

NINE MILE POINT NUCLEAR STATIONNUCLEAR TRAINING PROCEDURE  
PROCEDURE NO. NTP-11LICENSED OPERATOR RETRAINING

<u>APPROVALS</u>	<u>SIGNATURES</u>	<u>DATE AND INITIALS</u>		
		<u>REVISION 0</u>	<u>REVISION 1</u>	<u>REVISION 2</u>
Superintendent Training - Nuclear K. F. Zollitsch	<i>KF Zollitsch</i>	<i>KFZ</i> <i>5/30/85</i>	<i>KFZ</i> <i>2/28/86</i>	
Operations Supervisor NMP Unit #1 J. C. Aldrich	<i>J. C. Aldrich</i>	<i>JCA</i> <i>3/7/86</i>	<i>JCA</i> <i>3/7/86</i>	
Operations Supervisor NMP Unit #2 M. Jones	<i>M. Jones</i>	<i>MJ</i> <i>5/30/85</i>	<i>MJ</i> <i>3/11/86</i>	
General Superintendent Nuclear Generation T. J. Perkins	<i>TJ Perkins</i>	<i>TJP</i> <i>3/14/86</i>	<i>TJP</i> <i>3/14/86</i>	

SUMMARY OF PAGES

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## LICENSED NRC OPERATOR RETRAINING

### 1.0 PURPOSE

This procedure formally establishes the procedures, programs, responsibilities and requirements for requalification of NRC Licensed Reactor Operators and Senior Operators at the Nine Mile Point Nuclear Station Units 1 and 2. These programs are established in compliance with 10CFR-50.54 (i-1) and are designed to meet the requirements of Appendix A 10CFR-55 and to provide documentation to be used in operator license renewal as required by 10CFR-55.33.

### 2.0 REFERENCES

This program is designed to fulfill the operator training and requalification requirements included in the following documents:

- 2.1 10CFR-50, Licensing of Production and Utilization Facilities
- 2.2 10CFR-55.33 Renewal of Licenses
- 2.3 10CFR-55, Appendix A, Requalification Program for Licensed Operators
- 2.4 ANSI N 18.1 - 1971, Para. 5.5.1 - Retraining Program for NMP Unit 1
- 2.5 USNRC Letter, Harold Denton to all Power Reactor Applicants and Licenses,  
Subject: Qualifications of Reactor Operators, March 28, 1980.
- 2.6 NUREG 0737
- 2.7 ANSI/ANS 3.1 - 1978 for NMP Unit 2
- 2.8 NUREG 1021
- 2.9 INPO TQ.10 - January 1985 "Performance Objectives and Criteria for Operating and Near-Term Operating License Plants"

### 3.0 TRAINING PROGRAM

The Requalification Training Program shall be conducted on a two-year cycle. Successive requalification programs using the same format shall follow in a continuous cycle of two-year programs. Every effort will be made to provide the licensed operators with an effective Requalification program involving the integration of simulator instruction, classroom lecture and daily plant operations.



### 3.1 Lectures

The requalification program shall include preplanned lectures to be given throughout the two-year period. Emphasis shall be placed on those areas where annual operator and senior operator written examinations indicate that an increase in scope and depth of coverage is needed in the following general subjects:

- 3.1.1 Theory and Principles of Operation.
- 3.1.2 General and Specific Plant Operating Characteristics, including operational limitations, precautions and set points.
- 3.1.3 Plant Instrumentation and Control System
- 3.1.4 Plant Protection Systems, including emergency plans and security procedures.
- 3.1.5 Engineered Safety Systems.
- 3.1.6 Normal, Abnormal and Emergency (Special Operating) Procedures.
- 3.1.7 General Safety, Radiation Protection and Site Emergency Plan Procedures.
- 3.1.8 Technical Specifications.
- 3.1.9 Changes in Equipment and Operating Procedures.
- 3.1.10 Applicable portions of Title 10, Chapter 1, Code of Federal Regulations (10CFR).
- 3.1.11 Quality Assurance for Operations, to include applicable portions of Site Administrative and Quality Control Procedures.
- 3.1.12 Contingency Lectures as required to include special items such as major maintenance, outages, refueling, etc.
- 3.1.13 Heat transfer, fluid flow and thermodynamics.
- 3.1.14 Use of installed plant systems to control or mitigate an accident in which the core is severely damaged.



### 3.2 Individual Study

Reading assignments shall be periodically made for operators and senior operators. Oral and/or written quizzes may be given to evaluate the knowledge level of the operators in these areas. The subjects covered shall include, but need not necessarily be limited to the following areas:

- 3.2.1 Facility Design Changes
- 3.2.2 Procedure Changes
- 3.2.3 Facility License Changes
- 3.2.4 Operating Procedures
- 3.2.5 Special Procedures, including simulation whenever possible.
- 3.2.6 Emergency Plan and Procedures
- 3.2.7 Radiation Protection Procedures

### 3.3 On-the-Job Training

#### 3.3.1 Control Manipulations

All licensed operators and senior operators shall participate as much as possible in plant control manipulations involving reactivity changes to demonstrate their skill and/or familiarity with reactivity control systems. These manipulations shall involve a variety of the evolutions listed below. Normal control manipulations, such as plant or reactor startups must be performed. Control manipulations during abnormal or emergency operations must be walked through with, and evaluated by, a member of the training staff at a minimum. The appropriate plant reference simulator may be used to satisfy the requirements for control manipulations.

