

DETROIT EDISON COMPANY
FERMI 2
NRC LICENSED OPERATOR TRAINING

REQUALIFICATION PROGRAM

ADMINISTRATOR'S GUIDE

NT/R199/1.0
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Jan, 1984

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INTRODUCTION

Revision 0
Jan, 1984

INTRODUCTION

The Administrator's Guide is designed to provide the training administrator with course administrative requirements, and guidelines necessary to:

- o Implement consistent training practices
- o Plan and administer the required training
- o Avoid scheduling conflicts
- o Initiate proper documentation
- o Properly evaluate the course

The Administrator's Guide is also concerned with providing the Administrator with the means to ensure the objectives of the course are covered.

This guide is furthermore designed to ensure regulations, standards and procedures are complied with.

The guide covers suggested training aids, strategies, and methods used to conduct the course. The intent here is to provide the Administrator with information that would be helpful to the instructor.

Records must be initiated by the Administrator to properly document all information pertinent to this course. Records maintained for this course will comply with regulations and standards (Federal & Company).

General guidelines are written to provide direction for the Administrator and to facilitate the implementation of this course. The guidelines are not absolute policy. They may be changed and/or modified as experience dictates.

The "Requalification Training Program" will be addressed as "the continuing training program" within the text of this Administrator's Guide.

PURPOSE AND REQUIREMENTS

Revision 0
Jan, 1984

PURPOSE

<u>Subject</u>	NRC Licensed Operator Requalification
<u>For</u>	Nuclear Supervising Operators, Nuclear Assistant Shift Supervisors, Nuclear Shift Supervisors, Selected Plant Staff.
<u>Pre-Requisite(s)</u>	Holding a Current NRC License for Fermi 2 or Selected by Plant Management to attend.
<u>Purposes(s)</u>	<p>The purpose of this course is to ensure that the knowledge and skills for safe operation of Fermi 2 are maintained at a high level of competence. This program includes all NRC required training as well as those courses deemed necessary by Detroit Edison.</p> <p>This course utilizes the knowledge gained in previous required NRC License training courses, in conjunction with actual application on the Plant Simulator to better understand the detailed operations of the plant during normal, abnormal and emergency plant operations.</p> <p>The course also emphasizes aspects of theory and plant operation, not normally used, to ensure operator familiarity should the need arise to utilize this information. This program will incorporate changes in Plant Operation or System Operation caused by regulatory changes, design changes, or industry wide "lessons learned" operational changes.</p>

REQUIREMENTS

NRC Licensed Operator Requalification Program

Purpose	The purpose of this section of the Administrators Guide is to provide direction on implementation and establish requirements for continuing training of licensed operators (RO, SRO, SRO-R) identified on the Licensed Operator Training Program Description.
Description	This section of the Administrator's Guide provides a description of the continued training program for licensed operators.
<u>Definitions</u>	<p>Course: A major subset or breakdown of a program dealing with similar content and/or similar objectives (e.g., Systems Training).</p> <p>Inactive Licensed Personnel: Means those licensed personnel who have not been actively performing the functions of an operator or senior operator for a period of four months or longer.</p> <p>Licensed Staff member: Means any person who maintains an operator's or senior operator's license for the purpose of providing backup capability to the normal operating staff. Such persons may include, but are not limited to, the Assistant Superintendent, the Operations Engineer, the Reactor Engineer, and Nuclear Training Operations and Simulator instructional staff.</p> <p>On-Shift Discussion: On-shift discussions may include review of procedures, discussions of significant LER's and/or other specific material assigned by the training staff.</p> <p>Program: (curricula, prescription, training path) The total training a candidate receives to become or remain qualified as a job incumbent (e.g., NRC License Candidate Training Program).</p> <p>Reactivity Control Manipulations: Control manipulations which meet the requirements of one or any combination of the following are considered as acceptable reactivity control manipulations:</p>

Definitions
(cont'd)

- o Any plant or reactor startup, to include a range such that reactivity feedback from heat addition is noticeable.
- o Any temperature change, heatup or cool-down, 100°F.
- o Plant or reactor shutdown.
- o Plant shutdown or reactor hot standby.
- o Control rod sequence changes.
- o Shutdown margin check.
- o Control rod scram insertion time tests.
- o Any reactor power change of 10% or greater including test of equipment where load changes are performed with control rods, "load selector" of EHC system in manual or where the recirculation system is in manual speed control.
- o Plant and reactor operations that involves emergency or transient procedures where reactivity is changing.
- o Refueling operations where fuel is moved in the core.
- o See Addendum A.

