PROCEDURES GENERATION PACKAGE

NINE MILE POINT UNIT II NUCLEAR GENERATING STATION

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this Procedures Generation Package (PGP) is to describe the emergency operating procedures (EOPs) development at Nine Mile Point Nuclear Generating Station, Unit 2. Unit 2 is a boiling water reactor nominally rated at 1080 MW.

1.2 SCOPE

This document was developed in response to Supplement 1. to NUREG-0737, Item 7.2b, page 15.

1.3 ORGANIZATION

This document consists of the following six parts:

- o Introduction
- o Plant-Specific Technical Guidelines/Plant-Specific EOP's
- o Writers Guide for EOP's
- o EOP Verification Program
- o EOP Validation Program
- o EOP Training Program

Each part describes the approach taken as part of the overall EOP Implementation Plan for the Nine Mile Nuclear Generating Station, Unit 2.

2. PLANT-SPECIFIC TECHNICAL GUIDELINES/PLANT-SPECIFIC EOP's

2.1 GENERAL

The following program for converting the General Electric Emergency Procedures Guidelines (EPGs) into EOPs has been developed and will be used for Nine Mile Point Unit 2.

The EPGs, revision 3, dated December 8, 1982, will be used for initially implementated EOP's. Revision 3 of the guidelines has been reviewed and accepted by the Nuclear Regulatory Commission, as noted in the staff's November 23, 1983 Safety Evaluation Report.

The following items were considered in the methodology to be used to produce a Plant-Specific Technical Guideline and Plant-Specific EOP's.

- o the mechanics of conversion
- o the identification of the plant-specific technical information
- o the method to incorporate plant specific technical information
- o documentation requirements
- o the use of background information supplied with technical guidelines

The personnel involved in the development of the plant specific technical guidelines and EOPs (EOP writing team) are members of the plant operating staff.

2.2 PROGRAM DESCRIPTION

2.2.1 PREPARATION OF A PLANT-SPECIFIC GUIDELINE

The designated EOP writing team will obtain and review the following plant-specific technical information (EOP source documents):

- o General Electric EPGs, revision 3, with appendices A, B and C
- o Unit 2 FSAR
- o Normal Operating Procedures
- o Technical Specifications proposed for Unit 2
- o Plant-specific drawings which form the data base for testing and operation of Unit 2
- o Engineering approved vendor documents

The EOP writing team will follow the EPGs step-by-step, adding plant-specific information where required, and making deletions as required. Additions or deletions will be documented, along with justifications, on the form included as Figure 1. These forms (EPG Change Forms) will be considered part of the plant-specific guideline. The Plant-Specific Guideline, EPG Change Forms and calculations performed to determine specific limits and curves will receive an independent review, as described in the Verification Program, to assure technical accuracy.

A draft of the plant-specific guideline is included as Attachment 1 to this document.

2.2.2 PREPARATION OF EOP's

The EOP writing team will follow the plant-specific guideline step-by-step and, using the Nine Mile Point Unit 2 EOP Writers Guide (see Section 3 of this document), produce a set of plant-specific EOPs. Differences between the guideline steps and EOP steps will be documented, with justification, on the form included as Figure 2.

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

DESCRIPTION OF CHANGE:

JUSTIFICATION:

E.O.P. WRITER: _____
DATE: _____

FIGURE 1

____ EOP ____ Rev. ____
Page ____ of ____

STEP DOCUMENTATION

EOP STEP:

NMP II
EPG STEP:

JUSTIFICATON OF DIFFERENCES:

EOP WRITER: _____ DATE: _____

FIGURE 2

3. WRITERS GUIDE FOR EOPs

3.1 GENERAL

A writers guide for EOPs is a plant-specific document that provides instructions on writing EOPs, using good writing principles. In addition to establishing sound writing principles, the guide helps to promote consistency among all EOPs and their revisions, independent of the number of EOP writers.

The writers guide will be revised, as necessary, based on feedback from verification, validation, operator training and experience.

3.2 DOCUMENT DESCRIPTION

Information on the following items is included in the plant-specific writers guide for EOPs.

