ATTACHMENT 1

REPLACEMENT OPERATOR TRAINING PROGRAM DESCRIPTION

TMI-1

Submitted S. L. Newton 1/7/81
S. L. Newton Date
Supervisor, Operator Training

Approved R. A. Knief 1/12/81
R. A. Knief Date
Manager-Training

Approved M. J. Ross 1/23/81
M. J. Ross Date
Manager of Operations

REPLACEMENT OPERATOR TRAINING PROGRAM DESCRIPTION

TMI-1

SUBMITTED: S L Newton , 7/21/81
Date

S. L. Newton
Operator Training Manager

APPROVED: R A Knief , 7/23/81
Date

R. A. Knief
Manager-Training

APPROVED: M. J. Ross , 7/31/81
Date

M. J. Ross
Manager of Operations

Revision 0
01/16/81
Attachment #4

TRAINING PROGRAM REVISION REQUEST

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

1. Training Program REPLACEMENT OPERATOR - TMI-1

   # _____, Rev. 0.

2. Reason for request: (be brief)
   (1) To assign trainees to their future snift during OJT.
   (2) To delete requirement for Shift Supervisor to designate eask Examiners in writing, since he will have total control of his trainees during their OJT.
   (3) To update position titles.

3. Revision: (attach a copy of revised pages with all changes clearly marked.)

4. Recommended by: _____ 1/21/81
   Signature Date

5. Does this change effect any related Training Department Lesson Plans?

   ☐ Yes ☒ No (If YES - Identify _____)

6. Review and Approval:

   _____ 1/21/81
   Tech Review Date

   _____ 1/21/81
   Administrative Review Date

   _____ 1/23/81
   Approved Date
   Manager of Training

   _____ 7/29/81
   Approved Date
   Manager of Operations

TABLE OF CONTENTS

LIST OF EFFECTIVE PAGES

PAGE NO.	EFFECTIVE REVISION
i, ii	1
iii	Original
1	1
2-7	Original
8, 9	1
10	Original
11-17	1
A.1 through A.22	Original
B.1 through B.10	Original
C.1 through C.12	Original
D.1 through D.4	1

RECORD OF CHANGES

CHANGE NO.	DATE OF CHANGE	DATE OF CHANGE ENTRY	SIGNATURE OF PERSON ENTERING CHANGE
1	7/24/81	8/3/81	

1.0 REPLACEMENT OPERATOR TRAINING PROGRAM UNIT-1

1.0.1 PURPOSE

The purpose of Replacement Operator Training is to prepare operator candidates for licensing by providing a sound theoretical and practical background to ensure that personnel understand how and why they perform specific tasks, understand how their job impacts plant and public safety, and can correctly respond to situations that they mighr encounter during normal and abnormal situations.

1.0.2 REFERENCES

Control Room Operator	ANS. 3.1, Draft Rev. 10/80
	10CFR Part 50, Draft Rev. 5/14/80
	10CFR Part 55, Draft Rev. 5/14/80
	R.G. 1.8, Draft Rev. 9/80

1.03 DEFINITIONS

1. Candidate - An individual designated by the Supervisor of Operations as a potential reactor operator; a Category IV Control Room Operator.
2. Extra person - A candidate assigned to an operating shift for on-the-job training whose presence is not required to perform specific, non-training - related tasks.
3. Designated Task Examiner - That individual(s) assigned by the Shift Supervisor as being authorized to conduct a checkout on a specific OJT task and to certify by his signature on the OJT sheet that the task has been satisfactorily completed. The task examiner may be any individual assigned to that particular shift who the Shift Supervisor determines through experience or personal knowledge possesses requisite knowledge of the task to properly conduct the checkout.
4. Section examiner - That individual(s) assigned by the Shift Supervisor in writing as being authorized to conduct an examination on a specific section of OJT tasks and to certify by his signature on the OJT sheet

that the section has been satisfactorily completed up to the final verification. The section examiner should normally be a licensed reactor operator or senior reactor operator assigned to the same shift as the Shift Supervisor making the designation.

5. Qualified Instructor - An instructor assigned to the Operator Training Section of the Training Department or a "guest" instructor whose expertise in a specific subject area, e. g., a systems engineer, has resulted in his assignment to present material on that subject area.

1.0.4 PROGRAM DESCRIPTION

1.0.4.1 Prerequisites

All candidates for Control Room Operator shall have:

1. A High School Diploma or Equivalency.
2. At the time of licensing accumulated three years of power plant experience of which one year is at TMI-1. This one year of experience at TMI-1 must include three months of performing the duties of a licensed operator while under instruction as an extra person in the Control Room.
3. Satisfactorily completed the plant fundamentals training program unless written examination has verified that the knowledge and skill of the individual is comparable to that of individuals who have completed the training.
4. Satisfactorily completed the plant systems training program.
5. Satisfactorily met the minimum medical requirements for licensed personnel as specified in 10CFR55.

1.0.4.2 Sequence

Phase 1 Classroom Training 6 Weeks

Phase 1 OJT 12 Weeks

Phase 2 Classroom 6 Weeks

Phase 2 OJT 12 Weeks with Simulator Startup Certification (3 Weeks)

Audit Exams 2 Weeks

1.0.4.3 Objectives

The objectives of this program are to:

1. Present the wide range of advanced material necessary for an individual to obtain a Reactor Operator License including:
    1. Control Room operating experience with specific task assignments.
    2. Reactor Theory
    3. Plant design features and characteristics
    4. Reactor instrumentation and control
    5. Chemistry
    6. Radiation control and safety
    7. Fundamentals of heat transfer, thermodynamics, and fluid flow
    8. Plant transients
    9. Recognizing and mitigating core damage
    10. Simulator Training
2. Certify the competency of applicants to operate the plant safely and efficiently by satisfactory achievement of specified learning objectives, which are administratively documented.

1.0.4.4 Outline

A. On-The-Job-Training
    1. Administrative procedures
    2. Periodic surveillance
    3. Normal, abnormal and emergency operating procedures
    4. Technical Specifications
    5. Specific job related tasks

B. Systems Training (Classroom)

The primary purpose of the Systems Training is to integrate previous system knowledge with overall plant operation and operating procedures. All system lesson presentations shall include:

1. Purpose of the system and emergency function

2. A simplified diagram showing the flow path including instrumentation, interconnections, interlocks, all major components and control room operated equipment.
3. Automatic actuation signal setpoints, interlock setpoints, and the purpose and function of these signals.
4. Alarms associated with the system including the purpose, setpoint, and required operator actions.
5. Limits, precautions, Technical Specifications and where applicable, the basis per Technical Specifications or the FSAR.
6. A brief description of system operation in all modes including normal system parameters.
7. Power supplies to major components.

Systems to be Covered Include:

Nuclear Service Cooling River Water System

Nuclear Service Closed Cycle Cooling System

Intermediate Cooling System

Pressurizer and Pressure Relief System

Makeup and Purification System

High Pressure Injection System

Makeup Tank Level Control

Primary Chemistry Control

Decay Heat System

Decay Heat Closed Cycle Cooling System

Auxiliary Shutdown Panel

Core Design and Construction

Core Flood System

R. B. Spray System

Reactor Coolant System

RC Pumps and Seals

Spent Fuel Cooling System

Spent Fuel Exhaust System

OTSG's

Ventilation Systems

Failed Fuel Detection Systems

Radiation Monitoring System

Waste Gas System

Liquid and Solid Waste Systems and Release Rationale

Primary and Secondary Sampling Systems

H_2 Recombiners

Control Rod Drive System

Rod Control

Excore and Incore Nuclear Instruments

Reactor Protection System

Emergency Safeguards System and ECCS Actuation

Hotwell Level Control System

Main Vacuum and Circulating Water System

Condenser Cleaning System

Condensate System

Main Feedwater System and Flow Control System

Heater Vents and Drains System

Main Steam System

Extraction Steam System

Moisture Separators

Main Turbine and Turbine Auxiliaries

- EHC System
- Turbine Lube Oil System
- Seal Oil System

Generator Hydrogen System

Steam Seal System

Secondary Service Closed Cycle Cooling System

Auxiliary Steam System

Emergency Feedwater System

Generator and Generator Exciter

Diesel Generator and Controls

Instrument Air System

Service Air System

Screen House Equipment

Fire Protection System

Fuel Handling System and Rationale

Main Power and BOP Electrical Systems, 1E Electrical

C. Heat Transfer and Fluid Flow, Thermodynamics

Heat Transfer

Properties of fluid

Steam Tables and Their Use

Core and Plant Parameters, Normal and Transient

D. Radiation Control and Safety

Radioactivity and Radiation

Effects of Radiation

Radiation Exposure Limits

Radiation Measurement

Radiation Protection Problems

Radiation Instruments

E. Reactor Instrumentation and Control

Reactor Coolant System Instrumentation

RCS Instrument Failures

ICS and Non-Nuclear Instrumentation

ICS Transients

F. Reactor Theory

Introduction to Fission

Neutrons and Neutron Interactions

Solving Exponential Equations

Introduction to ℓ_{eff}

K_{eff} and Six Factors

Transient Effects and K_{eff}

Reactor Kinetics

Reactivity

Subcritical Multiplication

Neutron Sources

Reactor Period and Start Up Rate

Problem Solving

Reactivity Coefficients

Flux Distribution

DNB, F_Q, $F_{\Delta H}$, NDTT

Reactor Control

Fuel Assemblies and Control Rods

Transients and Effects on Fuel Assemblies and Control Rod

Fission Product Poisons

Reactor Transient Analysis

Excore Nuclear Instruments

Fission Product Gasses and Fission Products

G. General Categories

Primary Chemistry Limits and Rationale

Ion Exchangers

Secondary Chemistry Limits and Control Rationale

Facility Incidents

Emergency Plan

Security

Technical Specifications

Emergency, Abnormal and Normal Operating Procedures

Recognition and Mitigation of Consequences of Severe Core Damage

Safety Analysis

1.0.4.5 Administration

A. Program Presentation

1. On-The-Job Training

a. The On-The-Job Training Program consists of two phases of preselected tasks which involve observation and participation by the license candidate in job related activities designed to reinforce classroom study, maximize new learning experiences, and stimulate interest. Phase I is to be completed during an initial twelve week period and Phase II during a second twelve week period.