Reactor Operator (RO): An NRC licensed individual who manipulates the controls of a facility.

Senior Reactor Operator (SRO): An NRC licensed individual designated by a facility licensee under Part 50 of the Code of Federal Regulations Article 10 to direct the licensed activities of licensed operators.

SRO-R: Identifies those candidates that hold an NRC Operator License restricted from full performance of Licensed Activities or limited to those activities associated with refueling operations.

Responsibility

The Supervisor, Nuclear Training and Qualifications--Operations and Simulator shall be responsible for insuring proper implementation of the continuing training program described in this Administrator's Guide.

Applicability

All personnel who hold an NRC license and are required to maintain that license shall participate in the Licensed Operator Continuing Training Program. Individuals who hold an SRO-R shall participate in those portions of the continuing training program appropriate to the duties they perform.

Program Description (Required Topics)

The Continuing Training Program for all licensed operators shall consist of the following topics:

- o Thermal Science Review.
 - o Selected Systems Review.
 - o 10CFR19, 20, 50, 55 and 100.
 - o Operational Characteristics and Procedures.
 - o Reactor Theory.
 - o Technical Specifications
 - o Procedure Revisions Review.
 - o Recent Operating Experience Document Review.
 - o Mitigating Core Damage.
 - o Fuel Handling Review.
 - o Radiation Worker.
 - o Respirator.
 - o EF2 Orientation.
 - o Safety Electric Switch 480V (SAFLEX 480).
 - o Task Required Courses.
-

Procedure Review

Each licensee shall review on an annual basis, the abnormal and emergency operating procedures. Procedure review can be completed by utilizing any of the following methods:

- o Actual Performance under abnormal or emergency operating conditions.
 - o Simulated walkthrough of the procedural steps necessary to cope with the situation.
 - o Brief lectures conducted by licensed individuals.
 - o Simulator Drills.
 - o Continuing Training topic presentation.
-

On-the-Job Training

All licensed personnel shall participate, to the extent practicable, in Reactor control manipulations and plant evolutions to demonstrate their skill and familiarity with plant systems.

On-the-Job Training
(cont'd)

- o Each licensed Reactor Operator shall manipulate, and each Licensed Senior Reactor Operator shall manipulate or direct the manipulation of the Reactor or Simulator controls to produce reactivity changes during the 2 year term of license.
- o Each licensed individual shall perform or direct the performance of the control manipulations and plant evolutions listed in Addendum A. Manipulations are to be performed in the plant or on the simulator as practicable.

Procedure, Design,
Facility Changes

All licensed personnel shall be kept cognizant of Fermi 2 design, procedure and facility changes, appropriate to their license, using one of the following methods:

- o Brief lectures conducted by cognizant licensed supervisory personnel.
- o Required Reading List.
- o Written communique to each licensed individual.
- o Continuing Training Program.

Additional
Requirements

Persons holding NRC licenses, but in the INACTIVE STATUS, shall be refamiliarized with plant systems, procedures, and operating events. Upon completion of the refamiliarization program, the licensee will be examined prior to resuming licensed duties. The refamiliarization program shall consist (as a minimum) of the following.

- o Procedure Changes
- o License Changes
- o Plant System Modifications
- o Plant Incidents
- o Significant License Event Reports
- o Control Room Orientation

The completion of the refamiliarization program shall include written and oral examinations to insure that the licensee is up-to-date and familiar with the plant. Successful completion is demonstrated by a score of 80% on the written exam and a pass grade on the oral exam. The Supervisor, Nuclear Training and Qualification--Operations and Simulator shall document the satisfactory completion of the refamiliarization

Additional
Requirements (cont'd)

program and certify the licensee. The NRC shall be notified of this fact. NRC approval of the certification is required prior to the resumption of Licensed Duties.

Unsuccessful completion of the refamiliarization program shall require the individual to receive additional training in deficient areas as indicated by the weak areas on the written and oral exams.

Administering
Examinations

Three types of examinations will be used in the continuing training program. For certification by the NRC, it is necessary to ensure that individual performance can be determined and properly documented with each type examination. The methods of examining and administration requirements for each are as follows:

- o Written - All written examinations will be taken under the supervision of a proctor. The proctor will be present at all times during the examinations. Only materials required for use with the examination will be present. The proctor will not answer examination questions nor allow anyone to answer or make available the answer to a question.
- o Oral - Oral examinations can be administered at any location where the required materials are available. The person giving the oral examination is responsible for ensuring that the individual being evaluated is working independently and not using unauthorized material to assist in answering questions.
- o Performance - Performance will be monitored in the control room and/or while operating the simulator. The evaluator is responsible for documenting the individual's ability to operate equipment under normal, abnormal and emergency conditions.