- o EOP format
- o EOP organization
- o EOP level of detail
- o EOP content
- o mechanics of style

The Nine Mile Point Unit 2 Writers Guide for Emergency Operating Procedures is based on the industry document Emergency Operating Procedures Writing Guideline (INPO 82-017) July 1982, developed by the Emergency Operating Procedures Implementation Assistance (EOPIA) Review Group and published by INPO. The Nine Mile Point Unit 2 Writer's Guide is provided as Attachment 2.

4. EOP VERIFICATION PROGRAM

4.1 GENERAL

EOP verification is the evaluation performed to ensure that applicable generic and plant-specific technical information has been incorporated properly. This evaluation also checks that the human factors aspects presented in the writers guide for EOPs have been applied.

An approved Verification Procedure will be developed prior to formal verification of the Plant-Specific Guideline and EOP's. This will assure the necessary level of documentation and provide specific definitions, instructions and evaluation criteria for the verification process.

4.2 PROGRAM DESCRIPTION

The following major items will be considered during the development of the EOP verification program:

- o the method of EOP verification
- o the method of EOP verification process documentation
- o the process used in resolving discrepancies

The verification program will be based on the industry document. Emergency Operating Procedures Verification Guideline (INPO 83-004) March 1983, developed by the EOPIA Review Group and published by INPO.

The Nine Mile Point Unit 2 Verification Procedure for Emergency Operating Procedures will address the following objectives:

- o Plant-Specific Guidelines are technically correct, i.e., plant-specific numbers are consistant with source documents, calculational procedures are correct.
- o EOPs are technically correct, i.e., they accurately reflect the technical guidelines and other EOP source documents.
- o EOPs are written correctly, i.e., they accurately reflect the plant-specific writers guide.
- o Procedures and the control room/plant hardware are compatible.
- o The language and level of information presented in the EOPs are compatible with the qualifications, training, and experience of the operating staff.

Documented results and recommendations will be returned to the EOP writing team for disposition.

5. EOP VALIDATION PROGRAM

5.1 GENERAL

EOP Validation is the evaluation performed to determine that the actions specified in the procedure can be performed by the operator to manage emergency conditions effectively.

An approved Validation Procedure will be developed prior to formal validation of EOP's. This will assure the necessary level of documentation and provide specific definitions, instructions and evaluation criteria for the validation process.

5.2 PROGRAM DESCRIPTION

The following major items will be considered during the development of the EOP validation program:

- o the method of EOP validation
- o the method of use of the simulator, walk-throughs, and table-top evaluation
- o the method of integrating operating and training experience into the program evaluation
- o the evaluation criteria to be applied and the methods to be followed in resolving discrepancies
- o the method of EOP validation documentation

5.3 The program will be based on the industry document Emergency Operating Procedures Validation Guidelines (INPO 83-006) July 1983, developed by the EOPIA Review Group and published by INPO. The Nine Mile Point Unit 2 Validation Procedure for Emergency Operating Procedures addresses the following objectives:

- o EOPs are useable, i.e., they can be understood and followed without confusion, delays, and errors.
- o procedures and the control room/plant hardware are compatible.
- o the instructions presented in the EOPs are compatible with the shift manpower, qualifications, training, and experience of the operating staff.
- o procedures will work, i.e., the procedures guide the operator in mitigating transients and accidents.

Documented results and recommendations will be returned to the EOP writing team for disposition.

6. EOP TRAINING PROGRAM

6.1 GENERAL

The EOP training program will be developed to support implementation of the EOPs. The EOP writing team will interface with the Training Department to ensure a cohesive program.

6.2 Program Description

The following major items will be considered during the development of the EOP training program.

- o the type of operator training provided (initial, refresher)
- o the method of operator training followed
- o the operator knowledge and skill level desired
- o the procedure tasks that exist that require operator decision-making
- o the training material needed to support EOP training requirements
- o the current operator licensing requirements
- o the method provided for operator feedback into the training program and EOP development

EOP training will also be incorporated into the non-licensed operator training program to assure familiarization through-out the operating staff.

6.3 TRAINING PROGRAM GOALS

The initial, overall training goals for the EOP training program will be as follows:

- o to establish operator understanding of the EOPs
- o to establish operator understanding of the technical bases of the EOPs
- o to provide the operators with a working knowledge of the technical content of the EOPs
- o to prepare the operators for the use of the EOPs under operational conditions

Training program objectives to support these goals will be developed for each lesson plan.

