    - By the time this step is reached, at least one of the following conditions exist:

Q: What is the definition of a "Primary System"?

A: The pipes, valves and other equipment which connect directly to the RPV such that a reduction in RPV pressure will decrease the steam or water being discharged through an unisolated break in the system.

EO-3.0

- System has not been isolated due to adequate core cooling, shutdown of the reactor or protecting Primary Containment integrity.
- Isolation not possible, ie. no isolation valve or valve inop.
- Source of discharge not known.

11. BEFORE any RB area water level reaches flooding alarm level.
    - Flooding alarm is the Maximum Safe Operating Level. EO-3.0
12. Enter RPV Control and execute it concurrently with this procedure.
    - Places reactor in the lowest energy state, decay heat level, by scram and provides the means for depressurization, if required. EO-3.0
    - In addition, with the reactor shutdown the "offending" system may no longer be required for adequate core cooling, shutdown of the reactor, or protect Primary Containment integrity.

Note: Review definition of "Primary System". EO-3.0

13. WAIT until more than one RB area water level exceeds flooding alarm levels.
    - More than one area indicates a wide spread problem.

EO-3.0

14. Emergency RPV Depressurization is required.
    - Rapidly places the reactor in a depressurized state to minimize flow out the break.

EO-3.0

Q: What is the purpose of EOP-SCT?

A: To provide the actions necessary to control Reactor Building temperature.

Q: What are the entry conditions of EOP-SCT?

A:
- Differential pressure at or above 0 in. of water
- Area temperature above an isolation setpoint
- Area radiation level alarm unexpectedly high
- HVR exhaust radiation level above an isolation setpoint
- Floor drain sump water level high-high

III. WRAP-UP

A. Summary

Action in the Reactor Building water level control procedure monitors and controls water inventory in areas of the Secondary Containment using, initially, the systems normally employed for this function. If area water levels cannot be restored and maintained below the high-high level setpoint in any one area, systems that are discharging into that area (other than those required to shut down the reactor, assure adequate core cooling, or suppress a working fire) are isolated. If Secondary Containment water level continues to increase, a Primary System is discharging into the area, and the ECCS equipment room flooding alarm level is exceeded in more than one area, Emergency RPV Depressurization is required. If the water level problem is not due to a Primary System discharge but is wide spread, then a normal reactor shutdown is directed.