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4410-87-L-0183/0276P

US Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

Dear Sirs:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)  
Operating License No. DPR-73  
Docket No. 50-320  
Revision 3 to the TMI-2 Licensed Operator  
Requalification Training Program

Attached (Attachment 1) is Revision 3 of the "TMI-2 Licensed Operator Requalification Program" 7821-PGD-2613. This revised program reflects the current training needs for the TMI-2 facility and reduces the scope of the current licensed operator requalification program; therefore, in accordance with 10 CFR 50.54 (i-1), this program is submitted for your review and approval. A discussion of the specific scope reductions is provided in Attachment 2.

Additionally, GPU Nuclear intends to delete the TMI-2 Fuel Handling Senior Reactor Operator (FHSRO) Training Program, 7821-PGD-2614, Revision 1. This program currently encompasses both initial and requalification training of FHSROs. Initial training of the FHSROs has been completed; requalification training of the FHSROs has been incorporated into the attached revision to the TMI-2 Licensed Operator Requalification Training Program. Attachment 3 identifies reductions in scope to the current FHSRO Training Program.

In addition to the above reductions in scope, the following exceptions to 10 CFR 55.59, "Requalification," are noted.

o Requalification Program Requirements - Lectures

10 CFR 55.59(c)(2), "Requalification Program Requirements," subsections (iv) and (v) respectively require lecture topics for "Plant Protection Systems" and "Engineered Safety Systems" as part of the licensed operator requalification program.

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In lieu of this requirement, the monitoring capabilities of the TMI-2 installed systems are addressed under "Plant Instrumentation and Control Systems" in Attachment 1 to the Licensed Operator Requalification Training Program. The Reactor Protection Systems at TMI-2 have been disabled and are used for plant monitoring. The monitoring capabilities of the installed systems are addressed in "Plant Instrumentation and Control Systems." The "Engineered Safety Systems" at TMI-2 have also been disabled and training on these systems is not included in this program. This exception was previously contained in Revision 2 to the TMI-2 Licensed Operator Requalification Training Program (reference GPU Nuclear letter 4410-84-L-0138 dated September 15, 1984).

o Requalification Program Requirements - On-The-Job Training

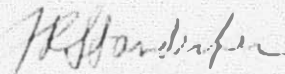
10 CFR 55.59(c)(3)(i), subsections (A) to (AA) specify control manipulations that are require to be performed as part of the on-the-job training for the licensed operator requalification program.

In lieu of the above requirement, Attachment 2 to the TMI-2 Licensed Operator Requalification Training Program identifies the abnormal and emergency evolutions that are applicable to TMI-2. These evolutions provide a more meaningful requalification training program for the TMI-2 licensed operators. Additionally, the requalification program specifies completion of the evolutions through the plant drill program. GPU Nuclear believes this to be acceptable per 10 CFR 55.59(c)(4)(iv), "Evaluation," which states: "The requalification program must include...(iv) simulation of emergency or abnormal conditions that may be accomplished by using the control panel of the facility involved or by using a simulator. Where the control panel of the facility is used for simulation, the action taken or to be taken for the emergency or abnormal conditions shall be discussed; actual manipulation of the plant controls is not required."

It is noteworthy that GPU Nuclear will be submitting, under separate cover, an exemption request from various portions of 10 CFR 55 due to the unique safe-shutdown conditions of TMI-2.

Per the requirements of 10 CFR 170, an application fee of \$150.00 is enclosed.

Sincerely,



F. R. Standerfer  
Director, TMI-2

Attachments

Enclosed: GPU Nuclear Corp. Check No. 009017

cc: Chief, Operations Branch, Division of Reactor Safety - Mr. R. M. Gallo  
Section Chief, PWR - Mr. R. M. Keller  
Regional Administrator, Region 1 - Dr. W. T. Russell  
Director, TMI-2 Cleanup Project Directorate - Or. W. D. Travers



TRAINING AND EDUCATION DEPARTMENT  
 TRAINING PROGRAMS MANUAL  
 THREE MILE ISLAND

ATTACHMENT 1  
 4410-B7-L-0183  
 Number 33 Pages

Title  
 TMI-2 LICENSED OPERATOR REQUALIFICATION TRAINING PROGRAM

7821-PGD-2613  
 Revision No.

3

Applicability/Scope

Responsible Office  
 TMI Training  
 Department

10 CFR 55 License Holders at TMI-2

This document is within QA plan scope  Yes  No  
 Safety Reviews Required  Yes  No

Effective Date

List of Effective Pages

Page	Revision	Page	Revision	Page	Revision	Page	Revision
1.0	3	A1.1	3				
2.0	3	A2.1	3				
3.0	3	A3.1	3				
4.0	3	A3.2	3				
5.0	3	A4.1	3				
6.0	3	A4.2	3				
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	Signature	Concurring Organizational Element	Date
Originator	<i>Richard Coleman</i>	Instructor III	12/14/87
Concurred By	<i>Paul D. Hagan</i>	Supervisor, Licensed Operator Trng	14 Dec 87
	<i>W. H. [unclear]</i>	Operator Training Manager, TMI	12 Dec 87
	<i>J. J. [unclear]</i>	SRG	12-14-87
Approved By	<i>[unclear]</i>	Manager, Plant Training, TMI	12/14/87
	<i>[unclear]</i>	Manager, Plant Operations TMI-2	12/14/87

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## DOCUMENT HISTORY

- Rev 3
- Incorporates 10CFR55 Rules, effective 5/26/87:
  - Places document in current format
  - Deletes Reactivity Manipulation Requirements
  - Incorporates FHSRO Requal Requirements



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TMI-2 LICENSED OPERATOR REQUALIFICATION TRAINING PROGRAM

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## 1.0 PURPOSE

The purpose of this program description is to define the TMI-2 Licensed Operator Requalification Training Requirements.

