NINE MILE POINT NUCLEAR STATION

SITE ADMINISTRATIVE PROCEDURES

PROCEDURE NO. APN-10B

LICENSED NRC OPERATOR RETRAINING

APPROVALS	SIGNATURES	DATES AND INITIALS REVISION 2	REVISION 3	REVISION 4
Station Superintendent NMPNS T. W. Roman	T W Roman	TWR 4/1/80		
General Superintendent Nuclear Generation Chairman of S.O.R.C. T. J. Perkins	T J Perkins	TJP 5/6/80		
Quality Assurance Concurrence				
Q. A. Manager W. M. Bryant	W. M. Bryant	W.M.B 5/7/80		

Summary of Pages

Revision 2, dated April 1980, consists of pages 1-6, 8, and 12 dated April 1980; pages 7 and 9-11 dated January 1980.

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED AFTER April 1982, SUBJECT TO PERIODIC REVIEW.

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 Unit No. 1. These programs are established in compliance with 10 CFR 50.54 (i-1) and are designed to meet the requirements of Appendix A 10 CFR 55 and to provide documentation to be used in operator license renewal as required by 10 CFR 55.33.

2.0 APPLICABILITY

The programs, administrative procedures, and controls established by this procedure shall be enforced and adhered to for the life of the station. In accordance with 10 CFR 50.54 (i-1) no changes shall be made in this program to reduce the scope or time allotted without prior approval by the NRC.

3.0 REFERENCES

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

3.1 10 CFR 50, Licensing of Production and Utilization Facilities

3.2 10 CFR 55.33, Renewal of Licenses

3.3 10 CFR 55, Appendix A, Requalification Program for Licensed Operators

3.4 ANSI N 18.1-1971, Para. 5.5.1, Retraining Program

3.5 USNRC Letter, Harold Denton to all Power Reactor Applicants and Licensees, Subject: Qualifications of Reactor Operators, March 28, 1980. 2

4.0 DEFINITIONS

The following definitions are extracted from 10CFR55.4 "Simulator" and "Simulate" are derived from 10CFR55, Appendix A, Section 4.d.

4.1 "Facility" means any production facility or utilization facility as defined in 10CFR50.

4.2 "Operator" is any individual who manipulates a control of a facility. An individual is deemed to manipulate a control if he directs another to manipulate a control.

4.3 "Senior Operator" is any individual designated by a facility licensee under 10 CFR 50 or by a holder of an authorization under 10 CFR 115 to direct the licensed activities of licensed operators.

4.4 "Controls" when used with respect to a nuclear reactor means apparatus and mechanisms the manipulation of which directly affect the reactivity or power level of the reactor.

4.5 "Simulator" a working model of the control room similar to the plant for which the individual is licensed or is a candidate for license may be considered a "Simulator" provided it reproduces the general operating characteristics of the plant with similar arrangements of instrumentation and controls.

4.6 "Simulate" when an individual "walks-through" the actions to be taken using the control panel involved, discussing each step without actually operating any controls he has "simulated" the operation. This method is used as a means of teaching or reviewing actions required by an emergency or abnormal condition.

5.0 SCOPE

Operator and Senior Operator requalification programs shall be conducted on a two year cycle. The following portions shall be included in the program:

5.1 Annual written examinations

5.2 Regularly schedule lectures

5.3 Assigned individual study

5.4 On the Job Training - this shall include reactor control manipulations such as reactor startups, shutdowns, and power changes.

5.5 Observation and Evaluation - including simulation of emergency and abnormal conditions.

6.0 SCHEDULE

Requalification programs shall be conducted on a two year cycle. Successive requalification programs using the same format shall follow the first in a continuous cycle of two year programs.

7.0 TECHNICAL TRAINING

7.1 Lectures

The requalification program shall include preplanned lectures to be given throughout the two year period. Lectures will normally be scheduled to average four hours per month per man to accommodate all licensed operating personnel. 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:

7.1.1 Theory and Principles of Operation.

7.1.2 General and Specific Plant Operating Characteristics, including operational limitations, precautions and set points.