b. Primary verification of OJT tasks will be by oral checkout of the license candidate on individual task items by a task examiner, designated by the Shift Supervisor. Shift Foremen and Supervisors may sign-off any individual task.

c. A licensed operator will be designated in writing by the Shift Supervisor (using the form from Appendix D) and held responsible for providing guidance, instruction, supervision, and a second verification signature. This signature indicates that the license candidate has demonstrated a satisfactory overall knowledge of a task sheet section through oral examination.

d. Final verification will be by oral and written checkout of task sheet sections by the Shift Supervisor (or Shift Foreman if designated in writing by the Shift Supervisor, using the form from Appendix D).

e. During the OJT the license candidates will be assigned to a six shift rotation with their prospective crews. On the last day of each fourth week the Operator Training Section will administer a written quiz covering all previous material. This quiz will be administered at the Training Center or on shift. All quizzes and grades shall be maintained in the Candidates' training file. Instructors will also provide instruction, review, and counsellin as necessary.

2. Classroom Training

a. The classroom training will consist of two phases, each of six week duration, with lectures presented by qualified instructors using approved lesson plans. All portions of classroom training requiring self-study will be monitored by a qualified instructor who will be available for individual consultation.

b. The license candidate will be responsible for all material presented. If a candidate misses more than one consecutive week, the Supervisor, Licensed Operator Training will review the situation to determine if the candidate will be able to catch up with his class and make a recommendation to the Operator Training Manager and the Manager of Operations regarding continuation in the program.

3. Simulator

A three week Simulator Program will be utilized to reinforce classroo and OJT concepts and to develop an understanding of integrated plant responses. In the event of an excessively large class, the licensed candidates will be divided into groups

of suitable size for simulator operations, with rotation to the TMI-1 plant and the simulator as required.

4. Audits

Upon completion of the program there will be two weeks designated for audit exams, self-study, and any remedial training found necessary by the audit exam results.

B. Evaluation Criteria

1. On-The-Job Training

a. Comprehensive oral checkouts shall be administered by the task examiners for specific task sign-offs and documented by the examiner's signature.

b. A secondary verification of successful completion of a task sheet section will be administered by the license candidate's section examiner by an oral checkout and sign-off, using an Oral Examination Summary Sheet from Appendix D which shall be retained in the candidate's training file before a final section check out by the Shift Supervisor.

c. The ultimate responsibility for determining adequate achievement by the student rests with the Shift Supervisor who will evaluate the performance of the license candidate by section oral check out and/or written questioning, using the Oral Examination Summary Sheet from Appendix D, which shall be retained in the candidate's permanent training file.

d. During the course of the two twelve week OJT phases, licensed operator instructors from the Operator Training Section will perform periodic spot checks of the License Candidate's progress including oral questioning of the candidate on any tasks previously signed off, using the Oral Examination Summary Sheet from

Appendix D, which shall be retained in the candidate's training file. A copy will be forwarded to the Operator Training Manager and the Manager of Operations.

e. All tasks which cannot be performed are to be simulated. Performance or simulation of a task shall not alone constitute successful completion of the task. Discussion and oral questioning by the designated task, section, and final examiners must be included to substantiate successful completion of the task.

f. Individuals failing to achieve a "pass" grade on "Final Verification" check-outs shall be:

- Informed of their weak areas and given direction on the material that they should study to upgrade their performance.
- Re-examined within two weeks of the initial failure.

If an individual fails the second section check-out, the Manager of Operations and the Operator Training Manager shall review the license candidate's overall progress and performance and determine the corrective action to be taken

2. Written Examinations

Written examinations will be administered by licensed operator instructors from the Operator Training Section at the conclusion of each twelve week OJT phase and at least on a weekly basis during the classroom phase. Questions shall cover that material presented in the classroom, specified for self study, and identified on the task sheets.

A passing grade of 70% is mandatory for all written examinations. A grade of less than 70% will require candidate counselling by the instructor administering the exam informing the candidate of weak areas and suggested

corrective actions that will upgrade the individual's performance. A re-exam will be administered within two weeks. If an individual fails the second exam the Manager of Operations and the Operator Training Manager will evaluate the license candidate's performance and decide on the corrective action to be taken.

3. Simulator Examination

All license candidates are required to successfully pass a startup certification examination at a simulator.

4. Final Examination

A comprehensive written and oral examination will be administered by the Operator Training Section at the conclusion of the training program. An 80% overall average and a 70% on individual sections is required for the satisfactory completion of the written phase. The oral examination will normally consist of two phases; a "walk through" phase, administered by a licensed operator instructor designated by the Supervisor, Licensed Operator Training, and a "board" composed of licensed operator instructors designated by the Supervisor, Licensed Operator Training and the Manager of Operations or his designated representative. A "pass" grade is required for the oral exam substantiated by documentation with Oral Examination Summary Sheets from Appendix D. Upon completion of these exams, the license candidate's training files and Training Department recommendations will be forwarded to the Director of Unit 1 who will approve the candidates for NRC examination or, in the case of unsatisfactory completion of the program, decide on the corrective action to be taken.

1.0.4.6 Responsibilities

A. The Shift Supervisor is responsible for the following:

- Selection and assignment of a licensed operator to each license candidate.
- Assignment of individuals as designated task examiners.
- Designation of his Shift Foreman as the OJT final examiner (if applicable).
- Verifying an adequate level of achievement and progress by the license candidates on the OJT phase of the program.

B. The Supervisor, Licensed Operator Training is responsible for the following:

- General supervision of the development and conduct of the Replacement Operator Training Program
- Approval of the development, coordination, scheduling and administration of the Replacement Operator Training Program, including course outlines, lesson plans, student handouts, simulator training, and evaluation exams.
- Scheduling classes, students, classroom, and facilities necessary to conduct the training program.
- Interfacing with Operations Department in all matters impacting the training programs.
- Assuring that the program content is updated and revised to meet current requirements and supervising revision of the program content, descriptions, lesson plans, test, and exams.
- Evaluation of course instruction and license candidate progress to determine the effectiveness of the training program and reporting these evaluations to the Operator Training Manager.

- Monitoring and conducting spot checks on the quality of OJT.
- Maintaining the necessary records and reports of training.
- Developing and conducting oral exams.
- Evaluation of candidate critiques of the training received.

C. The Operator Training Manager is responsible for the following:

- Assuring the quality of the Replacement Operator Training Program by written approval of materials including course outline, lesson plans, student handouts, simulator training, outlines, technical content of quizzes and exams and their compatibility with the Replacement Operator Training Program.
- Auditing completion of qualification records and reporting results to the Manager of Training and the Operations & Maintenance Director Uni

1.0.4.7 Records and Reports

1. A Training Program Administrative form shall be completed and submitted to the Administrative Section for each classroom lecture or lesson by the instructor who presented the material.
2. Current and past schedules, lesson plans, student handouts, completed OJT task sheets, completed Oral Examination Summary Sheets, exam keys, and completed exams and quizzes both written and oral, as well as any additional pertinent qualification records shall be maintained on file in the Training Department.
3. A copy of the Candidate Progress Report from Appendix D shall be initiated on each candidate and updated as follows:
   a. Following each weekly quiz during the classroom phases.
   b. Following each 4-week quiz during the OJT phases.
   c. Following the written examination at the end of each OJT phase.
   d. Following the completion of simulator training.
   e. Following the final examination.

The Candidate Progress Report shall be maintained at the training center. Copies of the updated report shall be submitted by the Supervisor, Licensed Operator Training to the Manager of Training and the Manager of Operations via the Operator Training Manager at the completion of each phase of classroom and OJT, or more frequently on a case basis if requested by any of the reviewing individuals.

1.0.4.8 Evaluation

1. At the conclusion of each of the four phases of training the license candidates will be asked to complete a training critique form to assist in program evaluation. The completed critiques will be reviewed by the Supervisor, Licensed Operator Training and forwarded, along with recommendations or corrective action taken to the Manager, Training via the Operator Training Manager.
2. The Replacement Operator Training Program and its contents will be reviewed and updated at the end of each program presentation by the instructors presenting the course and the Supervisor, Licensed Operator Training. He will report the results of this review, along with recommendations or corrective action taken to the Manager of Training via the Operator Training Manager. During the presentation of the course no changes in course content shall be made without prior approval of the Operator Training Manager.
3. Annually an internal team will be formed by the Supervisor, Licensed Operator Training to review the Replacement Operator Training Program. The review team will consist of instructors from the Operator Training Section and be headed by a licensed Senior Reactor Operator.

The team will assess the adequacy of the program for:

- Meeting new requirements
- Adequacy of records
- Quality of material and presentations
- Effectiveness

In conducting the review, the team may use any records maintained by the Training or Operations Departments to assist them in conducting the review. They may include:

- NRC Inspection
- QA Audits
- [illegible] Audits
- Regulatory Changes
- Industry Experiences
- License Candidate Critiques

The review team will report the results to the Manager of Training and the Manager of Operations via the Supervisor, Licensed Operator Training and the Operator Training Manager.