## 2.0 APPLICABILITY/SCOPE

### 2.1 Applicability

This program applies to licensed Reactor Operators and Senior Reactor Operators, and Senior Reactor Operators Limited to Fuel Handling at TMI-2.

### 2.2 Scope

To achieve the stated purpose, this licensed operator requalification program has been established with a sufficiently broad scope to provide a comprehensive review of areas of knowledge necessary for safe plant operation and with the flexibility to cover recent operating experience and operational changes.

### 2.3 Objectives

The requalification program objectives are to:

- 1) Maintain nuclear plant operational safety.
- 2) Assure that operators maintain the high level of skill and knowledge required to accomplish routine and emergency duties.
- 3) Establish a system for evaluating and documenting operator knowledge and competency.

### 2.4 Program Segments

The requalification program SHALL be implemented utilizing four interrelated segments. These segments are:

- 1) Pre-Planned Lecture Class Series
- 2) Plant Drill Program
- 3) Operational review program
- 4) Licensee evaluation

This program becomes effective upon issue. Full compliance is to be achieved within 90 days of effective date.

## 3.0 DEFINITIONS

### 3.1 GPUNC Definitions

The definitions given below are of a restricted nature for the purpose of this program description.

Annual - As referred to in this program, is 12 months.

Biennial - A period of 24 months.

Case Study - An instructional strategy designed to promote better understanding of a specific (actual or hypothetical) event by presenting information germane to the event in a way that the audience identifies closely with it. (Ref 6.5)

Class - A formal lecture or seminar led by a qualified instructor.

Contact Hour of Instruction - A period of approximately one hour in which the course instructor is present to instruct or lead discussion, or is immediately available for assisting students. Lectures, seminars, discussions, problem solving sessions, and examinations are each considered a contact hours of instruction under this definition.

Cycle - A set of usually consecutive, essentially identical weeks of instruction designed to accommodate the delivery of training material to each of the operating shifts during their scheduled training weeks.

Drill - A supervised training exercise conducted in a work environment in the plant, or a mock-up for the purpose of developing and maintaining skills required to cope with plant abnormal/emergency conditions.

Fuel Handling Senior Reactor Operator (FHSRO) - Any individual licensed under 10 CFR 55 to supervise fuel handling and core alterations operations only.

Individual Guided Study (IGS) - Study periods during which the student may receive individual assistance from a Training Instructor.

Instructor - Person certified by the Training Department as having both the technical knowledge and instructional skills to carry out formal instruction.

SHALL, Should, and May - The word "SHALL" is used to denote a requirement; the word "should" to denote a recommendation; and the word "may" to denote permission - neither a requirement nor a recommendation.

### 3.2 NRC Definitions

The following definitions are taken from 10 CFR 55.4 and are provided for information.

Controls - When used with respect to a nuclear reactor, means apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor.

Licensee - Means an individual operator or senior operator.

Operator (RO) - Means any individual licensed under 10CFR55 to manipulate controls of a facility.

Senior operator (SRO) - Means any individual licensed under 10 CFR 55 to manipulate the controls of a facility and to direct the licensed activities of licensed operators.

## 4.0 PROGRAM DESCRIPTION

### 4.1 Structure

#### 4.1.1 Pre-Planned Class Series

The requalification program SHALL include pre-planned training sessions conducted on a regular and continuing basis in those areas where written exams and facility experience indicate that emphasis in scope and depth of coverage is needed (Ref 6.3, Section c.2 and c.3.iv).

The training sessions should also include the subjects identified in Attachment 1.

##### 4.1.1.1 Pre-Planned Class Series Attendance

All licensed individuals SHALL be required to

attend scheduled requalification classroom training. Absences from a scheduled training session should be made up by attending later weekly presentations during the cycle.

Absences which cannot be made up should be approved in advance by the Manager, Plant Operations and should be limited to twenty hours of Training per year. Additional absences, unless approved by the Manager, Plant Training shall result in the individual being removed from licensed duties and placed in an accelerated requalification program until such time as the missed material is made up. In any case, the individual who misses training shall be responsible for the material presented in his absence and shall take the quiz that was given on the missed material.

Self-study or individual guided study may be utilized for make-up with Operator Training Manager approval.

A licensed individual may obtain a waiver for topics in which he/she is considered to be expert by the Manager, Plant Operations.

Instructors may be given attendance credit for those lectures that they have presented in a licensed operator training program during the previous two years.

#### 4.1.1.2 Pre-Planned Class Series Training Methods

The following provides the methods which should be used to deliver the pre-planned class series training:

- Lecture Presentation
- BPTS Exercises
- Seminar Presentation
- Individual Guided Study
- Computer-Based Training
- Case Study (Ref. 6.5)



Title

TMI-2 LICENSED OPERATOR REQUALIFICATION TRAINING PROGRAM

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#### 4.1.2 Plant Drill Programs

In order to maintain an acceptable level of skills and knowledge associated with the nuclear plant systems, controls, and operational procedures, each licensee SHALL participate in a variety of plant drill scenarios as listed in Attachment #2 (Ref 6.17).