7.1.3 Plant Instrumentation and Control Systems.

7.1.4 Plant Protection Systems including emergency plans and security procedures.

7.1.5 Engineered Safety Systems.

7.1.6 Normal, abnormal, and Emergency (Special Operating Procedures).

7.1.7 General Safety, and Radiation Control and Safety.

7.1.8 Technical Specifications

7.1.9 Changes in Equipment and Operating Procedures

7.1.10 Applicable portions of Title 10 Chapter 1 Code of Federal Regulations (10CFR).

7.1.11 Quality Assurance for Operations, to include applicable portions of Site Administrative and Quality Control Procedures.

7.1.12 Contingency Lectures as required to include special items such as major maintenance, outages, refueling, etc.

7.1.13 Heat transfer, fluid flow and thermodynamics.

7.1.14 Use of installed plant systems to control or mitigate an accident in which the core is severely damaged. 2

7.1.15 Reactor and plant transients and accidents.

7.2 Training Aids

Films, video tapes, and other effective training aids may be used to supplement lectures but may not be used as a substitute for "live" instructions.

7.3 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.

7.3.1 Facility Design Changes

7.3.2 Procedure Changes

7.3.3 Facility License Changes

7.3.4 Operating Procedures

7.3.5 Special Procedures, including simulation whenever possible

7.3.6 Emergency Plan and Procedures

7.3.7 Radiation Protection Procedures

8.0 ON THE JOB TRAINING

8.1 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. An appropriate simulator may be used to satisfy the requirements for control manipulations. 2

8.1.1 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 8.2 and 8.3 for explanation of starred items.

8.1.2 Abnormal or Emergency Operations

*a. Loss of coolant including:

1) Inside and outside primary containment (SOP-29 & SOP-30)
2) Large and small, including leak-rate determination

b. Loss of instrument air (SOP-5).

c. Loss of electrical power (and/or degraded power sources SOP-6).

*d. Loss of core coolant flow.

e. Loss of condenser vacuum (SOP-20).

f. Loss of service water (SOP-14).

g. Loss of shutdown cooling (SOP-24).

h. Loss of RBCLC (SOP-22).

i. Loss of normal feedwater or normal feedwater system failure (SOP-3).

*j. Loss of all feedwater (normal and HPCI).

k. Loss of protective system channel (SOP-7).

l. Mispositioned control rod or rods (or rod drops) (SOP-15 & SOP-27).

m. Inability to drive control rods (SOP-15).

n. Conditions requiring use of standby liquid control system (Liquid Poison) (SOP-17).

o. Fuel cladding failure or high activity in reactor coolant or offgas (SOP-26).

p. Turbine or generator trip (SOP-8).

q. Malfunction of automatic control system(s) which affect reactivity (SOP-19) (Unexplained reactivity changes).

r. Malfunction of reactor pressure control system (SOP-25).

s. Reactor scram (SOP-16).

t. Main steam line break (inside or outside containment).

u. Nuclear instrumentation failure(s) (SOP-23).

*See paragraph 8.2 and 8.3 for explanation of starred items.

8.2 Licensed Operator Manipulations

Each licensed operator shall manipulate the controls as described in Section 8.1 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 may be performed on a simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations. 2

8.3 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 8.1 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. 2
Those control manipulations which are not performed at the plant may be performed on a 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.

8.4 Simulator Training

Some or all of the licensed operators and senior operators may participate in simulator training during the term of their licenses. A simulator may be used in meeting the requirements of Sections 8.1 through 8.3 above and 10.2.2 if the simulator reproduces the general operating characteristics of the plant involved, and the arrangement of the instrumentation and controls of the simulator is similar to that of the plant involved.

8.5 Licensed Staff Members

Licensed staff members shall participate in all sections of this program. Those licensed staff members who are actively engaged in the implementation of the requalification program and other training programs will not be required to complete those sections of this program for which they serve an active function. Example: A licensed staff member who prepares and grades a quiz will not be required to take that quiz.

8.6 Log of Control Operation and Simulation

Whenever an operator or senior operator participates in a plant manipulation 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 maniuplation or it was a simulation or performed under his direction. Each entry shall be initialed by the Station Shift Supervisor or another licensed senior operator present.