#### 3.3.2 Normal Control Manipulations

- \* a. Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.
- b. Plant shutdown.
- \* c. Manual control of feedwater during startup and/or shutdown.
- \* d. Any significant (>10%) power changes in manual rod control or recirculation flow.

\*See Paragraph 3.3.4 and 3.3.5 for explanation of starred items.





### 3.3.3 Abnormal or Emergency Operations

- \* a. Loss of coolant including:
  - 1) Inside and outside primary containment
  - 2) Large and small, including leak-rate determination
- b. Loss of instrument air.
- c. Loss of electrical power (and/or degraded power sources).
- \* d. Loss of core coolant flow.
- e. Loss of condenser vacuum.
- f. Loss of service water.
- g. Loss of shutdown cooling.
- h. Loss of RBCLC.
- i. Loss of normal feedwater or normal feedwater system failure.
- \* j. Loss of all feedwater (normal and HPCI).
- k. Loss of protective system channel.
- l. Mispositioned control rod or rods (or rod drops).
- m. Inability to drive control rods.
- n. Failure of Reactor to Scram.
- o. Fuel cladding failure or high activity in reactor coolant or offgas.
- p. Turbine or generator trip.
- q. Malfunction of automatic control system(s) which affect reactivity (Unexplained reactivity changes).
- r. Malfunction of reactor pressure control.
- s. Reactor scram.
- t. Main steam line break (inside or outside containment).
- u. Nuclear instrumentation failure(s).

\*See Paragraph 3.3.4 and 3.3.5 for explanation of starred items.



#### 3.3.4 Licensed Operator Manipulations

Each licensed operator shall manipulate the controls as described in Section 3.3, above, during the term of his license. The starred items shall be performed on an annual basis. All other items shall be performed on a two-year cycle. Those control manipulations which are not performed at the plant shall be performed on a simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations.

#### 3.3.5 Licensed Senior Operator Manipulations

Each licensed senior operator shall manipulate the controls or direct the activities of operators during plant control manipulations as described in Section 3.3, above, during the term of his license. The starred items shall be performed on an annual basis, all other items shall be performed on a two-year cycle. Those control manipulations which are not performed at the plant shall be performed on the plant reference simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations. Personnel with senior licenses are credited with these activities if they direct or evaluate control manipulations as they are performed.

#### 3.3.6 Log of Control Operation and Simulation at the Plant

Whenever an operator or senior operator participates in a plant manipulation for qualification or performs a "walk through", he shall log the date of the exercise in his individual training manual and note whether he actually performs the manipulation, whether it was a simulation or performed under his direction. Each entry shall be initialed by a Qualified Evaluator.

#### 3.4 Simulator Training

All of the licensed operators and senior operators shall participate in Simulator Training during the term of their licenses. The Nine Mile Point Unit Specific Simulators may be used in meeting the requirements of Sections 3.3.2 and 3.3.3.



#### 4.0 EVALUATION

##### 4.1 Written Examinations

- 4.1.1 Written examinations shall be given annually. The examination shall closely parallel the NRC written examinations outlined in 10CFR-55.21 and 10CFR-55.22.
- 4.1.2 All written examinations shall be graded and filed in the individual training file for audit by the NRC.
- 4.1.3 Each annual written examination shall be used to determine the areas in which retraining is needed to upgrade licensed operator and senior operator knowledge.
- 4.1.4 An operator scoring 80% or above in all sections of the annual requalification examination shall not be required to attend further requalification lectures until the next annual requalification examination. Other operators may be excused from lectures in subjects for which they scored 80% or above, but shall be required to attend lectures on all other topics.
- 4.1.5 An accelerated requalification program consisting of additional lectures and/or "walk throughs" and/or simulator training shall be scheduled for all individuals whose average score for all sections of the annual requalification examination is below 80%, or any individual category score below 70%. Individual programs consisting of any or all of the following shall be tailored to place emphasis where required:
  - a. Individual reading assignments
  - b. Additional on-shift evolutions
  - c. Individual review with members of the operating staff
  - d. Attendance at formal lectures
  - e. Additional simulator training

The exact details of the accelerated program, including its scope and duration, will be made by a review team consisting of the Station Superintendent, Operations Supervisor and the Training Supervisor. Any individual who is required to participate in this program will be removed from normal shift operation for the duration of his/her program, and will be given no additional responsibilities other than training. Any operator or senior operator assigned to the accelerated program shall be required to successfully complete a second written and/or oral and/or



simulator examination or category at the completion of his/her accelerated review program. All written re-examinations shall be graded and placed in the individual training file along with the results of any other examination given.