Participation in a plant drill involves responding to drill conditions. Where the Control Panels of the facility are used for simulation, the action taken for the emergency or abnormal condition may be discussed; actual plant manipulation is not required (Ref. 6.3, Section C.4.iv).

Plant drills SHALL be conducted with the approval of the Manager, Plant Operations on an individual or team basis and should involve:

- a) Reviewing plant procedure steps
- b) Identifying actions required to establish stable plant conditions
- c) Identifying equipment control
- d) Identifying expected plant instrumentation and alarm response
- e) Reviewing communications necessary to gather information or coordinate team actions
- f) Identifying supplementary actions aimed at mitigating results or causes of plant abnormal/emergency conditions

The drill scenario should include the following:

- a) Purpose/objectives of the drill
- b) Initial conditions
- c) General description
- d) Method of initiation
- e) Precautions and limitations
- f) Sequence of expected actions
- g) Point of termination/conditions under which the drill is to be secured
- h) Final conditions
- i) Monitors required/location

##### 4.1.2.1 Credit for Drill Scenarios

To receive credit for the drill scenarios, each licensed operator SHALL demonstrate satisfactory understanding of the operation of the systems and equipment involved and their

associated operating procedures (Ref. 6.3, Section (c)(3)(ii)).

Drill monitors may receive credit for those drill scenarios that they present.

Individuals who participate in Emergency Plan drills may receive credit for those drills as determined by the Operator Training Manager.

#### 4.1.2.2 Participation

In the event that skills training requirements for participation in drill scenarios are not met, exercises which will fulfill the requirements SHALL be scheduled and completed prior to the end of the required annual or biennial period.

If the requirements are not completed, a recommendation regarding the operator's removal from licensed duties and placement in an Accelerated Requalification Program SHALL be made by the Manager, Plant Training to the Director, TMI-2.

#### 4.1.3 Operational Review Program

The operational review program provides a system for on-shift review of selected operational experiences and changes to existing operating guidance or equipment. The operational review program enables continual updating of on-shift personnel and establishes a means of disseminating new or changing information on a short term basis.

##### 4.1.3.1 Modification Review (Ref 6.3, Section c.3.iii)

A continuing system SHALL be established by the Manager, Plant Operations so licensed individuals review documented plant design changes, equipment modifications, procedure changes and technical specification changes. Selected changes and modifications should be

analyzed and information pertinent to the basis for the changes and their operational implications collected.

The Manager, Plant Operations should specify changes and modifications to be analyzed, with information for review transmitted in accordance with the urgency of the situation.

This information should be formally transmitted to all licensed individuals. Changes to emergency procedures, technical specifications and safety related systems should be reviewed during the licensed operator's shift operation.

Expanded coverage of plant design changes, equipment modifications, procedure changes and technical specification changes in the Operational Proficiency Lecture Series should be recommended by the Manager, Plant Operations to the Operator Training Manager.

On-shift supervisory (SRO) personnel should provide guidance to on-shift operators in interpreting and reviewing changes and modifications. An on-shift discussion period to review changes and modifications is encouraged.

#### 4.1.3.2 Operating Experience Review

A continuing system SHALL be maintained by the Manager, Plant Operations, so that licensed individuals review operating experience from TMI-2 and from applicable segments of the nuclear industry. Selected operational events and reportable occurrences at the facility should be analyzed and information pertinent to the event collected.

Technical functions and Plant Engineering personnel assigned to assess plant operating experience per Ref 6.7 SHALL recommend operating experience to be analyzed for training purposes.



Subsequent coverage of operating experience in the operational proficiency class series should be considered by the Training and Operations Departments.

These experiences may also be integrated into the plant drill program.

#### 4.1.4 Accelerated Requalification Program

The accelerated requalification program is for licensed individuals having demonstrated deficiencies requiring assignment to a special retraining effort (Ref 6.3, Section (c)(4)(v)).

##### 4.1.4.1 Attendance Requirements

Operators meeting any of the following criteria SHALL be assigned to an accelerated requalification program as described in the referenced sections.

- a) Comprehensive written examination performance deficiencies per section 4.4.2.4.

If the exam failure was due to individual section scores of less than 70% while the overall grade was 80% or greater, the Accelerated Requalification is only required for the failed sections.

If the exam failure was due to an overall score of less than 80%, one of the following Accelerated Requalification programs SHALL be used:

- The Accelerated Requalification is for the entire examination.
- The Accelerated Requalification is only for those sections where scores of less than 80% were achieved.

- b) Annual oral examination failure per Section 4.4.3.4.



- c) Pre-planned class series quiz performance deficiencies per Section 4.4.1.4.
- d) Significant licensed duty performance deficiencies identified by the Manager, Plant Operations.
- e) Skills training participation deficiencies per Section 4.1.2.2.
- f) Pre-planned class series participation deficiencies per Section 4.1.1.1.
- g) Cyclic quiz participation deficiencies per Section 4.4.1.2.

#### 4.1.4.2. Program Content

The accelerated requalification program content SHALL be specifically structured to upgrade knowledge and skills identified as deficient. Examination categories and areas in which performance standards were not met SHALL be covered in the program.

The Supervisor Licensed Operator Training SHALL be responsible for formulating, in writing, individual accelerated requalification programs. They SHALL be approved by the Operator Training Manager and the Manager, Plant Operations.