9.0 INACTIVE LICENSE

In accordance with 10 CFR 55.31, any licensed operator or licensed senior operator who, for any reason, has not been actively performing the functions of an operator or senior operator for a period of four months or longer shall prior to resuming activities for which he is licensed, complete the following requirements to demonstrate that his knowledge of facility operation and administration are satisfactory.

9.1 Complete all reading assignments made during the period of his absence.

9.2 Review all changes in operating and administrative procedures, license changes, standing orders, and instructions for the period of his absence.

9.3 Meet with the supervisor in charge of operator training to cover the material from all required attendance requalification lectures which were missed. 1

9.4 Successfully complete an oral examination and evaluation authorized by the Station Superintendent to demonstrate that his knowledge and understanding of the facility is satisfactory.

9.5 The facility licensee must certify to the NRC that the operator or senior operator is requalified. This certification shall be initiated by the Station Superintendent.

10.0 EVALUATION

10.1 Written Examinations

10.1.1 Written examinations shall be given annually. The examination shall closely parallel the NRC written examinations outlined in 10 CFR 55.21 and 10 CFR 55.22. 1

10.0 EVALUATION (Continued)

10.1.2 All written examinations shall be graded and filed in the individual training file for audit by the NRC.

10.1.3 Each first annual written examination shall be used to determine the areas in which retraining is needed to upgrade licensed operator and senior operator knowledge.

10.1.4 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.

10.1.5 An accelerated requalification program consisting of additional lectures and/or "walk through" shall be scheduled for all individuals whose average score for all sections of the annual requalification examination is below 80%, or whose individual category score is below 70%. Individual programs consisting of any or all of the following shall be tailored to place emphasis where required: 2

a. individual reading assignments

b. additional on shift evolutions

c. individual review with members of the operating staff

d. attendance at formal lectures

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 requalification 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 oral examination given. 2

10.0 EVALUATION (cont'd)

10.1.6 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.

10.1.7 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.

10.1.8 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 10.1.4 and 10.1.5 above.

10.2 Oral Examinations and Evaluation

10.2.1 Continuous Evaluation

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:

10.0 EVALUATION (Cont'd)

10.2 Oral Examinations and Evaluation (Cont'd)

10.2.1 Continuous Evaluation (Cont'd)

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

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

10.2.2 Superintendent's Audit

Within approximately 52 and 104 weeks respectively following the start of each two year requalification program each operator and senior operator shall participate in an oral examination with the Station Superintendent or his appointed representative. This examination and evaluation shall as a minimum contain the following:

a. A discussion of required actions to be taken during abnormal and emergency conditions and the reasons for these actions.

b. A simulation of abnormal and emergency conditions while in the control room showing each action and each controlling device to be operated.

c. Should the performance of the operator or senior operator be deemed unsatisfactory, the operator or senior operator shall participate in an accelerated review program as described in Section 10.1.5.

d. Upon completion of the accelerated review program but no later than one month following the initial interview he shall be subject to re-examination.

e. A simulator may be used in meeting the requirements of Section 10.2.2 if the simulator reproduces the general operating characteristics of the plant involved, and the arrangement of instrumentation and controls is similar to the plant involved.

10.0 EVALUATION (Cont'd)

10.2 Oral Examinations and Evaluation (Cont'd)

10.2.3 A written record of the results of these oral examinations and evaluations shall be placed in each individual's training file.

11.0 RECORDS

11.1 Individual Training Manual

Each licensed operator and licensed senior operator shall be furnished an individual training manual which shall contain check lists of plant evolution, individual reading assignments and similar items which may be assigned by the Training Supervisor.

11.1.1 Whenever an individual participates in a reactivity control manipulation or other evolutions he/she shall log the date as prescribed in Section 8 of this procedure.

11.1.2 The date and title of each reading assignment completed shall be logged.

11.2 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.

11.2.1 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.

11.2.2 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.

11.2.3 A log of reading assignments.

11.0 RECORDS (Cont'd)

11.2 Individual Training File (Cont'd)

11.2.4 A transcript of the on-the-job training or experience record as contained in the individual training manual.

11.2.5 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 successively mastered the operation or requires additional practice and/or study.