1.0.4.9 Changes and Lesson Plan Corrections

The program shall be maintained to reflect the following:

- Changes in regulatory requirements
- Changes in applicable codes, standards and guides
- Significant experiences at the facility
- Significant experience throughout the industry
- Remedial action recommended by review/audit findings.
- Regularly scheduled participant critiques.

Changes will be incorporated per TD 1105 "Training Department Training Programs Development/Revision Guide"

1.0.4.10 Program Scheduling

The program will normally be scheduled on a semi-annual basis to follow the applicable sections of the Auxiliary Operator Program.

1.0.4.11 Program Approval

- The Director of Unit 1, through the Operations and Maintenance Director and Manager of Operations, certifies the candidate's readiness for the licensing examination. The Manager of Operations retains the responsibility to ensure that the overall level of training of plant operators is satisfactory through the approval of program content, schedules, and administrative procedures.
- The Manager of Training through the Operator Training Manager, is responsible to insure the training program is developed to meet the requirements established by the Director of Unit 1 through the Manager of Operations and that proper records and documentation are provided and maintained.
- Lesson plans for implementation of the training program will be reviewed by the Supervisor, Licensed Operator Training and approved by the Operator Training Manager.

APPENDIX A

OJT - PHASE 1

Name _____ Date Started _____

	Date	Designated Task Examiner
1.0 Read and discuss the following Administrative Procedures: (one per week for eight (8) weeks indicates satisfactory progress)		
Week 1 1.01 Document Control 1001		
Week 2 1.02 Tagging 1002		
Week 3 1.03 Radiation Protection Manual 1003		
Week 4 1.04 Station Organization and Chain of Command 1009		
Week 5 1.05 Technical Specifications Surveillance Program 1010		
Week 6 1.06 Shift Relief and Log Entries 1012		
Week 7 1.07 Bypass and Safety Functions and Jumper Control 1013		
Week 8 1.08 Operator at the Controls 1028		

SECOND VERIFICATION _____

Section Examiner/Date

FINAL VERIFICATION _____

Shift Supervisor/Date

Name _____ Date Started _____

		Date	Designated Task Examiner
2.0	Perform and Discuss the following surveillance items from the Control Room and, where applicable, from the plant: (One per week for ten (10) weeks indicates satisfactory progress).		
Week 1	2.01 RCS Leakage 1303-1.1		
Week 2	2.02 Radiation Monitoring Check 1303-4.15		
Week 3	2.03 Emergency Power 1303-4.16		
Week 4	2.04 Weekly Surveillance Checks 1301-4.1		
Week 5	2.05 Shift and Daily Checks 1301-1.0		
Week 6	2.06 Control Rod Movement 1303-3.1		
Week 7	2.07 Incore Neutron Detectors 1301-5.3		
Week 8	2.08 Emergency Safeguards Checklist		
Week 9 & 10	2.09 Turbine Trip Test 1106-1.0 (Two Weeks)		
Week 11 & 12	2.10 Engineered Safeguards Actuation (Two Weeks)		

SECOND VERIFICATION _____
Section Examiner/Date

FINAL VERIFICATION _____
Shift Supervisor/Date

Name _____ Date Started _____

				Date	Designated Task Examiner
3.0	Walk through the following Ventilation System Operating Procedures. (One per week for twelve (12) weeks indicates satisfactory progress)				
Week 1	3.01	1104-14A	Steam Gen Compartment System		
Week 2	3.02	1104-14B	Operating Floor Ventilation System		
Week 3	3.03	1104-14C	Reactor Compartment System		
Week 4	3.04	1104-14D	RB Recirculation System		
Week 5	3.05	1104-14E	Industrial Cooler System		
Week 6	3.06	1104-15A	Aux & Fuel Handling Bldg, Supply & Exhaust System		
Week 7	3.07	1104-15B	Spent Fuel Pump Area		
Week 8	3.08	1104-15C	Nuclear Service Closed Cooling & Decay Heat Pump		
Week 9	3.09	1104-16	Penetration Cooling System		
Week 10	3.10	1104-15	Control Building Ventilation System		
Week 11	3.11	1104-24H	Intermediate Bldg. (Inc. Emer FW Pump Area)		
Week 12	3.12	1104-24M	Diesel Generator Bldg.		

SECOND VERIFICATION _____
Section Examiner/Date

FINAL VERIFICATION _____
Shift Supervisor/Date

Name _____ Date Started _____

	Date	Designated Task Examiner
4.0 Assist in the startup of the following Secondary Systems from the Control Room and where applicable, from the plant: (Completion of this Section in two (2) weeks indicates satisfactory progress). (Weeks 1 and 2)		
4.01 Condensate and Feedwater		
4.02 Emergency Feedwater		
4.03 Steam Seals		
4.04 Turbine Lube Oil System		
4.05 Generator Hydrogen and Seal Oil Systems		

SECOND VERIFICATION _____
Section Examiner/Date

FINAL VERIFICATION _____
Shift Supervisor/Date

Name	Date Started		Date	Designated Task Examiner
5.0	Under the direction of the Operator at the Controls perform the following: (Completion of this Section in two (2) weeks indicates satisfactory progress) (Weeks 3 and 4)			
	5.01 Make Entries and Maintain the Control Room Log			
	5.02 Monitor Control Room Indicators and Charts (stamp, date, and change charts)			
	5.03 Acknowledge and Initiate Action for Alarm Conditions			
	5.04 Initiate, Make, and Complete a RB Purge			
	5.05 Evaluate and Follow-up RMS Alarms			
	5.06 Initiate, Make, and Complete the Release of a Waste Gas Decay Tank			
	5.07 Initiate, Make, and Complete a Liquid Waste Release			
	5.08 Makeup to the CFT's (N_2 and Water)			
	5.09 Understand the Procedure for Operating Switchyard Breakers			
	5.10 Instruct AO's in the Performance of Their Tasks			
	5.11 Operate the Loose Parts Monitoring Equipment			
	5.12 Conduct 3 Shift Turnovers	1		
		2		
		3		
	5.13 Operate the Aux S/D Panel/Patch Panel			
	5.14 Perform Switching and Tagging Operations (Inplant and Switchyard)			

SECOND VERIFICATION

Section Examiner/Date

FINAL VERIFICATION

Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner
6.0 Assist in the startup of the following secondary/systems: (Completion of this section in two (2) weeks indicates satisfactory progress) (Weeks 5 and 6)			
6.01 EHC System			
6.02 Condenser Vacuum System			
6.03 Auxiliary Steam System			
6.04 Circulating Water System (include de-icing)			
6.05 Mechanical Draft Cooling Tower (include temperature control and de-icing)			
6.06 Amertap Tube Cleaning System			

SECOND VERIFICATION ~~Section Examiner/Date~~

FINAL VERIFICATION ~~Shift Supervisor/Date~~

Name	Date Started	Date	Designated Task Examiner
7.0 Be able to use the computer for: (Completion of this Section in two (2) weeks indicates satisfactory progress) (Weeks 7 and 8)			
7.01 Leakage Calculations			
7.02 Saxon Program Access			
7.03 Changing Trend Recorder Points			
7.04 Finding Alarm Limits			
7.05 Display and Printout of Various Groups			
7.06 Operator Trend Groups			
7.1 Under the direction of the Chemistry Department:			
7.1.1 Draw and Analyze a Primary Sample			
7.1.2 Draw and Analyze a Secondary Sample			

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name _____ Date Started _____

	Date	Designated Task Examiner
8.0 Demonstrate the ability to: (Completion of this Section in Two (2) weeks indicates satisfactory progress) (Weeks 9 and 10).		
8.01 Point out and Describe Components And the Electrical Flowpath in the Switchyard and Relay House. (Include Operations).		
8.02 Point out and describe components and the Electrical Flowpath from the Main Transformer Through 6900 volt and 4160 volt Busses and 480V Distribution. (Include interlocks and Operation).		

SECOND VERIFICATION _____
Section Examiner/Date

FINAN VERIFICATION _____
Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner
9.0 Demonstrate the ability to: (Completion of this Section in two weeks indicates satisfactory progress). (Weeks 11 and 12)			
9.01 Point out and describe components and the Electrical Flowpath in the 120 VAC vital distribution system. Be able to discuss interlocks and operation. (Include placing an inverter in service).			
9.02 Point out and describe components and the Electrical Flowpath in the 125/250 VDC distribution system. Be able to discuss interlocks and operation (include placing a charger in service).			

SECOND VERIFICATION _____ Section Examiner/ Date

FINAL VERIFICATION _____ Shift Supervisor/ Date

Name | Date Started | Date | Designated Task Examiner

10.0 Walk through and discuss all Emergency and Abnormal Procedures;

Section 1

10.01 Reactor Trip 1202-4
10.02 Turbine Trip 1202-3
10.03 Loss of RC flow/RCP trip 1202-14
10.04 Loss of Reactor Coolant Makeup 1203-15
10.05 CRD Equipment Failures 1202-8

1. Find all indications mentioned.

2. Locate all items used to verify that automatic actions have occurred.

3. Locate all controls necessary to perform all immediate manual and subsequent actions.

4. Insure you can walk through all emergency and abnormal procedures and note indicators, check automatic actions, and simulate performing manual actions from memory.