#### 4.1.4.3. Program Administration

The accelerated requalification program may involve a variety of training exercises, including:

- a) Individual Guided Study
- b) Oral interviews and discussion
- c) Pre-planned classes
- d) Skills training exercises using plant drills.

Successful completion of the accelerated requalification program SHALL be determined by administering an examination. The examination SHALL cover all categories of the requalification written examination and/or all areas of the requalification oral examination originally failed.

#### 4.1.4.4 Performance Standards

Performance standards for the accelerated requalification program SHALL be as follows:

- 1) A score of at least 70% on each accelerated requalification written examination category when individual categories were failed.
- 2) If the initial exam failure was due to an overall score of less than 80% the following applicable standard applies:
  - An overall grade of 80% or greater with each section 70% or greater if the entire exam was re-taken.
  - A score of at least 80% on each section when the re-examination was limited to those sections where scores of less than 80% was initially achieved.
- 3) A passing evaluation on the accelerated requalification oral examination when the initial oral examination scored as failed on the evaluation.

#### 4.1.4.5 Program Failure

In the event that these standards are not met, the individual's suitability for resuming licensed duties SHALL be reviewed by the Manager, Plant Operations and the Operator Training Manager. They SHALL provide a recommendation to the Director of the Unit regarding the individual's permanent removal from licensed duties or additional upgrading efforts to be considered.

If appropriate, another accelerated requalification program SHALL be structured to correct deficiencies. However, in this instance the NRC SHALL be notified and may require evidence of successful completion of this training or may require additional training before being returned to licensed duties. (Ref 6.3, Section (b)).

#### 4.2 Prerequisites

In order to participate in this program, individuals must:

- 1) Hold an Operator license, Senior Operator license, or Senior Reactor Operator limited to Fuel Handling license or,
- 2) Be a Qualified Training Instructor fulfilling his continuing training requirements.

#### 4.3 Instructor Qualifications

- 1) Training Department instructors SHALL be qualified in accordance with approved Training Department procedures.
- 2) "Guest" lecturers who are experts in a particular subject area need not possess the above qualification. "Guest" lecturers SHALL be approved by the Operator Training Manager.

#### 4.4 Trainee Evaluation Scheme

All licensed individuals SHALL be evaluated at the level consistent with their license.

##### 4.4.1 Cyclic Quizzes

All trainees SHALL take a written Category I quiz covering the Program's topic(s) after approximately every 32 hours of instruction. (Ref 6.3, Section (c)(4)(fi) and Ref 6.5, Section 4.3).

##### 4.4.1.1 Quiz Administration

The quiz SHALL contain questions related to the learning objectives covered during the training cycle.

The quizzes SHALL be administered in accordance with Ref 6.13 and any other local control of examination procedures.

All topics covered during the training cycle should be represented by questions in the evaluation.

#### 4.4.1.2 Participation

If a trainee is absent from a scheduled quiz, it should be made up by taking another quiz later in the cycle. In any case, the quiz SHALL be made up as soon as practicable.

Training instructors involved with quiz development may be exempted from taking those portions of the quiz that they developed.

If the requirements for attendance are not met by the end of the Training year, recommendation regarding the licensee's removal from licensed duties and placement in an Accelerated Requalification Program SHALL be made by the Manager, Plant Training to the Director, TMI-2.

#### 4.4.1.3 Quiz Standards

A performance standard of 80% or greater is established for a written quiz.

#### 4.4.1.4 Remedial Review Process

Licensees who do not meet the quiz standard specified in 4.4.1.3 above SHALL complete within a reasonable time a Remedial Review Process as specified by the Supervisor of Licensed Operator Training.

Following the review, a second quiz SHALL be administered covering the identified knowledge deficiencies. If the second quiz is completed with a grade of 80% or greater, the licensee should receive credit for completion of the required quiz.



If the second quiz is unsatisfactory, the Operator Training Manager and Manager, Plant Operations SHALL review the licensee's suitability for continued licensed duties. The Manager, Plant Training SHALL provide a recommendation to the Director, TMI-2 regarding the licensee's removal from licensed duties and placement in an accelerated requalification program.

4.4.2 Comprehensive Written Examination (Ref 6.3, Sections (a)(2) and (c)(4)(i))

In order to determine each licensed individual's knowledge of topics covered in the requalification program and to provide a basis for determining areas in which retraining is needed, a biennial comprehensive written requalification examination SHALL be given.

Prior to sitting for the written exam, the Supervisor of Licensed Operator Training SHALL determine that each licensed individual has satisfactorily completed program requirements.

4.4.2.1 Comprehensive Written Examination Content

The examination items should be derived from knowledge, skills and abilities needed for the licensed position, as described by the learning objectives. (Ref 6.1, Part 41, 43)

The examination SHALL include a representative sample from the categories identified in Attachment #3. (Ref. 6.3, Section (a)(2)(i))

The requalification examination should emphasize the operational application of theoretical concepts and facility administrative limits, Tech. Specs, etc. rather than memorized lists of numbers and facts. (Ref 6.14)

The examination should emphasize the facility changes in equipment, systems, procedures, Tech. Specs etc. and plant experience since the last examination.

The topics SHALL be grouped into examination categories similar to the NRC licensing exam.

#### 4.4.2.1 Examination Administration

The examination SHALL be reviewed and approved by the Operator Training Manager and the Manager, Plant Operation or their designees.