Evaluation

All licensed personnel shall be examined at the frequency noted below.

Examinations will be conducted at the end of each cycle. A minimum grade of 80% is required on each cycle examination.

Evaluation
(cont'd)

A grade of less than 80% on any Cycle examination shall require that individual to be rescheduled for that cycle at the earliest possible date or to upgrade knowledge level in the deficient areas on a program of directed individualized instruction and be re-examined to the original criteria.

Each licensed individual shall take an annual exam. A minimum overall grade of 80% with all individual category grades greater than or equal to 70% is required.

Operational examinations shall be administered to each licensed individual on an annual basis at an appropriate time during any of the cycles. The operational exam will be evaluated on a pass/fail basis.

Each licensed individual shall be evaluated by his/her immediate supervisor on an annual basis. This evaluation should address such areas as performance during abnormal evolutions and routine performance of license activities.

A licensed individual who receives an overall grade of less than 80% on the annual exam, or receives a grade of less than 70% on any category of the annual exam shall be immediately relieved of all licensed duties and placed in an accelerated requalification program.

- o An individual who is relieved of his licensed duties shall be so advised by plant management.
- o He may return to his licensed duties following successful completion of those areas noted as failures on the written exam. Completion of this accelerated requalification training shall require a grade of not less than 80% on examination given over the area(s) noted as failure(s).

ADDENDUM A

EF2 Requalification Control Manipulations

The following is a list of the required Reactivity Control Manipulations for requalification. The starred items shall be performed on an annual basis; all other items shall be performed over a two-year period.

- *1. Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.
- *2. Plant Shutdown.
- *3. Manual control feedwater during startup and shutdown.
- *4. Any significant (>10%) power changes in manual rod control or recirculation flow.
- 5. Any reactor power change of 10% or greater where load change is performed with load limit control.
- *6. Loss of coolant including:
 - a. inside and outside primary containment
 - b. large and small, including leak-rate determination
- 7. Loss of instrument air (if simulated plant specific).
- 8. Loss of electrical power (and/or degraded power sources).
- *9. Loss of core coolant flow/natural circulation.
- 10. Loss of condenser vacuum.
- 11. Loss of service water if required for safety.
- 12. Loss of shutdown cooling.
- 13. Loss of component cooling system or cooling to an individual component.
- 14. Loss of normal feedwater or normal feedwater system failure.
- *15. Loss of all feedwater (normal and emergency).
- 16. Loss of protective system channel.
- 17. Mispositioned control rod or rods (or rod drops).

ADDENDUM A (cont'd)

18. Inability to drive control rods.
19. Conditions requiring use of Standby Liquid Control system.
20. Fuel cladding failure or high activity in reactor coolant or offgas.
21. Turbine or generator trip.
22. Malfunction of automatic control system(s) which affect reactivity.
23. Malfunction of reactor coolant pressure/volume control system.
24. Reactor trip.
25. Main steam line break (inside or outside containment).
26. Nuclear instrumentation failure(s).

TRAINING COURSE OBJECTIVES

Revision 0
Jan, 1984

COURSE OUTLINE

I. Cycle 1

A. Selected Systems Review, 500 03 15 00

1. Residual Heat Removal
2. High Pressure Coolant Injection
3. Reactor Core Isolation Cooling
4. Automatic Depressurization System
5. Standby Liquid Control
6. Core Spray

B. Technical Specifications

C. Procedure Revision Review

D. Recent Operating Experience Document Review

1. LER's
2. SOER's
3. Nuclear Network
4. DCP's
5. FSAR Changes

E. Reactor Theory, 450 01 10 00

F. Simulator Operations, 500 09 01 00

G. EF2 Orientation, 550 05 02 00

II. Cycle 2

A. Selected Systems Review, 500 03 15 00

1. Reactor Pressure Vessel and Internals
2. Reactor Pressure Vessel Instrumentation

COURSE OUTLINE (cont'd)