6.4 INITIAL EOP TRAINING METHODS

The EOP training program will be established to instruct operators in the EOPs. It consists of classroom instruction, control room walkthroughs, and simulator exercises (when the plant reference simulator is available). The initial training program for Nine Mile Point Unit 2 will be during the cold license program to support plant start-up.

6.4 (Cont.)

Concurrent with the development of the Plant-Specific Guideline and EOP's, a Training Guide will be developed. The Training Guide will contain the following:

- o G.E. BWR owners Group Generic Emergency Procedure Guideline.
- o The Plant-Specific Guideline (including Addition/Deletion Forms).
- o The step documentation forms (Specific Guideline to EOP).
- o The EOP's.
- o A step-by-step breakdown of the technical bases for the EOP decisions and operator actions.
- o The calculational procedures and references for data used in developing EOP's.

Using the Training Guide, the Training Department, assisted by the EOP Writing Team where required, will develop lesson plans for the classroom instruction portion of the Training Program.

6.4.1 CLASSROOM INSTRUCTION

Classroom instruction sessions will be conducted. Included in the information presented during this instruction will be the following:

- o the logic behind the development of EOPs
- o the process used to develop the EOPs
- o the EOPs themselves, including supporting technical and human factors information

6.4.2 CONTROL ROOM WALK-THROUGHS

An important part of the instructions on EOPs will be the practical experience gained through procedure walk-throughs in the control room. During this training, the team approach to using EOPs will be stressed. This walk-through training will also concentrate on information flow and interactions of the operators in the control room.

6.4.3 SIMLULATOR EXERCISES

Training on the EOPs will be conducted for license candidates and (subsequently) licensed operators using scenarios on plant reference simulator (when it is operational). Training will be conducted with all operators performing their normal control room functions. Additional training will be conducted where the members of a crew alternate responsibilities. This additional training is important to promote understanding of the other operators' responsibilities in the overall conduct of the actions, and it should lead to enhanced communications within the control room. Until the plant reference simulator is completed, complicated scenarios will be discussed during classroom instruction and control room walk-throughs.

6.5 REFRESHER TRAINING

All licensed operators will be involved in control room walk-throughs using the EOPs during refresher training. The walk-throughs will be conducted either in the control room or on the plant reference simulator. Realistic scenarios will be developed to ensure that the critical aspects of the EOPs are exercised.

Training on EOPs will be conducted in such a manner that each crew conducts the walk-throughs with each operator simulating the actions that he normally would be responsible for during an emergency incident. Certain licensed operators not assigned to a shift will participate in the walk-throughs as part of a control room crew.

The plant training and operations staff will participate in the development and execution of refresher training. The training staff is responsible for developing scenarios, observing and documenting the walk-throughs, and critiquing the results.

The scenarios will be varied sufficiently to ensure the operators do not develop a set pattern of responses to incidents but are able to respond to the symptoms as they develop.

6.6 TRAINING ON REVISIONS

Training on minor procedure revisions will be conducted through a program of required readings (self-taught), preshift briefings, or lectures in the requalification program. Training on major revisions will be conducted by the use of classroom instruction and walk-throughs in the control room or on the plant reference simulator.

6.7 TRAINING PROGRAM CHANGES

6.7.1 SUPPORTING TRAINING MATERIAL CHANGES

Training material will be updated to reflect revisions to EOP's. Changes will be factored into updated lesson plans in a timely manner.

6.7.2 OPERATOR FEEDBACK

Operator feedback resulting from EOP verification, EOP validation, and training will be used to keep the training program and EOPs current and accurate.

6.8 DOCUMENTATION

Classroom, Control Room and Simulator Training for EOP's will be documented. This documentation will be maintained in the Training Department records.

PLANT SPECIFIC EPG

5/2/84

ATTACHMENT 1

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

Caution #7

DESCRIPTION OF CHANGE:

Caution #7 was deleted.

JUSTIFICATION:

No Heated Reference Log Level Inst. are utilized at NMP Unit II.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

Caution #8

DESCRIPTION OF CHANGE:

Caution #8 (which became Caution #7 in the Specific Procedure Guideline) was change from a graphic depiction of NPSh requirements to a statement of minimum requirements based on pump design data.