Examination preparers SHALL be administered exams which they were not involved in the preparation of and SHALL be administered entire examinations (Ref 6.4).

#### 4.4.2.3 Examination Participation

ALL licensed individuals SHALL participate in the examination process with the exception of individuals who have successfully completed the NRC licensing exam within six months of the requalification exam date.

#### 4.4.2.4 Examination Performance Standards

To satisfactorily complete the examination, a score of at least 70% on each section and an overall score of 80% or greater SHALL be achieved.

A licensed individual receiving a grade of less than 70% in any examination category or an over-all grade of less than 80%. SHALL be placed in an Accelerated Requalification Program and removed from all licensed duties.

The Operator Training Manager via the Manager, Plant Training SHALL notify the Director of the Unit of written examination results.

#### 4.4.3 Annual Oral Exam (Ref 6.3, Section (a)(2)(ii) and (c)(4)(i))

##### 4.4.3.1 Oral Exam Content

The majority of exam content should be developed from the learning objectives presented during the previous year's training.

The oral exam SHALL require each licensed operator to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a comprehensive sample of the items identified in Ref 6.3, Section (a)(2) (ii) as listed in Attachment #4.

#### 4.4.3.2 Oral Exam Participation

ALL licensed individuals SHALL participate in the examination process.

#### 4.4.3.3 Oral Exam Performance Standard

A failing grade on the oral examination SHALL require the licensed individual to be removed from licensed duties and placed in an accelerated requalification program.

#### 4.4.3.4 Oral Examination Administration

The oral examination SHALL be conducted under a structure enabling consistency of questioning and evaluation. The following guidelines apply:

- a) A checklist identifying the areas to be covered should be used.
- b) Overall evaluation SHALL be made on a pass/fail basis.
- c. Comments on individual strengths and weaknesses SHALL be made on a written record of the student's performance on the questions.

The Supervisor, Licensed Operator Training and the Manager, Plant Operations should establish the oral examination schedule.

Oral examinations SHALL be conducted by a licensed senior operator or personnel who have successfully completed education and training programs required for a senior operator's license.

Each oral examination should be structured so that an examination time of two hours or more is used.

The oral examination should involve sessions conducted in the plant, or in plant areas occupied by individuals whose actions are directed by the licensed operator.

#### 4.4.4 Systematic Observation and Evaluation (Ref 6.3 Section c.4.iii)

Performance deficiencies may indicate a need for remedial or expanded Requalification Training. These performance deficiencies may be identified by any of the following means.

- a) Management Off-Shift Plant Tour Program Reports
- b) Potentially Reportable Event Reports
- c) Licensee Event Reports
- d) Plant Incident Reports
- e) Other routine monitoring of operator performance by Operations Department Management and Training Staff
- f) Review of GPUNC Operating Experience, EP-17 (Ref 6.7)

These deficiencies may also be reviewed per Sections 4.7.4 and 4.7.5 of this program.

#### 4.5 Training Records

##### 4.5.1 General

Training records SHALL be maintained by the Training Department's Administrative Support Section, in accordance with the applicable Training Records Procedure.

##### 4.5.2 Specific Records (Ref 6.3, Section c.5.i)

Records of operator's performance in the requalification program SHALL be maintained in an auditable manner. The Operator Training Section is responsible for establishing the following requalification program records:

- 1) Written examination results for each operator
- 2) Written examination questions and answer keys
- 3) Class series attendance records
- 4) Class series lesson plans/topical outlines and training content records
- 5) Plant drill participation records
- 6) Annual Oral Exam Records



#### 4.5.3 Operational Review Records

Operational review series participation records SHALL be established and maintained by the Operations Department for members of that department.

#### 4.5.4 Program Presentation Correspondence

The Supervisor, Licensed Operator Training SHALL ensure that all pertinent correspondence relating to each program presentation is forwarded to the Operator Training Administrative Assistant.

The Administrative Assistant SHALL establish a program history file for each program presentation.

#### 4.5.5 License Renewal Training File

The Operator Training Administrative Assistant SHALL establish a training file on each candidate in accordance with applicable NRC license renewal certification process procedures. This file will contain information pertinent to the individual's NRC Form #390, License Application. This file is to be maintained and updated as the candidate proceeds through requalification training and license renewal.

#### 4.6 Training Schedule

The operator requalification program SHALL be conducted on a cyclic basis so that all program requirements are completed in a period not to exceed two years.

Successive requalification programs SHALL be conducted on a schedule enabling a continuing program to exist (Ref 6.3, Sections (c)(1) and (a)(1)).

In general, six weeks of training should be scheduled during a seven week period to accommodate six shifts with one week of preparation and development time scheduled for the Training Staff. This seven week period is referred to as a cycle.

#### 4.7 Program Evaluations

##### 4.7.1 Course Evaluation

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The Manager, Plant Training SHALL determine the scope, structure, and frequency of the course evaluation process per Ref 6.8.

#### 4.7.2 Program Evaluation

The Program Evaluation process of Ref 6.10 may be applied to this program as determined by the Manager, Plant Training.

#### 4.7.3 Presentation Evaluation

Evaluation of selected class series SHALL be conducted in accordance with Ref 6.11.

#### 4.7.4 On-The-Job Performance Evaluation

Evaluation by Operation Department supervisors of on-the-job performance by licensed personnel may be utilized to relate job performance to the effectiveness of each site's requalification training in accordance with Reference 6.9.

