

PORTLAND GENERAL ELECTRIC COMPANY

TROJAN NUCLEAR PLANT

Revision 8

TRAINING PROCEDURE TP 2-2
LICENSEE RETRAINING PROGRAM

APPROVED BY _____

CP Jundt

DATE _____

7/30/80

1.0 DESCRIPTION

The purpose of this program is to ensure that all licensed individuals maintain their proficiency and knowledge in all phases of plant operation and related technical areas. The scope consists of a combination of classroom instructions, on-the-job training, periodic orals and operating drills. On-the-job training includes practical operating experience in reactivity manipulations, simulator experience, and periodic quizzes covering material assigned for self-study. The participants in the program will be given an annual written examination as well as monthly quizzes in order to evaluate their progress.

All personnel holding Reactor Operator or Senior Reactor Operator Licenses shall participate in this program. Each individual shall begin the program within 3 months from the date his license is issued. Newly licensed personnel who have received a license within 3 months of the annual written examination will not be required to participate in that examination.

All lectures covering systems, integrated responses and transients will be taught by instructors possessing a current Senior Operator License.

The term "appropriate simulator" as used in this document describes a simulator, approved by the NRC, which reproduces the general operating characteristics of the Trojan Nuclear Plant, and the arrangement of the instrumentation and controls of the simulator is similar to that of the Trojan Nuclear Plant.

The General Manager may make changes to the training program to the extent that the changes do not decrease the scope, time allotted for the program, or frequency in conducting the different parts of the program. Changes reducing the scope, frequency, and time shall be made pursuant to 10 CFR 50.54.

2.0 CATEGORY I LECTURES

2.1 The Category I Lecture series encompasses those areas on which all licensees must receive instruction each year regardless of performance

on the annual written examination.

- 2.2 Category I Lecture series attendance is required of all licensed reactor operators and senior reactor operators.
- 2.3 Attendance is recorded and absences shall be made up by reviewing the lecture material and discussions with on-shift supervisory personnel or the technical staff. A letter shall be prepared by the absentee's supervisor and forwarded to the Training Supervisor stating that a satisfactory review has been completed. No more than 20 percent of the required lecture hours shall be completed in this manner.
- 2.4 Category I Lectures shall consist of a minimum of 20 classroom hours per year. All topics are covered each year, but the scope of each session is determined by the Training Supervisor. Copies of applicable lesson plans and other documents are supplied to all licensees.
- 2.5 The following topics shall be covered each year during the Category I Lecture series:
 - 2.5.1 Radiation Control and Safety.
 - 2.5.2 Important Plant Design Changes and Modifications.
 - 2.5.3 Operating History and Problems.
 - 2.5.4 Technical Specifications.
 - 2.5.5 Major Operational Evolutions.
 - 2.5.6 Important Procedure Changes.
 - 2.5.7 Important Plant License Changes.
 - 2.5.8 Safety-Related Emergency and Off-Normal Instructions.
 - 2.5.9 Mitigation of accidents involving a degraded core.

3.0 CATEGORY II LECTURES

- 3.1 The Category II Lecture series encompasses those areas which are essentially static in nature. These areas include the following topics:
 - 3.1.1 Theory and Principles of Operation.
 - 3.1.2 General and Specific Plant Operating Characteristics.
 - 3.1.3 Plant Instrumentation and Control Systems.
 - 3.1.4 Plant Protection Systems.
 - 3.1.5 Applicable Portions of Title 10, Chapter 1, "Code of Federal Regulations".
 - 3.1.6 Engineered Safety Systems.
 - 3.1.7 Heat Transfer, Fluid Flow and Thermodynamics.
- 3.2 Individual licensee attendance at Category II Lectures is determined

by performance on the annual written examination. Attendance the following year is required in those subjects where a grade of less than 80 percent is received.