NOTE: Satisfactory completion of this Section indicates adequate progress for a full four (4) week rotation. (Weeks 1 through 4)

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date	Date	Designated Task Examiner
11.0 Walk through and discuss all Emergency and Abnormal Procedure:			
Section 2			
11.01 Loss of RC/RC pressure 1202-6A, B, C			
11.02 Pressurizer Failure 1202-29			
11.03 Loss of Feed to OTSG 1202-26 A, B			
11.04 Load Rejection 1203-1			
11.05 High Cation Conductivity in Condensate 1203-5			
1. Find all indications mentioned.			
2. Locate all items used to verify that automatic actions have occurred.			
3. Locate all controls necessary to perform all immediate manual and subsequent actions.			
4. Insure you can walk through all emergency and abnormal procedures and note indicators, check automatic actions, and simulate performing manual actions <u>from memory</u>.			
<u>NOTE</u>: Satisfactory completion of this Section indicates adequate progress for a full four (4) week rotation. (Weeks 4 through 8)			

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner

12.0 Walk through and discuss all Emergency and Abnormal Procedures:

Section 3

12.01	Loss of Decay Heat Removal 1202-35		
12.02	SSCC System Failure 1203-21		
12.03	Control Room HVAC 1203-34		
12.04	Vibration and Loose Parts 1203-40		
12.05	River Water Failure 1203-19		
12.06	NSCC System Failure 1203-20		
12.07	RC Pump and Motor Malfunctions 1203-16		

1. Find all indications mentioned.

2. Locate all items used to verify that automatic actions have occurred.

3. Locate all controls necessary to perform all immediate manual and subsequent actions.

4. Insure you can walk through all Emergency and Abnormal Procedures and note indicators, check automatic actions, and simulate performing manual actions <u>from memory</u>.

<u>NOTE</u>: Satisfactory completion of this Section indicates adequate progress for a full four (4) week rotation. (Weeks 8 through 12)

SECOND VERIFICATION _____
Section Examiner/Date

FINAL VERIFICATION _____
Shift Supervisor / Date

Name _____ Date Started _____

	Designated Task Examiner Date	Designated Task Examiner
1.0 Under the direction of the operator at the controls, perform or simulate the following: (Completion of this Section in Two (2) Weeks indicates satisfactory progress). (Weeks 1 and 2)		
1.01 Be able to use Steam Table Parameters and Plant Parameters - Plot a secondary heat balance.		
1.02 Walk through the process for transferring vital power busses from normal to backup power supply.		
1.03 Perform an RCS Boration and Calculation.		
1.04 Perform an RCS Boron Dilution.		
1.05 Perform an RCS deboration.		
1.06 Perform RCS Boron change for all rods out Power Reduction to 50% (with Xe).		
1.07 Operate the ICS controls in hand.		
1.08 Make entries and maintain the Control Room Log.		
1.09 Monitor Control Room indicators and charts (stamp, date, and change charts).		
1.10 Acknowledge and initiate action for alarm conditions.		
1.11 Initiate, make and complete a RB purge, including Kidney Filter Operation.		
1.12 Evaluate and follow up RMS Alarms.		
1.13 Operate and evaluate seismic instrumentation.		

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name _____ Date Started _____

	Date	Designated Task Examiner
2.0 Under the direction of the operator at the controls perform or simulate the following: (Completion of this Section in two (2) weeks indicates satisfactory progress). (Weeks 3 and 4)		
2.01 Reset Reactor Protective Channels after a trip.		
2.02 Change inputs to the Power Range Recorder.		
2.03 Change inputs for the controlling RCS Pressure Signal.		
2.04 Change inputs for the controlling RC Flow Signal.		
2.05 Select the controlling TC's for the RC pump interlocks		
2.06 Determine the status of RC pump interlocks.		
2.07 Locate and operate the following switches associated with the Control Rod Drive System:		
2.0.7.1 Safety Rods out bypass		
2.0.7.2 Group 7 outlimit bypass		
2.0.7.3 Boron dilute bypass		
2.08 Reset an Engineered Safeguards Channel after a trip.		
2.09 Determine the cause of a turbine trip.		
2.10 Determine which relay caused a Generator trip from the relay target.		
2.11 Point out and describe all meters, switches, and modules in the RPS Cabinets.		
2.12 Point out and describe all meters, switches, and modules in the E.S. cabinets.		
2.13 Point out and describe all meters, switches and modules in the ICS/NNI cabinets.		
2.14 Point out and describe the components in the CRD cabinets.		
2.15 Walk through your response to Fire Alarm Annunciators.		
2.16 Point out and describe all Console ICS instrumentation input switches, indicators, and recorders.		

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner
3.0 Under the direction of the operator at the controls perform or simulate the following: (Completion of this Section in two (2) weeks indicates satisfactory progress: (Weeks 5 and 6)			
3.01 Establish conditions necessary to run reactor coolant pumps (Start and Stop RCP's)			
3.02 Operate the Electrical System (Startup and Secure a diesel operator, place in ES Standby).			
3.03 Assist in recognizing and taking action for out of spec chemistry (primary and secondary).			
3.04 Startup and place a feedwater pump in service.			
3.05 Place heater drain pumps in service.			
3.06 Monitor and calculate quadrant power tilt 1203-7.			
3.07 Monitor and calculate core imbalance 1203-7.			
3.08 Place the main turbine on the line and place in Auto. (include warmup).			

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner

4.0 Walk through the following Operating Procedures: (Completion of this Section in two (2) weeks indicates satisfactory progress). (Weeks 5 and 6)

4.01 Normal Electrical System 1107-1

4.02 Emergency Electrical System 1107-2

4.03 Diesel Generator 1107-3

4.04 Component Electrical System 1107-4/S

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner
5.0 Perform Reactivity Balance Calculations for all cases listed in the procedure: (Completion of this Section in two (2) weeks indicates satisfactory progress). (Weeks 7 and 8) (You must know where to find all the information needed.			
5.01 Shutdown and Operating Reactivity Balance 1103-15			
5.02 Boron change Reactivity Balance 1103-15			
5.03 Shutdown Margin Calculation 1103-15			
5.04 Xenon Power Block 1103-15			

SECOND VERIFICATION _____
Section Examiner/Date

FINAL VERIFICATION _____
Shift Supervisor/Date

Name	Date Started		Designated Task Examiner
		Date	

6.0 Walk through and become intimately familiar with the Operating Procedures specified in the operating procedure study guides: (Completion of this Section in two (2) weeks indicates satisfactory progress). (Weeks 7 and 8)

6.01	Soluble Poison Concentration Control 1103-4		
6.02	Pressurizer Operation 1103-5		
6.03	Plant startup 1102-2 and 1103-8		
6.04	Plant Shutdown 1102-10		
6.05	Plant Cooldown 1102-11		
6.06	Operation at Power 1102-4		
6.07	RCS fill and vent 1103-2		
6.08	Draining and N_2 Blanketing of RC System 1103-11		
6.09	Plant heatup to 525°F 1102-1		

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Designated Task Date	Designated Task Examiner

7.0 Walk through and discuss all Emergency and Abnormal Procedures;

Section 4

7.01 Unanticipated Criticality 1203-10
7.02 Steam Supply System Rupture 1203-23
7.03 OTSG Tube Rupture 1202-5
7.04 Loss of Intermediate Cooling 1202-17
7.05 Inadequate Core Cooling 1202-39

1. Find all indications mentioned.

2. Locate all items used to verify that automatic actions have occurred.

3. Locate all controls necessary to perform all immediate manual and subsequent actions.

4. Insure you can walk through all Emergency and Abnormal Procedures and note indicators, check automatic actions, and simulate performing manual actions <u>from memory</u>.

<u>NOTE</u>: Satisfactory completion of a section indicates adequate progress for a full four (4) week rotation. (Weeks 1 through 4)

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Date	Designated Task Examiner

8.0 Walk through and discuss all Emergency and Abnormal Procedures:

Section 5

8.01 Loss of Instrument Air 1202-36
8.02 Cooldown Outside the Control Room 1202-37
8.03 Inadvertent Closure of Main Steam Isolation Valve 1202-42
8.04 High Activity in Reactor Coolant 1202-11
8.05 Excessive Radiation Levels 1202-12

1. Find all indications mentioned

2. Locate all items used to verify that automatic actions have occurred.

3. Locate all controls necessary to perform all immediate manual and subsequent actions.

4. Insure you can walk through all Emergency and Abnormal Procedure and note indicators, check automatic actions, and simulate performing manual actions from memory.

NOTE: Satisfactory completion of a section indicates adequate progress for a full four (4) week rotation. (Weeks 5 through 8)

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name _____ Date Started _____

Date	Designated Task Examiner

9.0 Walk through and discuss all Emergency and Abnormal Procedures:

Section 6

9.01 Plant Response to Penetration of Protected Area 1202-13

9.02 Blackout 1202-2,2A
9.03 Fire 1202-31
9.04 Flood 1202-32
9.05 Earthquake 1202-30
9.06 Low System (grid) voltage 1203-41

1. Find all indications mentioned.

2. Locate all items used to verify that automatic actions have occurred.

3. Locate all controls necessary to perform all immediate manual and subsequent actions.

4. Insure you can walk through all Emergency and Abnormal Procedures and note indicators, check automatic actions, and simulate performing manual actions from memory.

NOTE: This Section to be completed by the end of Week 9.

