

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

02-REQ-006-344-2-15 Revision 4

TITLE: EMERGENCY OPERATING PROCEDURE, STEAM COOLING (C-3)

	<u>SIGNATURE</u>	<u>DATE</u>
PREPARER	<u>[Signature]</u>	<u>8/30/90</u>
TRAINING SUPPORT SUPERVISOR	<u>[Signature]</u>	<u>9-28-90</u>
TRAINING AREA SUPERVISOR	<u>[Signature]</u>	<u>9/6/90</u>
PLANT SUPERVISOR/ USER GROUP SUPERVISOR	<u>[Signature]</u>	<u>9/7/90</u>

MASTER
Summary of Pages
(Effective Date: 9/28/90)
CONTROLLED
Number of Pages 6
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DOCUMENT

TRAINING DEPARTMENT RECORDS ADMINISTRATION ONLY:

VERIFICATION: _____
DATA ENTRY: _____
RECORDS: _____

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PDR ADOCK 05000410
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I. TRAINING DESCRIPTION

- A. Title of Lesson: Emergency Operating Procedure, Steam Cooling (C-3)
- B. Lesson Description: This lesson discusses the actions taken to provide core cooling with no RPV injection available.
- C. Estimate of the Duration of the Lesson: Approximately 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:
 - 1. Classroom Lecture
 - 2. Assign the Student Learning Objectives as review problems with the students obtaining answers from the text, writing them down and handing them in for grading.
- F. Prerequisites:
 - 1. Instructor:
 - a. Qualified in instructional skills per NTP-16 and/or 16.1.
 - 2. Trainee:
 - a. In accordance with NTP-10 and NTP-11 or
 - b. Be recommended for this training by the Operations Superintendent or his designee or by the Training Superintendent.
- G. References:

BWROG Emergency Procedure Guidelines, Rev. 4,
Plant Procedure N2-EOP-C3

II. REQUIREMENTS

- A. AP-9, Administration of Training
- B. NTP-10, Training of Licensed Operator Candidates
- C. NTP-11, Licensed Operator Requalification Training



III. TRAINING MATERIALS

A. Instructor Materials:

1. Transparencies Package
2. Overhead Projector
3. Whiteboard and Felt Tip Markers
4. EOP Flowchart for RP

B. Trainee Materials:

1. EOP Flowchart for RP

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

A. Terminal Objectives:

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

B. Enabling Objectives:

EO-1.0 State the purpose of the Steam Cooling Procedure.

EO-2.0 State the entry conditions for the Steam Cooling Procedure.

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



I. INTRODUCTION

A. Student Learning Objectives

B. Purpose

The action specified in this procedure utilize steam cooling to maximize the time that the core remains adequately cooled under conditions where no RPV injection source is available.

EO-1.0

II. DETAILED DESCRIPTION:

A. Entry Conditions

This procedure is only entered as directed from other emergency operating procedures.

EO-2.0

B. Procedural Steps

1. While executing the following steps:

IF

Emergency RPV Depressurization is required

OR

RPV water level cannot be determined.

OR

Any system, injection subsystem, or alternate injection subsystem is lined up for injection with at least one pump running

THEN

Exit this procedure and enter Contingency #2, Emergency RPV Depressurization.

Show entry point into C-2.



- This step must be kept in mind throughout the performance of this procedure.
- If any injection system becomes available, the RPV is depressurized to:
 - Maximize injection flow
 - Terminate the upper core region heatup by increased steam flow and the resulting water level swell.
- This Procedure's actions are predicated on level indication being available. If it is not, action must be taken immediately.
- Consequences of not depressurizing the RPV when required could include failure of the primary or secondary containment. Therefore, depressurization takes precedence over maintenance of optimum steam cooling.

EO-3.0

EO-3.0

2. WAIT

Until RPV water level drops to -55 in.

- This is the Minimum Zero Injection Water Level.
- To this point, sufficient steam is produced to maintain peak clad temperature less than 1800°F.

Defined in EOP overview.

EO-3.0



- Waiting to this point provides time to line up sources of injection.
3. Exit the procedure and enter Contingency #2 Emergency RPV Depressurization.
- The increased steam flow will increase core heat removal and reduce fuel temperature temporarily.
- Show entry point into C-2.

EO-3.0

III. WRAP-UP

A. Summary

Actions specified in this procedure utilize steam cooling to maximize the time that the core remains adequately cooled under conditions where no RPV injection source is available. Boil-off of the coolant inventory remaining in the RPV is controlled to optimize heat transfer from the fuel to the steam flowing up through the fuel assemblies. The amount of heat removed from the fuel is a function of fuel temperature and mass flow rate of the steam through the core.