#### 4.7.5 Biennial Technical Content Review Evaluation

A requalification program technical content review and evaluation should be conducted at the conclusion of each biennial program presentation for each site.

The purpose of this evaluation is to conduct a comprehensive review of reference material in order to determine generic areas where remedial, upgrade, or in-depth training may be appropriate during the next program presentation.

The areas encompassed by the review should include:

- 1) QA inspection, audit, and evaluation reports of the Plant Operations and Training Departments.
- 2) NRC or other outside inspection, audit, and evaluation reports of the Plant Operations and Training Departments, including NRC SALP Reports.
- 3) Annual oral exam results.
- 4) Comprehensive written examination results.
- 5) Cyclic quiz results.
- 6) Plant operational performance indicators.
- 7) Annual On-The-Job evaluation of Section 4.7.4.

Requalification program technical content remedial or upgrade needs determined by the review should be identified, recommended corrective actions structured and a report of these submitted to Operations and Training Departments' Management.

#### 4.8 Program Maintenance

##### 4.8.1 Baseline Documents

Issuance or revision to baseline documents, such as NUREGS, Code of Federal Regulations, Reg. Guides, ANSI Standards, INPO Guidelines, FSAR, etc. SHALL be evaluated for impact on this program description.

##### 4.8.2 Commitments

Commitments made as a result of internal or external program audits and evaluations SHALL be incorporated into the body of this program or its appendices with a specific reference to the source document provided.

##### 4.8.3 Revision Process

All program revisions SHALL be processed in accordance with Ref. 6.12.

##### 4.8.4 Evaluations

Appropriate changes to this program description as a result of the various training evaluation instruments of Section 4.7 SHALL be made.

##### 4.8.5 Program Approval

###### 4.8.5.1 GPUN Approval

This program description and any changes there to SHALL receive the concurrence of the Operator Training Manager and SHALL be approved by the Site Manager, Plant Training and Manager, Plant Operations.

###### 4.8.5.2 NRC Approval

###### a. Initial Approval

This procedure SHALL be submitted to the NRC for approval per Ref 6.3, Section (c).

b. Revision Approval

Revisions to this program which decrease the scope of the requalification program SHALL be submitted to the NRC for approval per Ref 6.6.

Program revisions which do not reduce the scope should be forwarded to the NRC for information.

5.0 Responsibilities

5.1 Supervisor, Licensed Operator Training

- 1) Determine the scope of the fundamentals review and operational proficiency class series
- 2) Scheduling classes to meet the program completion requirements
- 3) Designating those abnormal and emergency procedures to be reviewed for each requalification cycle such that all abnormal and emergency procedures are reviewed biennially
- 4) Resolving problems identified by evaluation of weekly lecture series training sessions
- 5) Establishing the annual oral examination schedule
- 6) Designating personnel to conduct oral examinations
- 7) Formulating individual accelerated requalification programs and designating individuals to conduct the associated examinations
- 8) Establishing the requalification program records identified in Section 4.9
- 9) Development and conduct of the plant drill program

5.2 Operator Training Manager

The Operator Training Manager is responsible for:

- 1) Approving the scope of the fundamentals review and operational proficiency class series
- 2) Approving scheduling and appearance of "guest" lecturers
- 3) Approving accelerated requalification programs
- 4) Notifying the Operations Director of unsatisfactory examination results
- 5) Conducting a required reading program for staff licensed personnel



### 5.3 Manager, Plant Training

The Manager, Plant Training is responsible for:

- 1) Concurring with this requalification program description and approval of any site implementing programs descriptions
- 2) Ensuring that the Training Department's Administrative Support Section maintains the records identified in Section 4.9

### 5.4 Manager, Plant Operations

The Manager of Plant Operations is responsible for:

- 1) Providing inputs to the Training Department on topics to be presented in the fundamentals review and operational proficiency class series.
- 2) Approving plant drill scenarios, the conduct of plant drills, and additions or modifications to training programs as a result of drill critiques
- 3) Reviewing repeated personnel error or other indicators of degraded proficiency and recommending appropriate training
- 4) Providing to the Training Department periodic observations identifying job performance results related to requalification training
- 5) Establishing a continuing system so that operators review documented plant design changes, equipment modifications, procedure changes and technical specification changes, specifying the changes and modifications to be analyzed, and ensuring that on-shift licensed personnel review the selected information in a timely manner
- 6) Establishing a continuing system so that operators review operating experience from GPUN and applicable segments of the nuclear industry and ensuring that on-shift licensed personnel review the information in a timely manner
- 7) Establishing the annual oral examination schedule
- 8) Approving personnel designated to conduct oral examinations
- 9) Approving accelerated requalification programs
- 10) Establishing and maintaining operational review series participation records
- 11) Providing copies of all required reading material to the Operator Training Manager

### 5.5 Managers of Staff Licensees

Managers of Staff Licensees are responsible for:

- 1) Establishing a continuing system so that staff licensees review documented plant design changes, equipment modifications, procedure changes and technical specification changes, specifying the changes and modification to be analyzed, and ensuring that licensed personnel review the selected information in a timely manner
- 2) Establishing a continuing system so that licensed personnel review operating experience from GPUN and applicable segments of the nuclear industry and ensuring that licensed personnel review the information in a timely manner