SECOND VERIFICATION _____ Section Examiner/Date

FINAL VERIFICATION _____ Shift Supervisor/Date

Name	Date Started	Designated Task	
		Date	Examiner

The trainee during his on the job training phase will perform at least five (5) Reactivity Changes as described below, with no more than four (4) being any combination of Items b, d, and e. Reactivity changes will be documented on this sheet. (May be completed at a simulator)

a) Critical approach from subcritical on source range instrumentation to critical at the point of adding heat on the intermediate range instrumentation.

a) 1.		
2.		
3.		
4.		
5.		

b) Any power level change (increase or decrease) of 10 percent of rated power or greater with control rods in manual.

b) 1.		
2.		
3.		
4.		

c) Reactor shutdown from critical at 15 percent of rated power to subcritical shutdown on source range instrumentation.

c) 1.		
2.		
3.		
4.		
5.		

d) Boration or deboration during critical operation.

d) 1.		
2.		
3.		
4.		

e) Operation of refueling bridge to change core geometry during refueling.

e) 1.		
2.		
3.		
4.		

SOLUBLE POISON CONCENTRATION CONTROL (1103-4)

A. References: Technical Specifications
Plant Operating Procedure 1103-4
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the reason for each step in the Limits and Precautions.
2. Be able to discuss the various methods available for boration.
3 Be able to discuss the various methods available for deboration.
4. Be able to recognize and explain the steps which are required by Technical Specifications.
5. Utilizing the appropriate section of the procedure and given representative values, be able to calculate the following:

    a) Fill RCS using Demin. Water (Enc. 1.1)
    b) Fill RCS using Borated Water from BAMT and Demin Water (Enc. 1.2).
    c) Fill RCS using Borated Water from BAMT and RCBT (Enc. 1.3).
    d) Feed and bleed using D.W. (Enc. II).
    e) Feed and bleed using concentrated BA or Debor. Demin. (Enc. III).
    f) Batch feed to RCS- Normal Makeup (Enc. IV).
    g) Cooldown Makeup - No Xenon (Enc. V).
    h) RCS makeup when Xenon present after shutdown (Enc. VI).
    i) Batch feed to RCS - Normal Makeup (Final concentration calculation) (Enc. VII).

FILLING AND VENTING REACTOR COOLANT SYSTEM 1103-2

A. References: Technical Specifications
Plant Operating Procedure 1103-2
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the purpose of the Filling and Venting Procedure.
2. Be able to discuss the sources and use of nitrogen when Filling and Venting
3. Be able to discuss in detail the procedure for venting CRDM's (include precautions).
4. Be able to discuss the requirements associated with Boric Acid Concentrations and RC System flow.
5. Be able to discuss the requirements associated with incore instrumentation
6. Be able to discuss the requirements for Boric Acid inventory and the various sources of B.A.
7. Be able to discuss the fill water quality requirements.
8. Be able to discuss Reactor Coolant Pump and Seal Operation during Filling and Venting.
9. Be able to discuss the limits and precautions associated with filling and venting.

PRESSURIZER OPERATION 1103-S

A. References: Technical Specifications
Plant Operating Procedure 1103-5
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the limits and precautions associated with this procedure and the purpose for each limit.
2. Be able to describe the procedure for drawing a bubble in the pressurizer.
3. Be able to list the various automatic system responses to pressure changes. (3125 psig to ambient).
4. Be able to list the various pressurizer level plateaus and controls.
5. Be able to discuss pressurizer level instrument compensation.
6. Be able to discuss solid plant operations.

PLANT HEATUP TO 525°F (1102-1)

A. References: Technical Specifications
Plant Operating Procedure 1102-1
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the preheatup checklist and the refueling startup surveillance test checkoff.
2. Be able to explain the reason for each step in the checklist and recognize which steps are required by Technical Specifications.
3. Be able to discuss the reason for the "setpoints" that are specified in the procedure.
4. Be able to discuss the implications and corrective action necessary if a limiting condition for operation is not met.
5. Discuss the procedure for changing the order of the steps in a procedure.
6. Discuss the methods used to achieve plant heatup.
7. Discuss the reason for drawing a vacuum during heatup.
8. Discuss the RC pressure vs. RC temperature curves pertaining to plant heatup.
9. Discuss plant heatup rates in the procedure and in Tech. Specs. and the reasons.
10. What effect on the plant does shutdown bypass have?
11. Discuss the procedure for coming out of S.D. bypass.
12. Discuss RC pump operation (i.e., pressure, temperature, interlocks, etc.).
13. Discuss plant chemistry requirements.
14. Discuss Nuclear Instrumentation response during heatup and core void formation.

A. References: Technical Specifications
Plant Operating Procedure 1103-8
1102-2
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the Plant Precritical Checklist.
2. Be able to discuss the plant maneuvering limits for this phase of plant operation.
3. Be able to explain the reason for each step in the checklist and recognize which steps are required by Technical Specifications.
4. Be able to discuss the reason for the "setpoints" specified in the procedure.
5. Discuss Nuclear Instrumentation Response during startup.
6. How is the Reactor determined to be critical?
7. Why is critical data taken at 10^{-8} amps?
8. How do you determine the actual critical rod position is within the tolerance of the ECP requirements?
9. How do we insure adequate Nuclear Instrumentation Accuracy?
10. Be able to discuss Turbine Generator Startup.
11. Be able to discuss Generator paralleling to the grid.
12. Be able to discuss the procedure for placing ICS in Auto.
13. Be able to explain the purpose of the Turbine bypass valves during Unit startup.
14. Be familiar with the values of indications during startup operation (i.e., FW temp, MS pressure, etc.).
15. Be able to explain the rod insertion limits.
16. Be able to sketch the following curves (0-100% FP)
    a) Steam temperature vs. Reactor Power
    b) OTSG level vs Reactor Power
    c) Pressurizer level vs Reactor Power
    d) T_h, T_c, T_{ave} vs Reactor Power
17. Be able to discuss the responsibilities of the Control Room Operator.
18. Be able to maintain the proper logs and records.
19. Discuss the causes and setpoints that result in a Reactor trip.
20. Who can authorize a restart following a reactor trip?
21. What are the criteria for restart following a reactor trip?
22. Be able to list the major steps and their sequence in a plant startup.

OPERATION AT POWER 1102-4

A. References: Technical Specifications
Plant Operating Procedure 1102-4
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be familiar with the values of indications during power operation (i.e., FW temp. MS press. etc.)
2. Be able to explain the power vs. rod position curves.
3. Be able to explain the reason for the "setpoints" specified in the procedure.
4. Be able to discuss the responsibilities of the Control Room Operator during normal and abnormal operations, i.e., failure of a system to function as required, Limiting Condition for Operation not met.
5. Be able to discuss the following curves:

   a) Control and insertion limits
   b) APSR position limits
   c) Imbalance limits

6. Be able to explain how APSR's are used for control and why.
7. Be able to discuss the records, logs, and periodic operation required during power operation.
8. Be able to discuss plant maneuvering limits.
9. Be able to discuss plant response and operator response to steady state and transient conditions (include Xe in this discussion).
10. Be able to discuss operation at power with only one main feed pump including limits, changes in plant variables, and the steps to be followed to accomplish single pump operation and a return to two pump operation.

b) OTSG level vs Reactor Power
c) Pressurizer level vs Reactor Power
d) T_h, T_c, T_{ave} vs Reactor Power

17. Be able to discuss the responsibilities of the Control Room Operator.
18. Be able to maintain the proper logs and records.
19. Discuss the causes and setpoints that result in a Reactor trip.
20. Who can authorize a restart following a reactor trip?
21. What are the criteria for restart following a reactor trip?
22. Be able to list the major steps and their sequence in a plant startup.

PLANT SHUTDOWN 1102-10

A. References: Technical Specifications
Plant Operating Procedure 1102-10
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the limits and precautions associated with this procedure and the purpose for each limit.
2. Be able to outline the major steps and their sequence in a plant shutdown.
3. Be able to discuss control room indications during shutdown from 15% power to hot shutdown.
4. Be able to discuss the requirements concerning rate of shutdown.
5. Be able to discuss the purpose and flowpath for pressurizer degassification.

PLANT COOLDOWN (1102-11)

A. References: Technical Specifications
Plant Operating Procedure 1102-11
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the purpose of this proceudr.
2. Be able to discuss the limits and precautions associated with this procedure and the purpose for each limit.
3. Be able to list the major steps and their sequence in a plant cooldown.
4. Be able to discuss the various methods used to cooldown the plant.
5. Be able to discuss control room indications of a cold shutdown condition.
6. Be able to discuss the pressure vs. temperature curves for plant heatup and cooldown.

DRAINING AND N_2 BLANKETING OF RC SYSTEM 1103-11

A. References: Technical Specifications
Plant Operating Procedure 1103-11
Plant Limits and Precautions 1101-1

B. Study Guide:

1. Be able to discuss the purpose of the procedure.
2. Be able to discuss the limits and precautions associated with draining and N_2 blanketing.
3. Be able to discuss the various methods of draining the RCS.
4. Be able to discuss how adequate insurance of core coverage and cooling is maintained.
5. Be able to discuss the various methods for determining level in the Reactor Core.
6. Be able to discuss the RCS Inventory Storage Requirements.