- 3.3 Attendance is recorded and absence shall be made up utilizing individual tutoring by knowledgeable personnel recommended by the absentee's supervisor. The absentees are required to pass a written examination covering the material presented during the missed lecture.
- 3.4 The Category II Lecture series is presented on an as-needed basis. The scope of each series is determined by the Training Supervisor. Copies of applicable lesson plans and other documents are supplied to all participants. Periodic evaluation quizzes covering the content of the Category II Lecture series be administered by the Training Department. If a grade of less than 80 percent is received, self-study and tutorial sessions will be assigned by the individual's supervisor. Another written quiz will be administered. This quiz may be supplemented by oral examination if deemed appropriate by the individual's supervisor. The content of the quizzes is the same for all licensees and will reflect the topic areas presented during the lecture series.
- 3.5 The lecture series may be supplemented by the use of other training techniques including films, videotapes, and other effective training aids. However, the retraining program will not be based solely upon these other training techniques.

4.0 ON-THE-JOB-TRAINING

- 4.1 Each licensee shall perform or participate in a combination of reactivity control manipulations based on the availability of plant equipment and systems. Those control manipulations which are not performed at the plant may be performed on an appropriate simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations. Personnel with senior licenses are credited with these activities if they direct or evaluate control manipulations as they are performed. The starred items shall be performed annually and the other items performed on a two year cycle.
 - *4.1.1 Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.
 - 4.1.2 Plant Shutdown.
 - *4.1.3 Manual control of steam generators and/or feedwater during startup and shutdown.
 - 4.1.4 Boration and or dilution during power operation.
 - *4.1.5 Any significant (> 10%) power changes in manual rod control.
 - 4.1.6 Any reactor power change of 10% or greater where load change is performed with load limit control
 - 4.1.7 Loss of coolant including:

- 4.1.7.1 significant PWR steam generator leaks.
- 4.1.7.2 inside and outside primary containment.
- 4.1.7.3 large and small, including leak-rate determination.
- 4.1.7.4 saturated Reactor Coolant response.
- 4.1.8 Loss of instrument air (if simulated plant specific).
- 4.1.9 Loss of electrical power (and/or degraded power sources).
- *4.1.10 Loss of core coolant flow/natural circulation.
- 4.1.11 Loss of condenser vacuum.
- 4.1.12 Loss of service water
- 4.1.13 Loss of shutdown cooling.
- 4.1.14 Loss of component cooling system or cooling to an individual component.
- 4.1.15 Loss of normal feedwater or normal feedwater system failure.
- *4.1.16 Loss of all feedwater (normal and emergency).
- 4.1.17 Loss of protective system channel.
- 4.1.18 Mispositioned control rod or rods (or rod drops).
- 4.1.19 Inability to drive control rods.
- 4.1.20 Conditions requiring use of emergency boration or standby liquid control system.
- 4.1.21 Fuel cladding failure or high activity in reactor coolant or off-gas.
- 4.1.22 Turbine or generator trip.
- 4.1.23 Malfunction of automatic control system(s) which affect reactivity.
- 4.1.24 Malfunction of reactor coolant pressure/volume control system.
- 4.1.25 Reactor trip.
- 4.1.26 Main steam line break (inside or outside containment).
- 4.1.27 Nuclear instrumentation failure(s).
- 4.2 Each licensee shall be assigned to the controls of an appropriate simulator annually. Simulator scheduling shall be done by the Training Department.