3. Reactor Building Closed Circulating Water/Emergency Equipment Cooling Water
 4. Primary Control and Isolation Control
 5. Neutron Monitoring (SRM, IRM, PRM, TIP)
 6. Control Rod Drive Mechanism and Control Rod Drive Hydraulics
- B. Technical Specifications
- C. Procedure Revision Review
- D. Recent Operating Experience Document Review
1. LER's
 2. SOER's
 3. Nuclear Network
 4. DCP's
 5. FSAR Changes
- E. Simulator Operations, 500 09 01 00
- F. SAFLEX (480), 450 01 11 00

III. Cycle 3

- A. Selected Systems Review, 500 03 15 00
1. Reactor Water Cleanup System
 2. Rod Block Monitor
 3. Rod Sequence Control System
 4. Reactor Manual Control System
 5. Rod Worth Minimizer
 6. Recirc. System and Flow Control
 7. Standby Gas Treatment System
 8. Control Center Heating, Ventilation and Air Conditioning

COURSE OUTLINE (cont'd)

- B. Technical Specifications
- C. Procedure Revision Review
- D. Recent Operating Experience Document Review
 - 1. LER's
 - 2. SOER's
 - 3. Nuclear Network
 - 4. DCP's
 - 5. FSAR Changes
- E. Reactor Theory, 450 01 10 00
 - 1. Review Problem
- F. Simulator Operations, 500 09 01 00
- G. Task Required Course
 - 1. Damage and Rescue, 500 04 18 00

IV. Cycle 4

- A. Selected Systems Review, 500 03 15 00
 - 1. Diesel Generators
 - 2. Main Steam
 - 3. Off Gas
 - 4. Main Turbine Control
 - 5. Main Generator
 - 6. Feed and Condensate
 - 7. Remote Shutdown
- B. Technical Specifications
- C. Procedure Revisions Review

COURSE OUTLINE (cont'd)

D. Recent Operating Experience Document Review

1. LER's
2. SOER's
3. Nuclear Network
4. DCP's
5. FSAR Changes

E. Fuel Handling Review, 500 03 21 00

F. Simulator Operations, 500 09 10 00

V. Cycle 5

A. Selected Systems Review, 500 03 15 00

1. Electrical Distribution
2. Fire Protection
3. Reactor Protection System
4. Process Radiation Monitoring System and Area Radiation Monitoring System
5. Containment Gas Control (Inerting, Venting and Purging)

B. Operational Characteristic and Procedures

C. Technical Specifications

D. Procedure Revisions Review

E. Recent Operating Experience Document Review

1. LER's
2. SOER's
3. Nuclear Network
4. DCP's
5. FSAR Changes

COURSE OUTLINE (cont'd)

F. Reactor Theory, 450 01 10 00

1. Review Problems

G. Simulator Operations, 500 09 10 00

VI. Cycle 6

A. Mitigating Core Damage, 500 08 10 00

B. 10CFR19, 20, 50, 55 and 100, 500 10 02 00

C. Thermal Science Review, 500 01 12 00

D. Technical Specifications

E. Procedure Revisions Review

F. Recent Operating Experience Document Review

1. LER's

2. SOER's

3. Nuclear Network

4. DCP's

5. FSAR Changes

G. Simulator Operations, 500 09 01 00

VII. Cycle 7

A. Operational Characteristics and Procedures, 500 08 02 00

B. Reactor Theory, 450 01 1000

C. Technical Specifications

D. Procedure Revisions Review

E. Recent Operating Experience Document Review

1. LER's

2. SOER's

COURSE OUTLINE (cont'd)

3. Nuclear Network

4. DCP's

5. FSAR Changes

F. Simulator Operations, 500 09 01 00

VIII. Cycle 8

A. Radiation Worker, 600 05 08 00

B. Respirator Training, 600 05 09 00

C. Task Required Courses

1. RERP, 550 08 06 00

2. Fire Brigade Member, 600 05 03 00 (odd years)

3. Fire Brigade Leader, 600 05 05 00 (even years)

COURSE OBJECTIVES

Cycle 1 Objectives

1. Selected Systems Review

- o Be able to describe, to a level consistent with the grade of operator license, system operation, technical specifications, normal, abnormal and emergency operating procedures, and system or design changes.

2. Technical Specifications

- o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operations, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.

3. Procedure Revisions Review

- o Be able to discuss any major procedure changes that have occurred since the previous training cycle.

4. Recent Operating Experience Document Review

- o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.

5. Be able to satisfactorily perform selected Simulator Operations.

6. EF2 Orientation

- o Be able to discuss site security, area access control, and responsibilities toward security, safety and Quality Assurance.