APPENDIX C

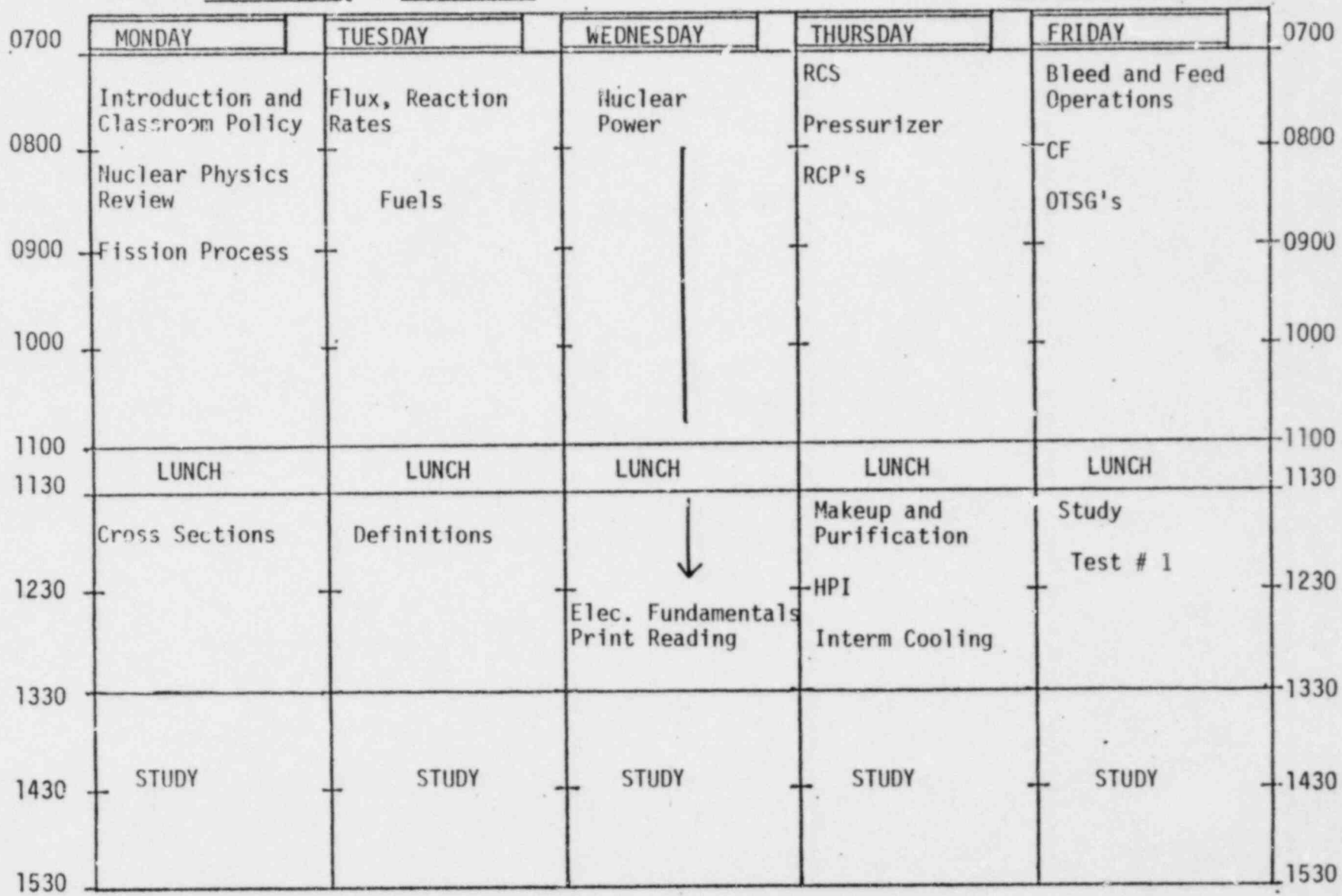
TYPICAL CLASSROOM SCHEDULE

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week



GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700	DH System LPI, RB Spray	Nuc. Serv. Closed	Ventillation Systems Control Bldg. Ven	Penetration Pressurization	ESAS	0700
0800	DH CC Cooling		Ventillation RB Purge H_2 Purge	Waste Gas System	ECCS Composite	0800
0900			Aux Bldg. Venti. H_2 Recomb.			0900
1000						1000
1100	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1100
1130						1130
1230	Spent Fuel Cooling System FH Bldg. Vent. RB Cooling Units	Core Design and Construction		Liquid Waste and Evaps.	Study Test #2	1230
1330	Study	Study	Study	Study	Study	1330
1430						1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week 3

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700						0700
	Control Rod Drive System	RPS (Cont)	Condensate and Hotwell Level	Heater Vents and Drains	Turbine and Turbine Aux.	
0800						0800
	Rod Control	Main Vacuum and Circ. Water Syst.	Main Feedwater System	Main Steam	EHC Turb. Oil Seal Oil Gen, Hz Steam Seals Stator Cooling	
0900				Extraction Steam		0900
	Excore/Incore NI's					
1000						1000
1100						1100
1130	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1130
	Reactor Protection	Condenser Cleaning	Feedwater Flow Control	Moisture Separators	Study Test #3	
1230						1230
				Main Turbine		
1330						1330
	Study	Study	Study	Study	Study	
1430						1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700	Secondary Closed	Gen. & Gen Exciter	Screen House Equipment	1E Electrical 120V AC/DC Vital	Primary/Secondary Sampling	0700
0800	Aux Steam and Boilers	Diesel and Control	Fire Protection	Chemistry and Ion Exchangers		0800
0900			Fuel Handling			0900
1000						1000
1100						1100
1130	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1130
1230	Emergency Feedwater H_2 and N_2 Systems	Instrument and Service Air	Main Power & BOP 1E Electrical to to 480 V	Aux Shutdown Panel	Study Test #4	1230
1330						1330
1430	Study	Study	Study	Study	Study	1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700						0700
	RCS Instruments NNI's	RCS Instruments NNI's	Introduction to ICS	ICS	ICS	
0800						0800
0900						0900
1000						1000
1100						1100
1130	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1130
		Introduction to			Study	
1230		ICS	ICS	ICS	Test #5	1230
1330						1330
	STUDY	STUDY	STUDY	STUDY	STUDY	
1430						1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 1 Week

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700						0700
0800	Radioactivity and Radiation	Radiation Limits	R.P. Problem Solving	Installed Radiation Measurement	Review Security Training (SP 1005.9) OJT Policy	0800
0900						0900
1000						1000
1100						1100
1130	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1130
1230	Effects of Radiation	Radiation Measure	Radiation Instruments	Liquid and Gaseous Waste Rationale $\left(\frac{X}{Q}\right)$ Envir. Tech Specs	Study Test #6	1230
1330						1330
1430	Study	Study	Study	Study	Study	1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 2 Week

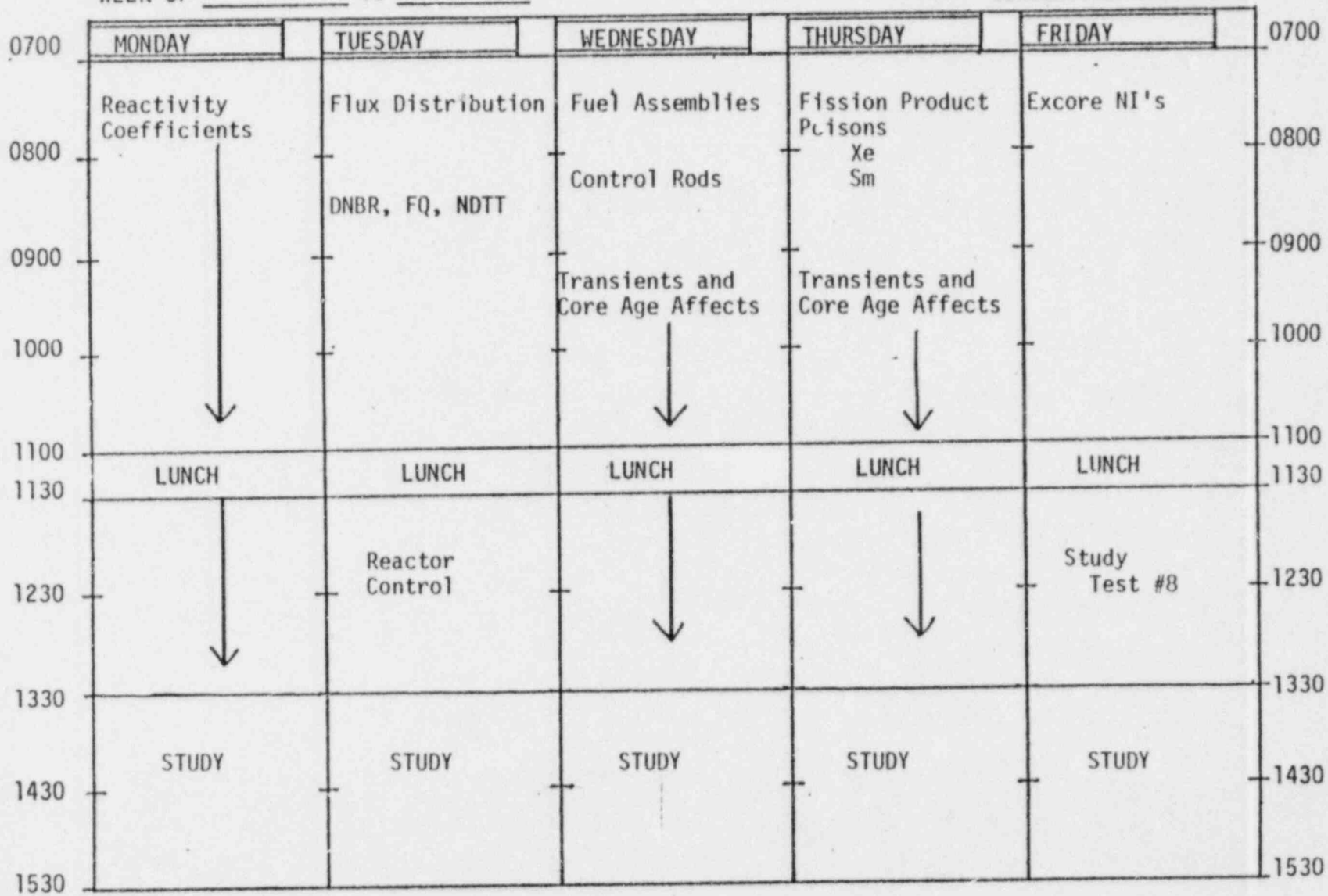
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
0700	Reactor Theory	Introduction to Keff-6 Factor Formula	Reactor Kinetics	Subcritical Multiplication	Problem Solving	0700
0800	Introduction to Fission		Kinetics Equations ↓			0800
0900	Neutrons & Neutron Interactions	Calculations of Keff		Neutron Sources		0900
1000	Rates of Nuclear Reactions					1000
1100						1100
1130	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	1130
1230	Solving Exponential Equations	Keff-6 Factors Transients	↓	Period (T) and Startup Rate Problem Solving	Study Test #7	1230
1330						1330
1430	STUDY	STUDY	STUDY	STUDY	STUDY	1430
1530						1530

GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 2 Week

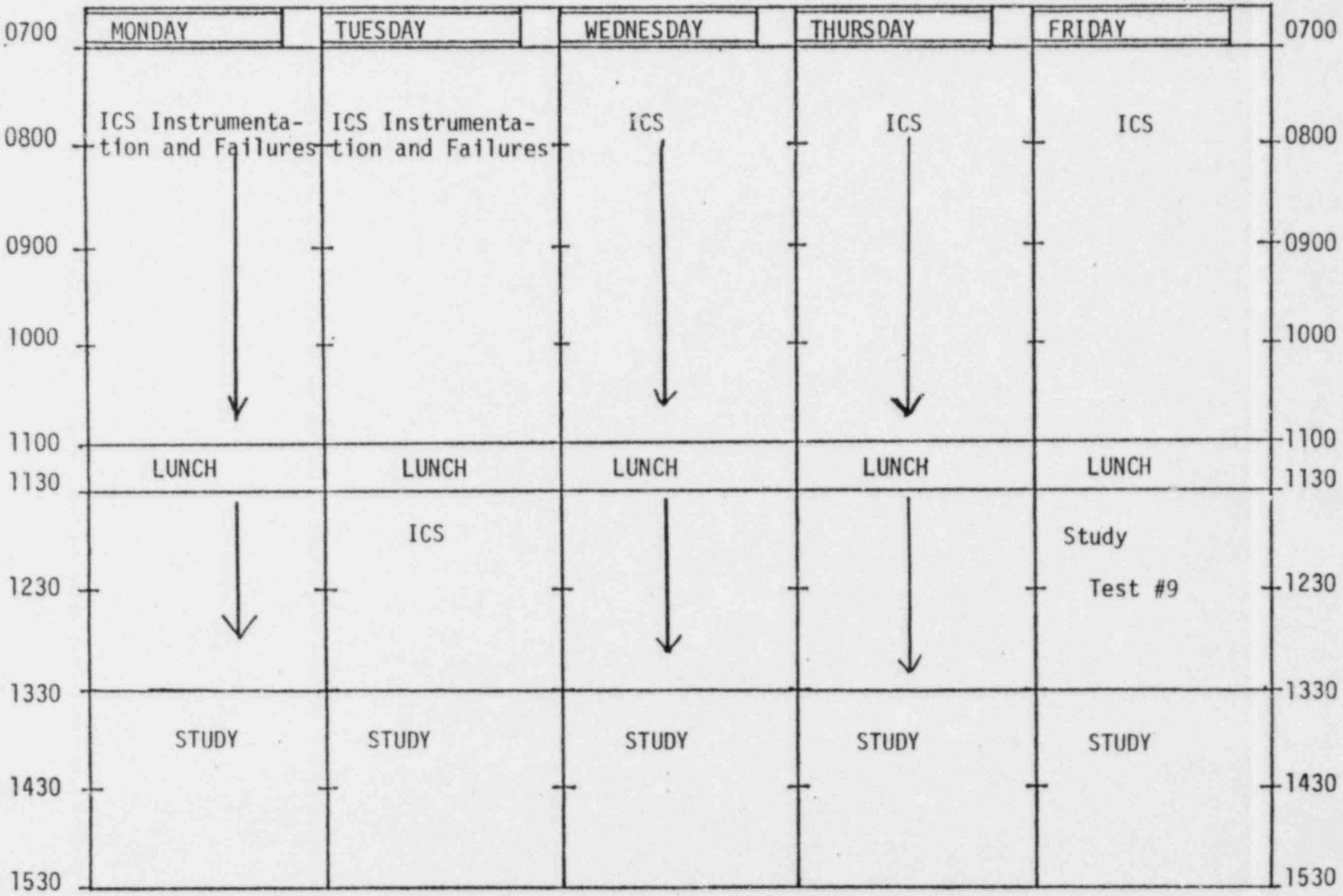


GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 2 Wee

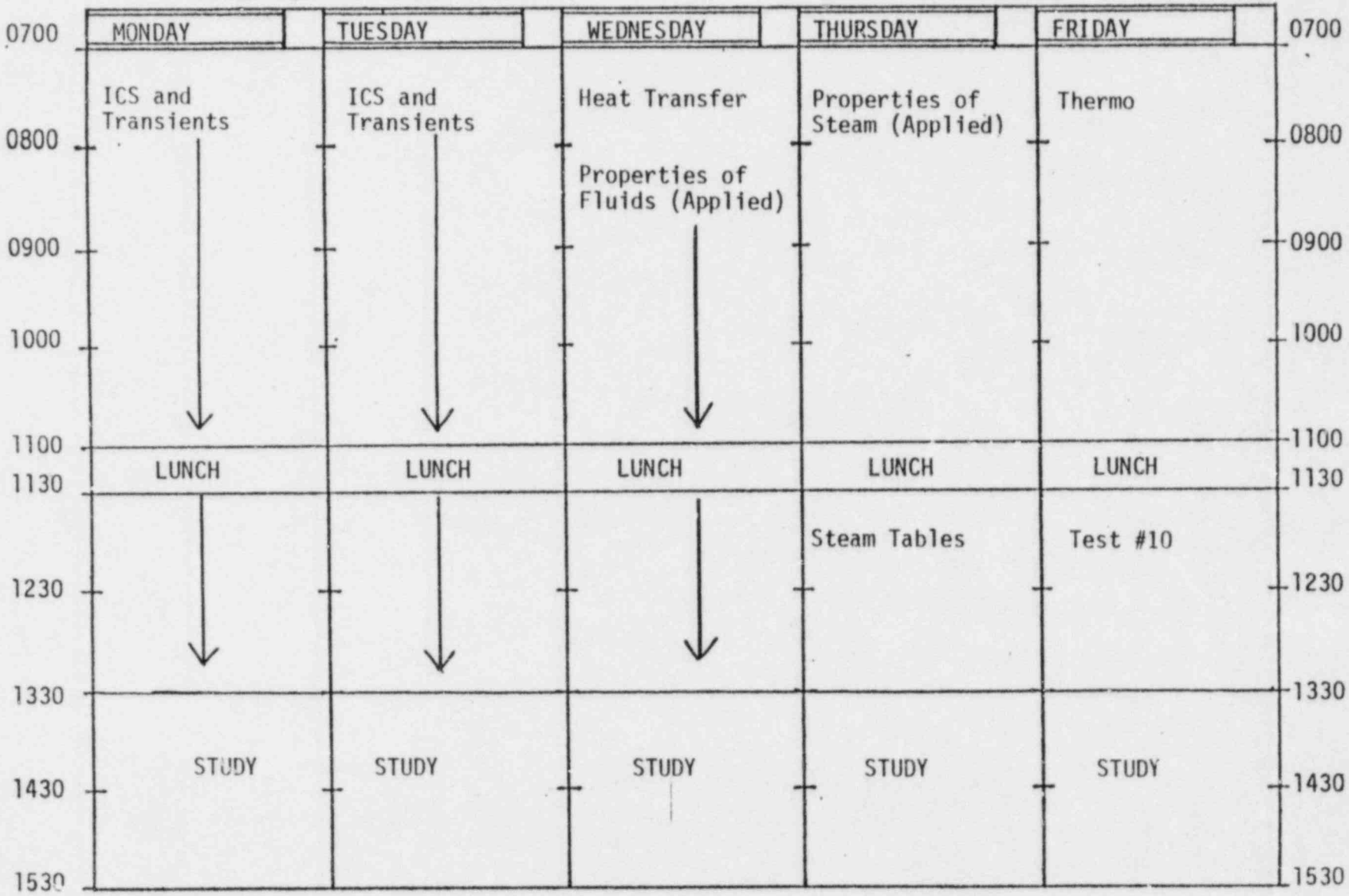


GROUP/SHIFT: Replacement Operators

UNIT: 1

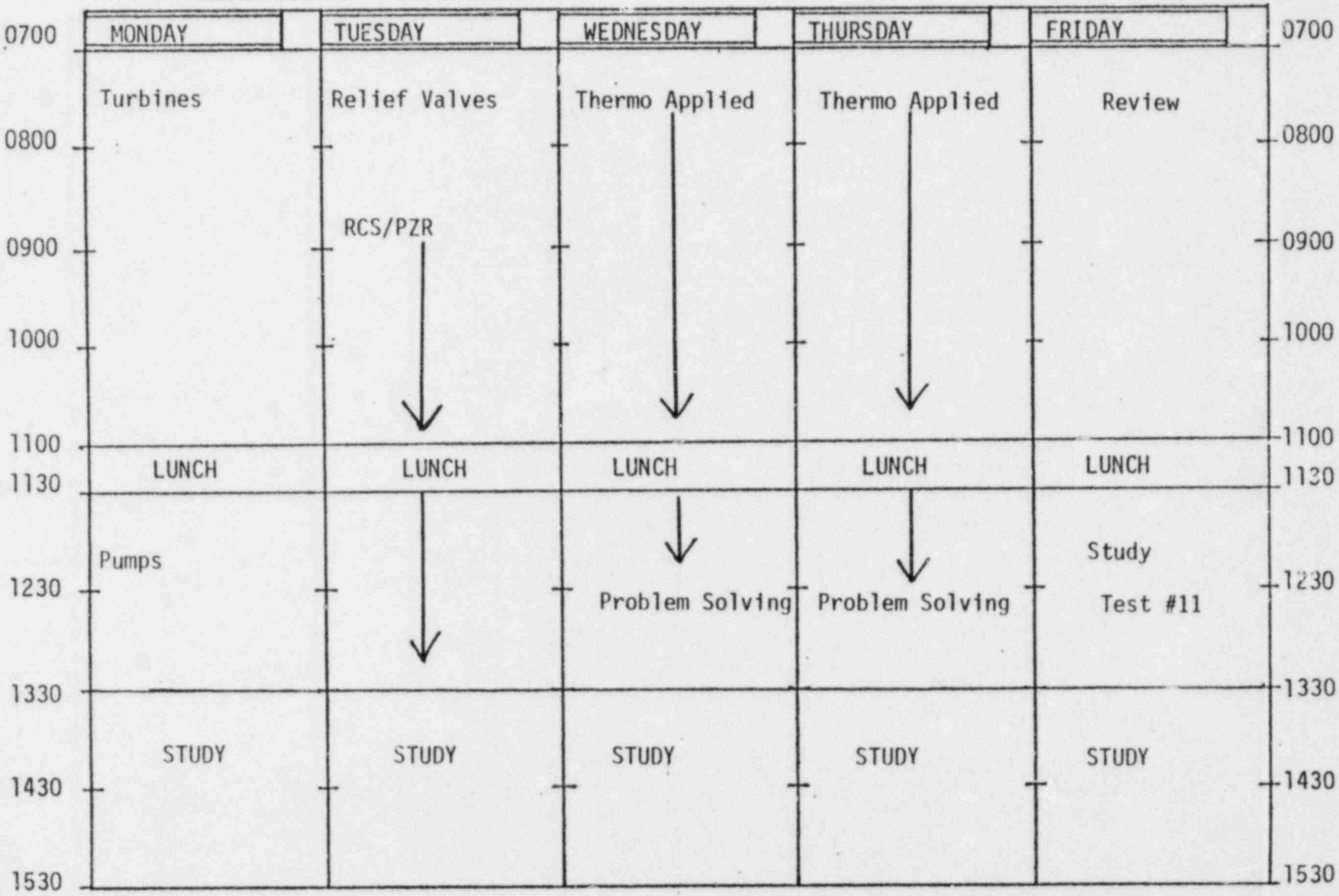
WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 2 Week



GROUP/SHIFT: Replacement Operators UNIT: 1

WEEK OF _____ TO _____ PROGRAM: Replacement Operator Phase 2 Week 5

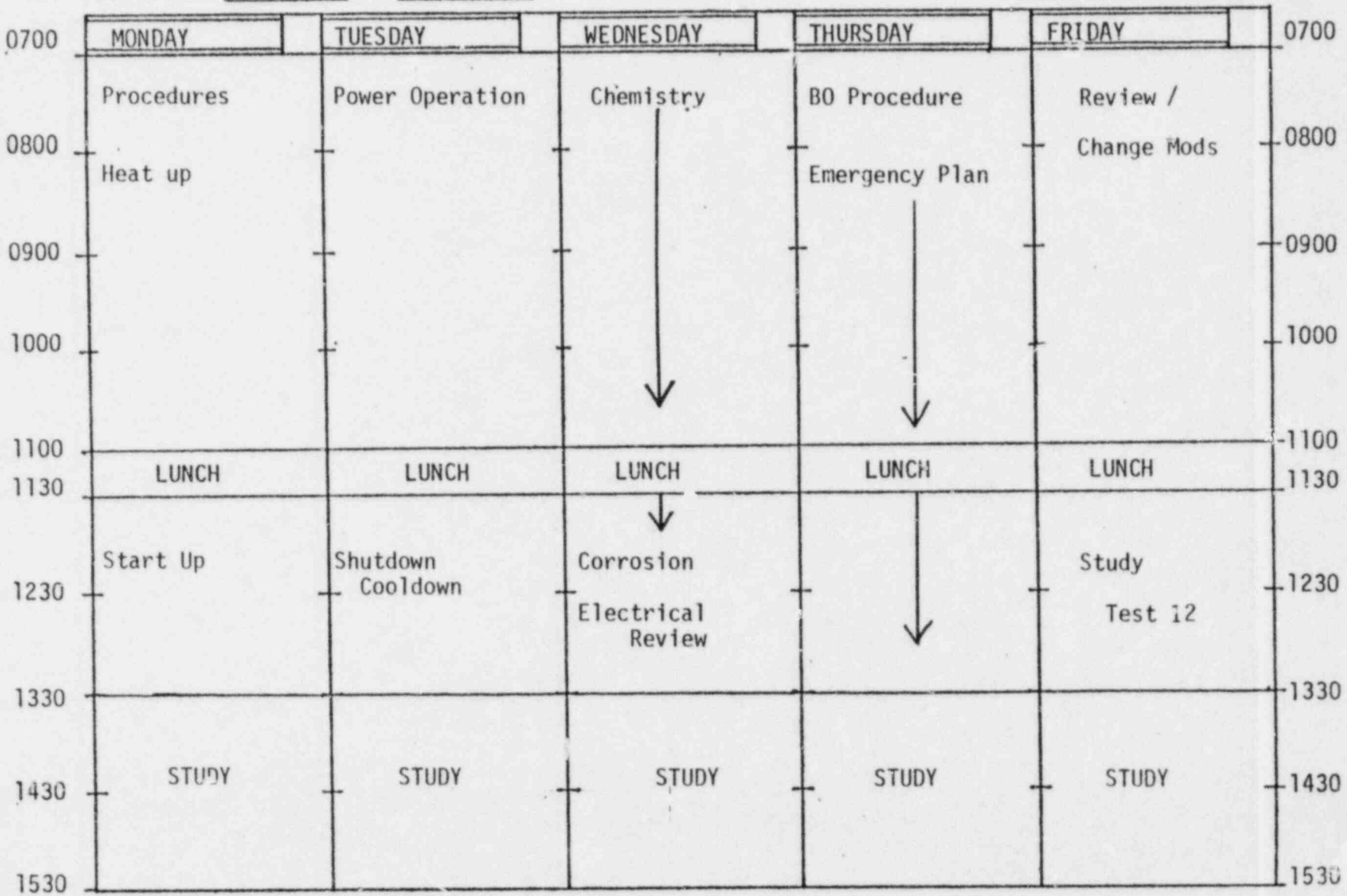


GROUP/SHIFT: Replacement Operators

UNIT: 1

WEEK OF _____ TO _____

PROGRAM: Replacement Operator Phase 2 Week



1. CANDIDATE PROGRESS REPORT - _____
(NAME)

1. CLASSROOM PHASES

QUIZ #	GRADE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

2. OJT PHASE 1

Week	Quiz Grade	Required Signatures New/Total	Actual Signatures New/Total
4		43/43	
8		40/83	
12		27/110	

3. OJT PHASE 2

Week	Quiz Grade	Required Signatures New/Total	Actual Signatures New/Total
4		42/152	
8		40/192	

# of reactivity manipulations completed _____

OJT COMPLETED _____/_____
(Date) Supervisor
Licensed Operator Training

4. Simulator Start-up Certification completed Pass/Fail _____

Date _____

_____
Supervisor, Licensed Operator Training

5. Final Examination

Written _____
Grade/Date

Oral Pass/Fail/_____
(Date)

Oral Board Members: _____

Submitted _____ Reviewed _____