- 4.3 Licensees review applicable documented plant design, license and procedure changes.
- 4.4 Each licensed reactor operator or senior reactor operator reviews the contents of all abnormal and emergency procedures at least once annually.
- 4.5 At the beginning of each month four sets of questions are issued to all licensees.
 - 4.5.1 Each set contains approximately ten questions covering selected topics from the following list:
 - 4.5.1.1 Operating Instructions, including Abnormal and Emergency Operating Instructions.
 - 4.5.1.2 Administrative Orders.
 - 4.5.1.3 Plant Safety Procedures.
 - 4.5.1.4 Operational Quality Assurance Pertaining to Operations.
 - 4.5.1.5 Radiation Protection Manual.
 - 4.5.1.6 Reportable Occurrences.
 - 4.5.1.7 Operating Experiences, Reactor Safety and other NRC Publications.
 - 4.5.1.8 Plant Security.
 - 4.5.1.9 Applicable Portions of Title 10 CFRs.
 - 4.5.1.10 Radiological Emergency Response Plan.
 - 4.5.1.11 Theory and Principles of Operation.
 - 4.5.1.12 General and Specific Plant Operating Characteristics
 - 4.5.1.13 Reactor Transients Curves.
 - 4.5.2 The questions are answered through self-study and retained by the licensee as study guides.
 - 4.5.3 Near the end of the month, each licensee is administered a written quiz on the month's retraining material.
 - 4.5.3.1 The material he is quizzed on is chosen randomly by selection of one of the four sets of questions issued at the beginning of the month.
 - 4.5.3.2 Any licensee receiving a monthly quiz grade of less than 80 percent is assigned extra study. Upon completion of the extra study, he is again quizzed by random selection of one of the three remaining sets of questions. A grade of less than 80 percent on this quiz will be handled on an individual case basis by the Training Supervisor.
 - 4.5.4 After all licensees have satisfactorily completed a particular month's quiz, a key to all of the questions is issued by the

Training Staff.

- 4.4.5 If for some reason such as a special school, temporary or pending transfer, hospitalization, etc. an individual is unable to participate in the monthly quizzes, he may be excused for up to 4 months with the written approval of the Training Supervisor.

5.0 PERIODIC ORALS AND OPERATING DRILLS

- 5.1 Periodic oral demonstration examinations are administered annually to all licensees. The examinations may be conducted on a continuing basis throughout the year as long as each licensed operator is examined annually.
- 5.1.1 The Training Supervisor schedules the oral examinations to be administered to the licensees. He also assigns the personnel to conduct the examinations.
- 5.1.2 The oral examinations are performed by senior licensed personnel using a checklist prepared in advance by the training section that includes the following areas:
- 5.1.2.1 Action in the event of emergency conditions.
 - 5.1.2.2 Action in the event of abnormal conditions.
 - 5.1.2.3 Instrument signal interpretation.
 - 5.1.2.4 Response to plant transients.
 - 5.1.2.5 Procedure changes.
 - 5.1.2.6 Plant modifications.
 - 5.1.2.7 Technical specifications.
- 5.2 Simulated operating drills are conducted periodically for the purpose of evaluating the individual's operating knowledge and performance ability during simulated abnormal or emergency conditions. The drills are conducted on a shift crew basis and will be evaluated by a senior license holder.
- 5.3 Licensed individuals not normally assigned to the Control Room shall demonstrate satisfactory understanding of the operation of all apparatus and mechanisms, and knowledge of operating procedures by examining these areas in the simulated operating drills.
- 5.4 The performance of licensed operators involved with actual emergency or abnormal situations may be evaluated in lieu of simulated operating drills.
- 5.5 Oral examination and operating drill evaluations are assigned a satisfactory or unsatisfactory grade.
- 5.6 Each individual licensee's supervisor is informed by the Training Supervisor of any areas of weakness revealed by the oral examination or the

operating drills. The Training Supervisor will also recommend an individual training program to correct any deficiencies as required. This individual program will include a reexamination to establish that areas of weakness are corrected.

- 5.7 An appropriate simulator may be used to meet the oral examination and operating drill requirements. Wherever possible, Trojan operating procedures and Technical Specifications will be utilized when participating in a simulator program.

6.0 EVALUATIONS

- 6.1 Annually, each supervisor will evaluate all licensed personnel under his supervision. The purpose is to evaluate the performance and competency of individuals based on the supervisor's observations of the individual's day-to-day work. The evaluations will be reviewed by the Operations Supervisor, and a report of the evaluations will be made to the Manager, Operations and Maintenance. The report will make appropriate recommendations such as:

- 6.1.1 Recommend continued licensed activities.
- 6.1.2 Recommend special training in designated areas.
- 6.1.3 Recommend supervision of licensed activities until the following training is completed.

