VEPCO

LICENSED OPERATOR

REQUALIFICATION PROGRAM

Revised: July 1980

REQUALIFICATION PROGRAMS FOR NUCLEAR OPERATORS

A. PURPOSE

The purpose of the operator requalification program is to maintain a level of operator skill and knowledge consistent with safe and efficient plant operation. In addition, the program will serve to demonstrate the continued competence of operators and senior operators to perform their licensed duties, in accordance with Section 55.33 of 10 CFR Part 55.

This program describes the minimum combination of lectures, on-the-job training, evaluation methods and records for requalification of licensed individuals at the Surry and North Anna Power Stations.

B. DEFINITIONS

As used in this program:

1. "Operator" means any individual who possesses an operator license pursuant to 10 CFR Part 55.
2. "Senior Operator" means any individual who possesses a senior operator license pursuant to 10 CFR Part 55.
3. "Licensed Staff Member" means any individual who maintains an operator or senior operator license for the purpose of providing backup capability to the normal operating staff. Such individuals may include, but are not limited to, Station Manager, Assistant Station Manager, Superintendant-Operations, Superintendent-Technical Services, Superintendent-Maintenance, Supervisor-Nuclear Training, Nuclear Training Coordinators, and Engineers.

4. "Controls" means apparatus and mechanism, the manipulations of which directly affect the reactivity or power level of the reactor.
5. "Control Manipulation" means manipulation of any appratus or mechanism which directly affects the reactivity or power level of the reactor. Control manipulations are listed in Appendix A.
6. "Acceptable Simulator" means a simulator which reproduces the general operating characteristics of Surry Units 1 and 2, and is approved by the Nuclear Regulator Commission for the requalification program.
7. "Operating Personnel" means those operators and senior operators who are actively engaged, on a routine basis, in manipulating or directing the manipulation of the controls. Such individuals include, but are not limited to, operators and senior operators assigned to a shift.
8. "Inactive Operators and Senior Operators" means those operators or senior operators who have been absent from the facility for a period of longer than four (4) months.
9. "Licensed Duties" means those duties which involve the manipulation or direction of the manipulation of the controls.
10. "Requalification Cycle" means two (2) year period in which the Retraining Program shall be covered on a recurring basis. Any personnel issued an NRC License during the cycle, shall be entered into the program upon receipt of the license.

C. TRAINING PROGRAM

1. Annual Lecture Series

The requalification program shall include preplanned lectures on a regular and continuing basis. The minimum number of lectures in any calendar year shall not be less than six, evenly spaced throughout

the year and taking into consideration heavy vacation periods and infrequent operations, such as refueling. Lectures may be deferred due to unanticipated shutdowns or other special operations. However, these lectures should be conducted at a later date. The annual lectures series shall cover the subjects listed below with stress placed on weak areas determined by the previous annual written examination.

1) Reactor Theory
2) Nuclear Sciences (physics, thermodynamics, heat transfer, fluid folw, etc.)
3) Instrumentation and Control
4) Reactor Plant Transients
5) Systems and Operating Procedures
6) Emergency/Abnormal Operations and Procedures
7) Operating Experience and Recent Problems
8) Radiological Safety and Health Physics
9) Water Chemistry Control
10) Technical Specifications
11) Mitigating Core Damage

An annual schedule of subject matter to be covered during the lecture period shall be promulgated.

All operating personnel, possessing an operator or senior operator license, should attend the annual lecture series. If any operating personnel should miss the lecture, every effort shall be made to reschedule the lecture during the year or other remedial training will be assigned.

Licensed personnel defined in Section B will be exempt from attending the lecture series providing they attain a minimum overall grade of 80% and not less than 70% on any sections of the annual examination. Any person making less than 80% overall or less than 70% on a section shall be required to attend those lectures to cover his deficiencies. He shall be reexamined by written examination in those sections where he was deficient, and the minimum acceptable grade is 70%.

Training aids, such as video tapes and films, may be used in lieu of an instructor for the lecture series. However, the use of such training aids shall not constitute more than 50% of the lecture series. A test shall be administered at the end of each lecture session to determine operator comprehension of the material covered.

2. On-The-Job-Training

Each operator shall perform and each senior operator shall either perform, or direct the performance of, at least ten (10) control manipulations during the requalification cycle. These manipulations shall be a mix of the acceptable control manipulations listed in Appendix A.

All operators and senior operators shall perform or participate in a combination of reactivity control manipulations based on the availability of plant equipment or systems.

An acceptable simulator may be utilized in meeting the requirements for reactivity control manipulation and understanding of plant equip-

ment. However, every effort should be made to obtain actual hands-on experience in the plant in accomplishing the above.

3. Facility Changes and Modifications

Changes to procedures, precautions, setpoints and limitations, facility design, facility license, technical specifications and any other information of interest shall be promulgated as required reading. The information shall be placed in the required reading book in the Control Room. Each operator shall read and sign the attached sheet signifying completion. The Superintendent-Operations shall assign material to the required reading book with a completion time for each document. A file to document completion of required reading shall be maintained in the Records Vault. These changes and modifications should also be reviewed during the classroom phase.

4. Abnormal and Emergency Procedures Review

The abnormal and emergency procedures shall be reviewed on an annual basis. A schedule will be promulgated monthly designating those procedures to be reviewed. Where conditions are such that review cannot be done within a specific month, those procedures shall be rescheduled to complete the review within the year. A record of this review shall be maintained by the Supervisor-Nuclear Training.