Supervisor, Licensed Op. Trng. Op. Trng Mgr./Mgr. Trng./ Mgr. Ops

2. Oral Examination Summary Sheet

_____
Candidate's Name

_____
Examiner

_____
Date

Purpose: (Check One)

( ) OJT Section Examination

( ) OJT Section Final Verification

( ) Op. Trng. Section OJT Spot Check

( ) Final Examination

( ) Other

Summary of questions asked — Grade (Pass/Fail)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Weak Areas Noted:

_____

_____

_____

Overall Evaluation (Pass/Fail)

Further Action Required (If none, so state)

_____

_____

_____
Signature of Examiner

Reviewed By _____ _____
Supervisor, Licensed Operator Training

3. Designation of Section Examiners

Date _____

The below listed individuals are hereby designated as Section Examiners for the OJT phases of the Replacement Operator Training Program for shift _____ (letter).

PHASE 1		PHASE 2	
SECTION	NAME	SECTION	NAME
1.0		1.0	
2.0		2.0	
3.0		3.0	
4.0		4.0	
5.0		5.0	
6.0		6.0	
7.0		7.0	
8.0		8.0	
9.0		9.0	
10.0			
11.0			
12.0			

_____
Shift ____ Shift Supervisor

cc: Operator Training Section

4. Designation of Foreman as Final OJT Examiner

Date _____

To: _____
Foreman

You are hereby designated to serve as the final verification examiner for the OJT sections noted below:

PHASE 1: _____
(List Sections)

PHASE 2: _____
(List Sections)

for replacement operators on shift _____
(letter)

_____
Shift ____ Shift Supervisor

cc: Operator Training Section