Cycle 2 Objectives

1. Selected Systems Review

- o Be able to describe, to a level consistent with the grade of operator license, system operation, technical specifications, normal, abnormal and emergency operating procedures, and system or design changes.

COURSE OBJECTIVES (cont'd)

2. Technical Specifications

- o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.

3. Procedure Revisions Review

- o Be able to discuss any major procedure changes that have occurred since the previous training cycle.

4. Recent Operating Experience Document Review

- o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.

5. Be able to satisfactorily perform selected Simulator Operations.

6. Safety Electric Switch 480V (SAFLEX 480)

- o Be able to discuss in detail the operation of SAFLEX 480 volt switches and associated safety precautions.

Cycle 3 Objectives

1. Selected Systems Review

- o Be able to describe, to a level consistent with the grade of operator license, system operation, technical specifications, normal, abnormal and emergency operating procedures, and system or design changes.

2. Technical Specifications

- o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.

3. Procedure Revisions Review

- o Be able to discuss any major procedure changes that have occurred since the previous training cycle.

COURSE OBJECTIVES (cont'd)

4. Recent Operating Experience Document Review
 - o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.
5. Be able to satisfactorily perform selected Simulator Operations.
6. Task Required Course

Cycle 4 Objectives

1. Selected Systems Review
 - o Be able to describe, to a level consistent with the grade of operator license, system operation, technical specifications, normal, abnormal and emergency operating procedures, and system or design changes.
2. Technical Specifications
 - o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.
3. Procedure Revisions Review
 - o Be able to discuss any major procedure changes that have occurred since the previous training cycle.
4. Recent Operating Experience Document Review
 - o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.
5. Fuel Handling Review
 - o Be able to thoroughly describe technical specifications, interlocks, and applicable procedures.
6. Be able to satisfactorily perform selected Simulator Operations.

Cycle 5 Objectives

1. Selected Systems Review

COURSE OBJECTIVES (cont'd)

- o Be able to describe, to a level consistent with the grade of operator license, system operation, technical specifications, normal, abnormal and emergency operating procedures and system or design changes.
- 2. Technical Specifications
 - o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.
- 3. Procedure Revisions Review
 - o Be able to discuss any major procedure changes that have occurred since the previous training cycle.
- 4. Recent Operating Experience Document Review
 - o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.
- 5. Operating Characteristics and Procedures (OC&P)
 - o Be able to thoroughly discuss integrated plant operations, expected transients for various accidents, abnormal and emergency operating procedures.
- 6. Be able to satisfactorily perform selected Simulator Operations.

Cycle 6 Objectives

- 1. Mitigating Core Damage
 - o Be able to discuss the mitigation of accidents involving a degraded core.
- 2. 10CFR19, 20, 50, 55 and 100
 - o Be able to thoroughly discuss pertinent information contained in applicable chapters of 10CFR.
- 3. Technical Specifications
 - o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition

COURSE OBJECTIVES (cont'd)

for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.

4. Procedure Revisions Review

- o Be able to discuss any major procedure changes that have occurred since the previous training cycle.

5. Recent Operating Experience Document Review

- o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.

6. Thermal Science Review

- o Be able to solve simple problems with the aid of tables and formulas in the areas of Thermodynamics, Heat Transfer and Fluid Mechanics.

7. Be able to satisfactorily perform selected Simulator Operations.

Cycle 7 Objectives

1. Operating Characteristics and Procedures (OC&P)

- o Be able to thoroughly discuss integrated plant operations, expected transients for various accidents, abnormal and emergency operating procedures.

2. Reactor Theory

- o Be able to describe selected principles of Nuclear Power Plant Operations including applicable theory.

3. Technical Specifications

- o Be able to discuss any Technical Specifications covered during the cycle. This discussion should include the Limiting Condition for operation, its bases, its applicability and any actions that occur within an hour. A general idea of actions in excess of an hour should also be expressed.

4. Procedure Revisions Review

- o Be able to discuss any major procedure changes that have occurred since the previous training cycle.

COURSE OBJECTIVES (cont'd)

5. Recent Operating Experience Document Review

- o Be able to discuss any applicable LER's, SOER's, Nuclear Network, DCP's, or FSAR changes that have been issued since the previous training cycle.