JUSTIFICATION:

The RHR, LPCS and HPCS pumps are designed to have a minimum NPSh requirement of 15 feet at 2 feet above the pump mounting flange when suppression pool temperature is 212°, corresponding to a suppression pool level of 192 feet. RCIC required NPSH is limited by 170° suppression pool temperature and not suppression pool level (at 170°, required NPSH is maintained until the suction strainer is uncovered).

The statements will simplify operator interpretation of requirements.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

Caution #23

DESCRIPTION OF CHANGE:

Caution #23 was deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.
NMP Unit II utilizes a Mark II Containment.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

RC/L-1

DESCRIPTION OF CHANGE:

- o (Emergency Diesel Generator) was deleted.

JUSTIFICATION:

Emergency diesel generators will not normally be required. They are a standby source of power, in case the two offsite 115KV sources are lost. Verification of power to the Emergency Busses will be considered part of the procedure to manually start pumps or systems.

E.O.P. WRITER: _____

DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

Primary Containment Control Guideline - Entry Conditions

DESCRIPTION OF CHANGE:

- Containment temperature above (90°F [containment temperature LCO]) - deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.

NMP Unit II utilizes a Mark II Containment.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

PC/P-1

DESCRIPTION OF CHANGE:

- Containment pressure control systems. Use containment pressure control system operating procedure.

This action deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

SP/L-3.2-1.

DESCRIPTION OF CHANGE:

Step SP/L-3.2:1 including caution and graph are deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.
NMP Unit II utilizes a Mark II Containment.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

SP/L-3.2-2.

DESCRIPTION OF CHANGE:

Step SP/L-3.2-2, including caution, has been deleted.

JUSTIFICATION:

Not applicable to NMP Unit II.
NMP Unit II utilizes a Mark II Containment.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C1-2

DESCRIPTION OF CHANGE:

(o Interconnections with other units)

This action is deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C1-2

DESCRIPTION OF CHANGE:

(o LPCS - A
o LPCS - B)

o is replaced by:

o LPCS

JUSTIFICATION:

NMP Unit II utilizes one Low Pressure Core Spray System.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

RC/Q-4

DESCRIPTION OF CHANGE:

HPCI deleted.

JUSTIFICATION:

Not applicable for NMP Unit II.
NMP Unit II does not utilize a HPCI system.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C2-1.1

DESCRIPTION OF CHANGE:

Step C2-1.1 is deleted.

JUSTIFICATION:

NMP Unit II does not utilize an Isolation Condenser.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C2-1.3

DESCRIPTION OF CHANGE:

- o (other steam driven equipment)
- o HPCI steam line
- o IC tube side vent

These actions are deleted.

JUSTIFICATION:

Not applicable to NMP Unit II.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C3-1

DESCRIPTION OF CHANGE:

Step C3-1 deleted.

JUSTIFICATION:

NMP Unit II does not utilize Isolation Condensers.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C6-2.2

DESCRIPTION OF CHANGE:

1) The LPCI System was deleted from the list of systems that inject outside the shroud and added to the list of systems that inject inside the shroud.

2) Condensate booster pumps were added to the list of means of injecting water inside the shroud.

3) "Interconnections to other units" was deleted.

JUSTIFICATION:

1) The LPCI system injects inside the shroud at NMP Unit II.

2) NMP Unit II utilizes condensate booster pumps.

3) Not applicable to NMP Unit II.

E.O.P. WRITER: _____
DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C6-3.1 and C6-4

DESCRIPTION OF CHANGE:

1) Condensate booster pumps added to list of injection systems.

2) Interconnections with other units deleted from list of injection systems.

JUSTIFICATION:

1) NMP Unit II utilizes condensate booster pumps.

2) Not applicable to NMP Unit II.

E.O.P. WRITER: _____

DATE: _____

EPG
CHANGEFORM

GENERIC
E.P.G. STEP:

C7-2.2

DESCRIPTION OF CHANGE:

1) The HPCI System is deleted from the list of systems which inject outside of the shroud.

2) LPCI is deleted from systems that inject outside the shroud. LPCI is added to the systems that inject inside the shroud.

3) Interconnectons with other units is deleted.

JUSTIFICATION:

1) There is no HPCI System at NMP Unit II.

2) The LPCI System at NMP Unit II injects inside the shroud.

3) Not applicable for NMP Unit II.

E.O.P. WRITER: _____
DATE: _____