11.2.6 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.

11.2.7 Transcript of off-site training and results.

11.2.8 Copy of License Renewal Certification, completed pursuant to Sections 55.33a(4) and (5) of 10CFR55, signed by the Vice President-Nuclear Generation. 2

RO/SRO REQUALIFICATION PLANT EVOLUTIONS RECORD SHEET

Evolution	Action	Date	Initial

RO/SRO REQUALIFICATION REACTIVITY CHANGES AND CONTROLS RECORD SHEET

Evolution	Date Initial	Date Initial	Date Initial	Date Initial	Date Initial	Date Initial
Control Rod Scram Timing						
SD Margin Testing						
Rx SU (to pt. of adding heat)						
Rx Heatup of 50°F or greater						
Pressure Regulator Setpoint Changes with Rx Critical						
Rx Power Changes ≥ 10% using Control Rods						
Rx Power Changes ≥ 10% using Recirc. Flow in Manual						
Control Rod Interchange						
Recirc. Pump SD with Rx Critical						
Recirc. Pump SU with Rx Critical						
Compensation for Transient Conditions with Control Rods or Recirc. Flow						
Turbine Stop Valve Testing						
Plant SD (From Run to SU Mode)						
Rx SD (From SU to SD Mode)						

Name _____

NINE MILE POINT NUCLEAR SITE

TRAIN[illegible] LECTURE ATTENDANCE RECORD SH[illegible]

INSTRUCTOR: _____ DATE: _____

DESCRIPTION OF SUBJECT(S) COVERED:

_____

_____

_____

TEST OR QUIZ GIVEN: YES _____ NO _____

LENGTH OF LECTURE: _____ HRS.

PERSONNEL ATTENDING:

NAME	DEPT	NAME	DEPT

RETURN THIS FORM AND GRADED EXAMINATIONS OR QUIZZES TO THE TRAINING SUPERVISOR WHEN COMPLETED.

RO/SRO REQUALIFICATION READING ASSIGNMENT RECORD SHEET

DOCUMENT	DATE/INITIAL	QUIZ	DATE	INITIAL
AP-7A; Read all Operating Procedures				
AP-10A; Read the Site Emergency Plans and all Procedures				
AP-11A; Read all Special Procedures				
AP-12A; Read all the Radiation Protection Operating Procedures				

ORAL TEST AND EVALUATION RECORD SHEET

NAME: _____

DATE: _____ EVALUATOR _____

AREAS EVALUATED: _____

GENERAL PERFORMANCE: _____

_____

_____

_____

AREAS OF SPECIFIC WEAKNESS: _____

_____

_____

_____

RECOMMENDATIONS MADE: _____

_____

_____

_____

_____

_____

RE-EXAMINATION AREAS (IF REQUIRED): _____

_____

_____

_____

_____

_____

OPERATIONS SIGN OFF SHEET

TITLE: _____ DATE ENTERED: _____

_____ COMPLETE BEFORE: _____

Read the attachment which is being routed for your information. Sign off after reading. Return to the Training Supervisor when all personnel have signed.

A SHIFT		DATE	B SHIFT		DATE
S.S.S.			S.S.S.		
S.O.F.			S.O.F.		
N.O.E.			N.O.E.		
N.O.C.			N.O.C.		
A.O.B.			A.O.B.		

C SHIFT		DATE	D SHIFT		DATE
S.S.S.			S.S.S.		
S.O.F.			S.O.F.		
N.O.E.			N.O.E.		
N.O.C.			N.O.C.		
A.O.B.			A.O.B.		

RELIEF SHIFT		DATE	LICENSED STAFF MEMBERS	DATE
S.S.S.				
S.O.F.				
N.O.E.				
N.O.C.				
A.O.B.				

RO/SRO REQUALIFICATION READING ASSIGNMENT RECORD SHEET
FOR FACILITY DESIGN CHANGES, PROCEDURE CHANGES,
LICENSE CHANGES AND MISCELLANEOUS INFORMATION

DOCUMENT	DATE	INITIAL	QUIZ	DATE	INITIAL