D. EVALUATION

1. Annual Examination

All operators and senior operators shall take the annual written examination at the end of each calendar year. The annual written examination shall have the same content as an NRC examination consistent with the type of license held and shall be comparable in the level of difficulty. An overall grade of less than 80%, or a grade less than 70% in any section, shall require removal from licensed duties and participation in an accelerated requalification program.

2. Lecture Quiz

A written quiz shall be administered at the completion of each lecture session to ensure that the participants have learned the material presented. A grade of less than 80% shall require additional training in the subjects covered; either by self-study or additional lectures. Retesting in the unsatisfactory areas shall be required and a grade of 80% attained.

3. Operational Evaluation

A systematic observation and evaluation of an individual's performance and competency including actions taken, or to be taken, during actual or simulated abnormal and emergency conditions shall be conducted at least once each year. This evaluation shall be in addition to the immediate supervisor's normal continuous evaluation. The Surry simulator may be used for systematic evaluation of performance. The evaluation may be conducted by a licensed Senior Reactor Operator assigned by the Supervisor-Nuclear Training or the Superintendent-Operations.

E. ACCELERATED REQUALIFICATION PROGRAMS

Specifics of accelerated requalification programs are not included because of the wide variety that may be required based on an individual's need. However, an overall grade of 80% and not less than 70% in any section on any written examination is required to indicate successful completion of an accelerated requalification program.

F. LICENSED STAFF MEMBERS

As a minimum, licensed staff members, as defined in Section B, shall:

1. Be administered the annual written examination and participate in the lecture series based on the results thereof.
2. Manipulate the controls or supervise the manipulation of the controls through ten (10) reactivity changes during the requalification cycle. An acceptable simulator may be used to accomplish this.
3. Systematically review design changes, procedure changes and facility license changes.
4. Systematically review the contents of all abnormal and emergency procedures on a regularly scheduled basis.
5. Be systematically evaluated regarding actions to be taken during simulated abnormal and emergency conditions by a walk-through of the steps of the procedures on an annual basis. An approved simulator may be utilized.

G. INACTIVE OPERATORS AND SENIOR OPERATORS

It is anticipated that some licensed operator or senior operators will be absent from the units for which they hold licenses for periods longer

than four (4) months. Prior to resuming activities as an operator or senior operator, at the licensed facility, a review series shall be completed covering all operating, abnormal, administrative, emergency procedures and any unit design changes or modifications that may have occurred during his absence. In addition, a period of one (1) month of operating under the guidance of a licensed operator or senior operator shall be conducted, after which he will be required to pass a comprehensive oral examination administered by the Training Department or Superintendent-Operations. If this is satisfactory, he will resume his activities and immediately be placed in the normal retraining cycle.

H. TRAINING COORDINATORS

The Supervisor-Nuclear Training and Nuclear Training Coordinators who prepare, administer, and grade the annual written examination need not take the examination. A maximum of three Training personnel may be exempt.

I. RECORDS AND DOCUMENTATIONS

Records of the requalification program shall be maintained to document each licensed operator's and senior operator's participation in the requalification program. The records to be maintained follow:

1. Annual examination and each licensed operator's answers to these examination questions.
2. Documentation indicating that each licensed operator has reviewed the contents of abnormal and emergency procedures.

3. Documentation indicating that each operator is cognizant of sigif-icant facility design, procedure, and license changes.
4. Details and results of any accelerated and/or remedial training conducted.
5. Results of observation and evaluation performed on each licensed operator, including any deficiencies in the individual's training results.
6. Documentation of any group discussions held including attendance and subject matter discussed.
7. Documentation of oral examinations given due to failure of written examinations indicating areas covered and results.
8. Documentation of lecture series quiz results.

J. RESPONSIBILITY

The Section Supervisor-Nuclear Training shall be responsible for the implementation of the Requalification Program. The Supervisor-Nuclear Training shall be responsible for the conduct and administration of the requalification program.

APPENDIX A

CONTROL MANIPULATIONS

The following control manipulations and plant evolutions are acceptable for meeting the reactivity control manipulations required by Appendix A, Paragraph 3.a. of 10 CFR Part 55. 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 following manipulations shall be performed annually:

(1) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.

(2) Manual control of steam generators and/or feedwater during startup and shutdown.

(3) Any significant (10%) power changes in manual rod control

(4) Loss of coolant including:

1. significant PWR steam generator leaks
2. inside and outside primary containment
3. large and small, including leak-rate determination
4. saturated Reactor Coolant response (PWR).

(5) Loss of core coolant flow/natural circulation.

(6) Loss of all feedwater (normal and emergency).

The following manipulations shall be performed on a two year cycle:

(1) Plant shutdown.

(2) Boration and or dilution during power operation.

(3) Loss of instrument air (if simulated plant specific).

(4) Loss of electrical power (and/or degraded power sources).

(5) Loss of condenser vacuum.

(6) Loss of service water if required for safety.

(7) Loss of shutdown cooling.

(8) Loss of component cooling system or cooling to an individual component.

(9) Loss of normal feedwater or normal feedwater system failure.

(10) Loss of protective system channel.

(11) Mispositioned control rod or rods (or rod drops).

(12) Inability to drive controls rods.

(13) Conditions requiring use of emergency boration.

(14) Fuel cladding failure or high activity in reactor coolant.

(15) Turbine or generator trip.

(16) Malfunction of automatic control system(s) which affect reactivity.

(17) Malfunction of reactor coolant pressure/volume control system.

(18) Reactor trip.

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

(20) Nuclear instrumentation failure(s).

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