6. Be able to satisfactorily perform selected Simulator Operations.

Cycle 8 Objectives

1. Radiation Worker

- o Be able to thoroughly discuss radiation fundamentals, contamination and control, radiation exposure limits, methods of minimizing radiation exposure, personnel dosimetry, personnel monitoring and use of protective clothing.
- o Demonstrate ability to correctly; don anti "c's", complete administrative requirements for entry into a controlled area, and removal of anti "c's".

2. Respirator Training

- o Be able to thoroughly discuss types of respirators, use of each respirator, restrictions associated with each respirator, and safety precautions.
- o Demonstrate ability to correctly don, operate, and remove all respirators.

3. Task Required Courses

a. RERP

- o Be able to describe, to a level consistent with position responsibility, emergency response, exposure control and Emergency Response Facilities, should an emergency condition occur.

b. Fire Brigade Member (odd numbered years)

- o Be able to discuss individual responsibilities, group responsibilities, types of extinguishing devices, and control and extinguishing methods for any type of fire.
- o Demonstrate ability to use all portable fire extinguishers and hose streams.

COURSE OBJECTIVES (cont'd)

- c. Fire Brigade Leader (even number years)
 - o Be able to thoroughly discuss strategical concepts, fire ground assessment, and emergency command systems involved with fire fighting operations.

CONDUCT OF COURSE

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COURSE MATERIAL CHECKLIST

Instructor Materials

- o Technical Specifications
- o Marker Board (white)
- o Marker Board Pens
- o Examinations/Answer Key
- o Critique Sheets
- o Final Safety Analysis Report
- o 20.000.00 Series Procedures
- o 22.000.00 Series Procedures
- o 23.000.00 Series Procedures
- o 24.000.00 Series Procedures
- o 29.000.00 Series Procedures
- o Flip Chart
- o Instructor's Guide
- o LER's
- o Simulator
- o Presentation History Forms

Student Materials

- o Technical Specifications
- o Paper/pencils

SUGGESTED METHODS/STRATEGIES

During the classroom phase, an instructional/seminar approach is used. The students review aspects of theory and plant operation not normally utilized on a day-to-day basis. The instructor also guides the students through events, analysis of events, and restoration of the Enrico Fermi plant during Infrequent, Abnormal, and Emergency Conditions. Students participate in the seminar, reviewing and building upon their knowledge of Enrico Fermi plant systems, and Control Room/local instrumentation and controls.

During the Simulator Operations phase the instructor guides students through plant evolutions. The students use the latest revisions of actual plant procedure to perform these evolutions. Controls, instrumentation, alarms, interlocks, etc., associated with the evolution will be identified and explained if necessary. Activities outside the Control Room which are performed by auxiliary personnel (NPPO, NAPPO, Health Physics, etc.) will be identified, explained, and walked through as time permits.

REFERENCES

Fermi 2 Technical Specifications
EFII Final Safety Analysis
Significant Event Reports
Title 10 Code of Federal Regulations
Division 1 Regulatory Guides
General Operating Procedures
Abnormal Operating Procedures
Emergency Operating Procedures
Administrative Procedures
System Operating Procedures
System Surveillance Procedures
NUREG 0737

GENERAL GUIDELINES

General guidelines are established to ensure training standards are met properly. These guidelines are designed to give direction to the Administrator in implementing the course for the NRC Licensed Operators.

The general guidelines are not absolute policy and may be modified as requirements, experience, or conditions dictate.

Pre-Course Preparation

The Administrator must observe the following:

1. That the course is scheduled without major conflicts.
2. That the instructor is notified when the course is to be taught (2 week lead-time).
3. That the classroom or training area is scheduled for this course.
4. That the instructor has the required material necessary to teach the course.
5. That the classroom equipment and materials are ready for use on location.
6. That the trainees are notified concerning course schedule, time, and place in written form (2 week lead-time).
7. That all necessary administrative and clerical work is completed prior to course implementation.

Course Implementation

The Administrator must observe the following:

1. Maintain close coordination with instructor to ensure smooth flow of schedule and material.
2. Coordinate any request from the instructor for materials not normally used in class.

The Instructor is responsible for the following:

1. Conduct of trainees
2. Following lesson plans
3. Safety

4. Testing and Evaluation
5. Maintaining starting and finishing time
6. Monitoring all tests
7. Security of equipment
8. Document required records

Post Course Responsibilities

The Administrator should observe the following:

1. Record trainee attendance of course (maintain documentation).
2. Record courses completion documentation (grades scores).
3. Dictate and record any remedial assignments required (as found appropriate) in this course.
4. Maintain updated progress review of trainee attending this course.
5. Review course critiques with instructor.
6. Complete all required documentation, as per Nuclear Operations Training Records procedure.
7. Filing of examination in individual's training folder.
8. Filing of examination with answers in master training records examination files.