4.1.6 Written quizzes shall be administered following each required attendance requalification lecture or series of lectures on a given topic. In addition, written quizzes may periodically be administered to determine the operator's knowledge of material covered in specific reading assignments or walk-through exercises. These quizzes shall be graded and their results placed in the individual training files. A passing grade for these quizzes is 80%. An operator or senior operator scoring below 80% shall be required to repeat the specific lecture or reading assignment covered by the quiz.

4.1.7 Approximately 100 weeks after the start of each two-year requalification program, a second annual written examination shall be given to all licensed operators and licensed senior operators. This examination shall be similar in content to the first annual examination and shall be used to determine knowledge of subjects covered in the requalification program and provide a basis for evaluating knowledge of abnormal and emergency procedures. This second annual examination shall be used to evaluate the effectiveness of the two-year requalification program including any accelerated instructional sessions. It shall be used by the Training Supervisor in designing the second two-year cycle, requalification program.

4.1.8 The second requalification examination shall be graded and placed in the individual training file. Selection for further training shall be on the same basis as in 4.1.4 and 4.1.5, above.

#### 4.2 Continuous Evaluation

4.2.1 Systematic observation and evaluation of the performance and competency of licensed operators and senior operators shall be made by the Station Superintendent and his designated representatives. The following procedure will be used:

4.2.2 The Operations Supervisor and/or the Training Supervisor or designee shall review each individual training manual quarterly.

4.2.3 They shall arrange with the Station Superintendent to schedule reactivity control manipulations, as possible, so that each individual may complete the prescribed manipulations on a timely basis.





#### 4.3 Simulator Performance and Oral Evaluation

- 4.3.1 The annual requalification examination shall include evaluation of operators and senior operators on the plant referenced simulator to the greatest extent possible. This examination and oral evaluation shall as a minimum contain the following:
- 4.3.2 A discussion of required actions to be taken during normal, abnormal and emergency conditions and the reasons for these actions.
- 4.3.3 A simulation of normal, abnormal and emergency conditions while in the plant referenced simulator demonstrating each action and each controlling device to be operated.
- 4.3.4 Should the performance of the operator or senior operator be deemed unsatisfactory, the operator or senior operator shall participate in an accelerated requalification program as described in Section 4.1.5.
- 4.3.5 Upon completion of the accelerated requalification program, but no later than one month following the initial examination, he shall be subject to re-examination.
- 4.3.6 A written record of the results of these oral examinations and simulator evaluations shall be placed in each individual's training file.

#### 5.0 DOCUMENTATION

##### 5.1 Individual Training Manual

Each licensed operator and licensed senior operator shall be furnished an individual training manual, which shall contain tasks, check lists of plant evolutions, individual reading assignments and similar items which may be assigned by the Training Supervisor. This manual shall include information relative to the individuals assigned as evaluators and instructions on the completion of the manual. 1

- 5.1.1 Whenever an individual participates in a reactivity control manipulation or other evolutions he/she shall log the date as prescribed in Section 3 of this procedure.
- 5.1.2 The date and title of each reading assignment completed shall be logged.
- 5.1.3 The Training Manual will be kept in a centralized location as designated by the Training Supervisor. 1
- 5.1.4 The Training Manual shall be audited quarterly by the Training Department.



## 5.2 Individual Training File

An individual training file shall be maintained for each licensed operator and senior operator. The contents pertaining to requalification shall be used in support of application for license renewal. Training files shall contain the following information:

- 5.2.1 A check list giving the subjects of the formal training lectures presented with a record of the name of the instructor presenting the lecture, the length of the lecture and the date of attendance.
- 5.2.2 A log of all requalification examinations taken which shall include the general subject or system covered and the specific items if applicable. Results shall be recorded as to whether the candidate has mastered the subject or requires further study. Copies of the actual examination sheet as completed by the individual and as graded by the examiner shall be included.
- 5.2.3 A log of reading assignments.
- 5.2.4 A transcript of the on-the-job training or experience record as contained in the individual training manual.
- 5.2.5 A log of the manipulations or evolutions which the individuals shall be required to perform or simulate and the results of an audit evaluation in terms of whether or not the candidate has successfully mastered the operation or requires additional practice and/or study.
- 5.2.6 A log of all mandatory repeat sessions to which the individual has been assigned including items covered in an accelerated requalification program. Results of tests on these special assignments shall be recorded as to whether the individual mastered the subject or required further study.
- 5.2.7 Transcript of off-site training and results.
- 5.2.8 Copy of License Renewal Certification, completed pursuant to Sections 55.33a(4) and (5) of 10CFR-5, signed by the Vice President-Nuclear Generation.