### 6.0 References

- 6.1 10 CFR 55 - Operator's Licenses, effective 5/26/87
- 6.2 Reg. Guide 1.8
- 6.3 10 CFR 55.59 - Operator Licenses, Requalification, effective 5/26/87
- 6.4 NUREG 1262
- 6.5 INPO 86-025, Guideline for Continuing Training of Licensed Personnel
- 6.6 10 CFR 50.54.1-1, effective 5/26/87
- 6.7 Technical Functions Procedure EP-17, "Review of Industry/GPUN Operating Experience"
- 6.8 7800-ADM-2682.12, "Course Evaluation Process"
- 6.9 7800-ADM-2682.10, "Trainee Evaluation - Once Back On The Job"
- 6.10 7800-ADM-2682.11, "Program Evaluation"
- 6.11 7800-ADM-2607.01, "Instructor Evaluation"
- 6.12 7800-ADM-1218.01, "Management Control Documentation System"
- 6.13 7810-ADM-2604.01, "Control of Examinations for Units I & II"
- 6.14 NUREG 1021 ES-601
- 6.15 NUREG 1262
- 6.16 10 CFR 50 Domestic Licensing of Production and Utilization Facilities
- 6.17 GPUN Memo #7811-87-0765

## Attachment 1

LECTURE SERIES TOPICS

- Theory and Principles of subcritical reactors.
- Heat Transfer, Fluid Flow, and Thermodynamics as they apply to TMI-2.
- Features of facility design.
- Plant instrumentation and control systems.
- Radiation control and safety.
- Applicable portions of Title 10, Chapter 1, Code of Federal Regulations.
- Fuel Handling and Core Conditions.
- Plant Chemistry as it applies to TMI-2.

The pre-planned class series should also include operational proficiency sessions on the following subjects:

- Technical Specifications.
- Administrative Procedures, conditions and limitations.
- Facility design and license changes.
- Major operational evolutions.
- Normal, abnormal and emergency operating procedures. (See Note below)
- Operating history and problems.
- Related applicable nuclear industry operating experience.

Note: All emergency and abnormal procedures SHALL be reviewed by each licensed operator and senior operator on a biennial basis.

Senior operators limited to fuel handling need only review the following emergency and abnormal procedures on a biennial basis:

- Response to Criticality Monitor Alarms
- Excessive Radiation Levels
- Fire (in the Reactor Building)
- Loaded Canister Drop
- Unanticipated Neutron Increase and/or Boron Dilution

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## Attachment 2

PLANT DRILLS

The following drills will be performed on an annual basis:

- Unanticipated Neutron Increase and/or Boron Dilution.
- Changing RCS Water Level Beyond Normal Span.
- \* • Loaded Canister Drop
- Excessive Radiation Levels

The following drills will be performed on a biennial basis:

- Station Blackout
- Station Blackout with Loss of Both Diesel Generators
- Unit 2 Control Room Evacuation
- Rupture/Leak in a Waste Gas Decay Tank
- Unexpected Changed in OTSG Water Level Beyond Normal Span
- Station Emergencies which Impact Epicor II
- Dropped Prefilter or Demineralizer Liner in the CCB (Epicor II)
- SDS Cask Accident or Liner/Transfer Bell
- \* • Response to Criticality Monitor Alarms
- High Reactor Building Pressure
- DWCS - Hose Rupture

\* FHSRO participation required.



## Attachment 3

COMPREHENSIVE WRITTEN EXAMINATION CONTENT

For FHSRO's; (as they apply to the FHSRO's knowledge requirements for defueling)

- a. Theory and Principles of Fuel Criticality
- b. Features of Defueling Facilities Design
- c. Defueling Systems Operating Characteristics
- d. Defueling Systems Instrumentation and Control Systems
- e. Radiation Control and Safety
- f. Applicable Portions of Title 10, Chapter I, Code of Federal Regulations
- g. Normal/Abnormal and Emergency Operating Procedures
- h. Technical Specifications
- i. Defueling Administrative Procedures, Conditions and Limitations
- j. Heat Transfer, Fluid Flow and Thermodynamics as they apply to TMI-2.

For RO's

- a. Theory and Principles of Operation of a Highly Borated and Shutdown Reactor
- b. Plant Systems, Including Primary, Secondary and Radioactive Waste Disposal Systems.
- c. Instrumentation and Control Systems

## Attachment 3

COMPREHENSIVE WRITTEN EXAMINATION CONTENT (CONT.)

- d. Radiation Control and Safety, and Radiation Monitoring Systems and Survey Equipment
- e. Plant Chemistry as it applies to TMI-2
- f. Applicable Portions of Title 10, Chapter 1, Code of Federal Regulations
- g. Fuel Handling and Core Conditions
- h. Technical Specifications
- i. Administrative Procedures, Conditions and Limitations, Emergency and Abnormal Procedures
- j. Heat Transfer, Fluid Flow and Thermodynamics as they apply to TMI-2.