SUGGESTED SCHEDULE

Cycle 1

1. Selected Systems Review
2. Technical Specifications
3. Procedure Review Revisions
4. Recent Operating Experience Document Review
5. Simulator Operations
6. Cycle Examination
7. EF2 Orientation

Cycle 1

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	RHR
	11:30 - 12:00	Lunch
	12:00 - 1:00	RHR
	1:00 - 2:00	HPCI
	2:00 - 3:00	HPCI
	3:00 - 4:00	Study Period
Tues	7:30 - 8:30	RCIC
	8:30 - 9:30	RCIC
	9:30 - 10:30	ADS
	10:30 - 11:30	SLC
	11:30 - 12:00	Lunch
	12:00 - 1:00	Core Spray
	1:00 - 2:00	Core Spray
	2:00 - 3:00	Reactor Theory Review Problem
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 2:00	EF2 Orientation
	2:00 - 4:00	EF2 Orientation

Cycle 2

1. Selected Systems Review
2. Technical Specifications
3. Procedure Revisions Review
4. Recent Operating Experience Document Review
5. Simulator Operations
6. Cycle Examination
7. Safety Electric Switch 480V (SAFLEX 480)

Cycle 2

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	Reactor Pressure Vessel and Internals
	11:30 - 12:00	Lunch
	12:00 - 1:00	Reactor Pressure Vessel Instrumentation
	1:00 - 2:00	RBCCW/EECW
	2:00 - 3:00	RBCCW/EECW
	3:00 - 4:00	Study Period
Tues	7:30 - 8:30	Primary Control and Isolation Control
	8:30 - 9:30	Primary Control and Isolation Control
	9:30 - 10:30	Neutron Monitoring (SRM, IRM, PRM, TIP)
	10:30 - 11:30	Neutron Monitoring (SRM, IRM, PRM, TIP)
	11:30 - 12:00	Lunch
	12:00 - 1:00	CRDM and CRD Hydraulics
	1:00 - 2:00	CRDM and CRD Hydraulics
	2:00 - 3:00	CRDM and CRD Hydraulics
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 1:00	SAFLEX (480)
	1:00 - 4:00	Simulator Operations

Cycle 3

1. Selected Systems Review
2. Technical Specifications
3. Procedure Revisions Review
4. Recent Operating Experience Document Review
5. Simulator Operations
6. Cycle Examination
7. Task Required Course
 1. Damage and Rescue

Cycle 3

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	RWCU
	11:30 - 12:00	Lunch
	12:00 - 1:00	RBM
	1:00 - 2:00	RSCS
	2:00 - 3:00	RMCS
	3:00 - 4:00	Study Period
Tues	7:30 - 8:30	RWM
	8:30 - 9:30	Recirc. System and Flow Control
	9:30 - 10:30	Recirc. System and Flow Control
	10:30 - 11:30	SBGTS
	11:30 - 12:00	Lunch
	12:00 - 1:00	Control Center HVAC
	1:00 - 2:00	Control Center HVAC
	2:00 - 3:00	Reactor Theory Review Problem
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 4:00	Damage and Rescue

Cycle 4

1. Selected Systems Review
2. Technical Specifications
3. Procedure Revisions Review
4. Recent Operating Experience Document Review
5. Fuel Handling Review
6. Simulator Operations
7. Cycle Examination

Cycle 4

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	Diesel Generators
	11:30 - 12:00	Lunch
	12:00 - 1:00	Diesel Generators
	1:00 - 2:00	Main Steam
	2:00 - 3:00	Off Gas
	3:00 - 4:00	Study Period
Tues	7:30 - 8:30	Main Turbine Control
	8:30 - 9:30	Main Turbine Control
	9:30 - 10:30	Main Generator
	10:30 - 11:30	Main Generator
	11:30 - 12:00	Lunch
	12:00 - 1:00	Feed and Condensate
	1:00 - 2:00	Feed and Condensate
	2:00 - 3:00	Remote Shutdown
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Fuel Handling Review
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations

Cycle 5

1. Selected Systems Review
2. Operational Characteristics and Procedures
3. Technical Specifications
4. Procedure Revisions Review
5. Recent Operating Experience Document Review
6. Simulator Operations
7. Cycle Examination