- 6.2 Annual written examinations are given to all licensees to determine areas in which retraining may be required. These examinations follow NRC examination format in so far as possible. As a minimum, site administered retraining Reactor Operator and Senior Reactor Operator examinations will contain all sections found on applicable NRC examinations. The examination will be prepared in advance and an approved key will be prepared before any examinations are graded.

A grade of less than 80% overall or a section grade of less than 70%, or an unsatisfactory oral examination shall require participation in the Accelerated Training Program as outlined in Section 8.0 of this procedure.

- 6.3 The annual written examination and the monthly quizzes are prepared or approved and administered by the Training Staff and graded by a member of the plant technical, operating, or Training Staff. The Training Supervisor approves all examinations and reviews the annual written examinations for grading techniques and consistency.

7.0 RECORDS

- 7.1 The following records will be maintained for at least 2 years:

- 7.1.1 Copies of all examinations and quizzes.
- 7.1.2 Each licensee's annual examination papers.
- 7.1.3 Grades from individual quizzes.
- 7.1.4 Lecture attendance records.

- 7.1.5 Oral examination results.
- 7.1.6 Records of drill participation.
- 7.1.7 Records of reactivity control manipulations.
- 7.1.8 Annual evaluations.
- 7.1.9 Monthly quiz questions.

8.0 ACCELERATED RETRAINING PROGRAM

- 8.1 As noted in Section 6.0 a licensee will enter into a full-time accelerated retraining program if determined to be deficient in the annual written examination or oral examination. The program content will be dictated by the nature of the deficiency. When the licensee is able to satisfactorily pass an equivalent written or oral examination (administered by an individual designated by the Training Supervisor), he may resume licensed activities.
- 8.2 The accelerated retraining programs are developed on an individual basis by the Training Supervisor and are reviewed and approved by the individual's supervisor.
- 8.3 Participation in an accelerated retraining program does not excuse the participant from other retraining program activities.

9.0 ACTIVE STATUS

- 9.1 To remain on active status, a reactor operator or senior reactor operator must be permanently assigned to the Trojan Nuclear Plant and actively engaged in all portions of the retraining program.
- 9.2 If a licensee has not been actively performing the functions of a reactor operator or senior reactor operator for a period of 4 months or longer, he shall, prior to assuming activities pursuant to 10 CFR 55, demonstrate his knowledge and understanding of facility operation and administration. This may be accomplished by reviewing all safety-related emergency and abnormal operating instructions, as well as revisions to the Plant Operating Manual and any design changes during the period of inactivity. These reviews must be followed by an oral examination given by the Operations Supervisor. An unsatisfactory result on the oral examination shall require the operator to have additional training in areas where he was weak before taking the examination again.

10.0 ADMINISTRATION

The Training Supervisor will be responsible for maintaining all active records pertaining to this program and will have the overall responsibility for the implementation of the program.

11.0 SCHEDULES

- 11.1 Category I and Category II Lecture schedules are developed based on

a 1-year training cycle.

11.2 The annual Category I and Category II training schedules, showing the major areas to be covered, are developed prior to implementation. The scope of the material to be covered within each area is formulated and issued to the responsible department well in advance of the date the lecture is to be presented.

12.0 EXEMPTIONS

12.1 The duties of the Training Supervisor and SRO Licensed Specialists who are actively involved in the Retraining Program, exempt them from the annual examinations, monthly quizzes and study guides, oral demonstrations, and operating drills in that they are responsible for their preparation, administration and evaluation.

12.2 Licensed plant administrative and licensed technical personnel shall participate in this program except to the extent that their normal duties preclude the need for specific retraining in particular areas. Exemptions from specific areas of the retraining program may be granted by the Training Supervisor on an individual basis in accordance with 10 CFR 55 Appendix A.

13.0 REPORTING

The Training Supervisor prepares a summary of the Retraining Program annually. This summary includes a general report on the Retraining Program and lists existing or potential difficulties with respect to meeting its requirements.