For SRO's

- a. All the above listed for RO's
- b. Conditions and limitation in the facility license
- c. Facility operating limitations in the technical specifications and their bases
- d. Facility licensee procedures required to obtain authority for design and operating changes in the facility
- e. Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions
- f. Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations
- g. Procedures and limitations involved in alterations in core configuration.
- h. Determination of various internal and external effects on core reactivity
- i. Fuel handling facilities and procedures

## Attachment 4

ANNUAL ORAL EXAMINATION CONTENT

- \*1. FSAR, Safety Reviews, system descriptions, operating procedures, Technical Specifications Facility License, Licensee Event Reports.
2. Demonstrate understanding of and/or ability to:
  - a. Manipulate the console controls as required to operate the facility.
  - \*b. Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.
  - \*c. Identify the instrumentation systems and the significance of facility instrument readings.
  - \*d. Perform control manipulations required to obtain desired operating results during normal, abnormal, and emergency situations
  - e. Safely operate the facility's primary coolant, emergency boration and decay heat removal systems, and identify the relations of the proper operation of these systems to the operation of the facility.
  - \*f. Safely operate the facility's auxiliary and emergency systems, including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.
  - \*g. Describe the use and function of the facility's radiation monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.
  - \*h. Respond to significant radiation hazards, including permissible levels in excess of those authorized, and ability to perform other procedures to reduce excessive levels of radiation and to guard against personnel exposure.
  - i. Implement the emergency plan for the facility, including, as appropriate, the operator's or senior operator's responsibility to decide whether the plan should be executed and the duties under the plan assigned.

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## Attachment 4

ANNUAL ORAL EXAMINATION CONTENT (CONT.)

- \*j. Perform as appropriate the assigned position to assume the responsibilities associated with the safe operation of the facility.
  - k. Function within the control room in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.
- \* For the FHSRO, these topics SHALL be limited to a scope consistent with their job responsibilities.



REDUCTIONS IN RO/SRO REQUALIFICATION PROGRAM SCOPE

The following provides a list of those areas where program scope has been reduced.

A. Program Hours of Instruction

Section 7.2.3 of Revision 2 of the program requires that approximately 200 hours of training per year be scheduled. The proposed revision to the Licensed Operator Requalification Training Program specifies no minimum time requirement. The time actually scheduled will be consistent with that needed to accomplish the program requirements. This is a performance based approach, which GPU Nuclear believes to be acceptable based on the current condition of TMI-2.

B. Reactivity Manipulations

Section 7.3.1.A of Revision 2 of the program requires that each licensee perform a variety of reactivity manipulations including:

1. Observation of subcritical multiplication.
2. Observation of reactivity feedback from nuclear heat during startup.
3. Demonstration of the effects of fuel displacement in subcritical multiplication and observed effects on nuclear instrumentation.

The proposed revision to the TMI-2 Licensed Operator Requalification Training Program deletes the requirements to perform these reactivity manipulations. Experience gained through defueling operations has demonstrated that fuel movements have no observable effect on subcritical multiplication or nuclear instrumentation. Classroom lectures on the theory and principles of subcritical reactors are considered to be adequate training coverage of these topics.

C. Research Reactor Training Time

Section 7.3.2 of Revision 2 of the program requires that each licensee receive 20 hours per year of research reactor or Basic Principles Training Simulator training. This has been previously accomplished via the Pennsylvania State University Breazeale Reactor. GPU Nuclear has proposed to delete this requirement since the requirement to perform the reactivity manipulations discussed in B above has been deleted.

D. Watchstanding Requirements

Section 7.3.4 of Revision 2 of the program requires licensed operators to participate in on-shift watchstanding on a periodic basis. This requirement was derived from the previous requirements of 10 CFR 55.31(e), "Conditions of Licenses." The current 10 CFR 55 defines requirements for Inactive and Active licenses. Accordingly, GPU Nuclear proposes to delete the watchstanding requirements currently specified in Revision 2 of the TMI-2 Licensed Operator Requalification

Training Program. GPU Nuclear is submitting (see GPU Nuclear letter 4410-87-L-0187), under separate cover, a exemption request for Inactive and Active Licenses that is consistent with the unique, safe-shutdown condition of TMI-2.

E. Written Examination

Section 7.5.1 of Revision 2 of the program requires that an annual written requalification examination be administered. The period for administration of this examination has been increased to biennial. This change is consistent with the new regulations of 10 CFR 55.59(a)(1).

REDUCTIONS IN FUEL HANDLING SENIOR REACTOR OPERATOR (FHSRO)  
TRAINING PROGRAM SCOPE

The following provides a list of those areas where program scope has been reduced.

A. Reactivity Manipulations

Section 8.3.6.1 of Revision 1 to the TMI-2 FHSRO Training Program, 7821-PGD-2614, requires that licensees perform a variety of documented reactivity manipulations on a periodic basis. The purpose of these manipulations was to maintain familiarity with plant systems, controls, and procedures.

The requirement has been deleted since TMI-2 defueling experience has shown that the licensees perform these evolutions on a frequent basis, thus, the need for specific training program coverage can be deleted.

B. Written Examination

Section 8.4.1 of Revision 1 of the program requires an annual written examination. The period for administration of this examination has been increased to biennial. This change is consistent with the new regulations of 10 CFR 55.59(a)(1).

C. Watchstanding

Section 8.3.6.4.b of Revision 1 requires licensees to participate in on-shift watchstanding on a periodic basis. This requirement was derived from the previous requirement of 10 CFR 55.31(e), "Conditions of Licenses." The current requirements of 10 CFR 55 defines requirements for Inactive and Active licenses. Accordingly, GPU Nuclear proposes to delete the watchstanding requirements currently specified in Revision 1 of the FHSRO Training Program. The licensed FHSROs are assigned to on-shift positions for which they are licensed. GPU Nuclear is submitting (see GPU Nuclear letter 4410-87-L-0187), under separate cover, an exemption request for Inactive and Active licenses that is consistent with the unique, safe-shutdown condition of TMI-2.