Cycle 5

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	Electrical Distribution
	11:30 - 12:00	Lunch
	12:00 - 1:00	Electrical Distribution
	1:00 - 2:00	Fire Protection
	2:00 - 3:00	Fire Protection
	3:00 - 4:00	Reactor Theory Review Problem
Tues	7:30 - 8:30	RPS
	8:30 - 9:30	RPS
	9:30 - 10:30	PRMS and ARMS
	10:30 - 11:30	PRMS and ARMS
	11:30 - 12:00	Lunch
	12:00 - 1:00	Containment Gas Control (Inerting, Venting and Purging)
	1:00 - 2:00	OC&P
	2:00 - 3:00	OC&P
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations

Cycle 6

1. Mitigating Core Damage
2. 10CFR19, 20, 50, 55 and 100
3. Thermal Science Review
4. Technical Specifications
5. Procedure Revisions Review
6. Recent Operating Experience Document Review
7. Simulator Operations
8. Cycle Examination

Cycle 6

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	Mitigating Core Damage
	11:30 - 12:00	Lunch
	12:00 - 1:00	Mitigating Core Damage
	1:00 - 2:00	Mitigating Core Damage
	2:00 - 3:00	CFR19, 20, 50, 55 and 100
	3:00 - 4:00	CFR19, 20, 50, 55 and 100
Tues	7:30 - 8:30	Thermal Science Review
	8:30 - 9:30	Thermal Science Review
	9:30 - 10:30	Thermal Science Review
	10:30 - 11:30	Thermal Science Review
	11:30 - 12:00	Lunch
	12:00 - 1:00	Thermal Science Review
	1:00 - 2:00	Thermal Science Review
	2:00 - 3:00	Thermal Science Review
	3:00 - 4:00	Study Period
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 11:30	Cycle Examination
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations

Cycle 7

1. Operating Characteristics and Procedures
2. Reactor Theory
3. Technical Specifications
4. Procedure Revisions Review
5. Recent Operating Experience Document Review
6. Simulator Operations
7. Annual Examination

Cycle 7

Mon	7:30 - 8:30	Technical Specifications
	8:30 - 10:30	Procedure Revisions Review, Recent Operating Experience Document Review
	10:30 - 11:30	OC&P
	11:30 - 12:00	Lunch
	12:00 - 1:00	OC&P
	1:00 - 2:00	OC&P
	2:00 - 3:00	OC&P
	3:00 - 4:00	Study Period
Tues	7:30 - 8:30	Reactor Theory
	8:30 - 9:30	Reactor Theory
	9:30 - 10:30	Reactor Theory
	10:30 - 11:30	Reactor Theory
	11:30 - 12:00	Lunch
	12:00 - 1:00	Program Study
	1:00 - 2:00	Program Study
	2:00 - 3:00	Program Study
	3:00 - 4:00	Program Study
Wed	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Thur	7:30 - 11:30	Simulator Operations
	11:30 - 12:00	Lunch
	12:00 - 4:00	Simulator Operations
Fri	7:30 - 2:30	Annual Examination
	2:30 - 4:00	Simulator Operations

Cycle 8

1. Radiation Worker
2. Respirator Training
3. Task Required Courses
 - a. RERP
 - b. Fire Brigade Member (even numbered years)
 - c. Fire Brigade Leader (odd numbered years)

Cycle 8

Mon	7:30 - 11:30	Radiation Worker (*)
	11:30 - 12:00	Lunch
	12:00 - 4:00	Respirator Training (*)
Tues	7:30 - 11:30	RERP
	11:30 - 12:00	Lunch
	12:00 - 4:00	RERP
Wed	7:30 - 11:30	Fire Brigade Member (**)
		Fire Brigade Leader (***)
	11:30 - 12:00	Lunch
	12:00 - 4:00	Fire Brigade Member (**)
		Fire Brigade Leader (***)
Thur	7:30 - 11:30	Fire Brigade Member (**)
	11:30 - 12:00	Lunch
	12:00 - 4:00	Fire Brigade Member (**)
Fri	7:30 - 11:30	Fire Brigade Member (**)
	11:30 - 12:00	Lunch
	12:00 - 4:00	Fire Brigade Member (**)

* Time designated is for pre-testing and to upgrade on two (2) unsatisfactory units. Time for other unsatisfactory units will require the individual to put in additional hours as need on Saturday during odd numbered years.

** Course given on even numbered years (1984, 1986, etc.)

***Course given on odd numbered years (1983, 1985, etc.)