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REGULATORY DOCKET FILE COPY

Frederick W. Schneider
Vice President
Production

Public Service Electric and Gas Company, 180 Park Place Newark, N.J. 07101 201/430-7373

November 17, 1980

Mr. Paul F. Collins
Chief, Operator Licensing Branch
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Collins:

LICENSE TRAINING PROGRAMS

In a recent telephone conversation with our Sr. Nuclear Training Supervisor, Jim Lloyd, which related to the shift experience requirements for license candidates, you indicated that your present policy was that the three months' experience be completed in a continuous manner.

We are in full agreement that the minimum three months' experience is necessary, however, we prefer to separate the three months' experience into multiple week segments tied to specific training topics. The training topics are enhanced by the trainee's participation in shift operations which relate to these topics. The multiple week segments are monitored by the training staff as part of the training experience. This permits us to better evaluate the operator's training and take remedial steps should that be necessary.

You further indicated that we could submit our programs for your evaluation and possible approval, even though they are not in line with your present general policy. Enclosures 1 and 2 are copies of our Nuclear Control Operator (NCO) and Shift Supervisor-Engineer (SS-E) Programs. In both cases the on-shift experience is interspersed throughout the program. Our shift experience is structured training in that the trainees complete a qualification card and are periodically audited (unannounced) by a licensed member of the training staff. A minimum assignment is two weeks (in two cases for the NCO's) and all others are four-six weeks consecutively. PSE&G feels that shift assignment in this manner enhances the training program as well as meets the intent of

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gaining good, hands-on experience prior to licensing. Gaining the experience by this method allows the trainee to get a better understanding for what the job is all about by utilizing the knowledge accumulated in the classroom in a timely manner. We believe that this reinforces the learning process by placing the trainee in a working situation while the material is still fresh in the trainee's mind. Our alternate approach would be shift assignment, for three consecutive months, at the end of the training program, prior to the simulator. We do not feel that this would be as effective since much of the material, especially the early theoretical material, could be stale in the trainee's mind. This could lead to confusion and incorrect conclusions.

We have implemented the license training programs according to the attached course schedules. If you do not concur with our multiple week shift schedules, please inform us as soon as possible so that we can make adjustments.

We thank you for the assistance and cooperation of you and your staff during these times of rapid regulatory changes and Salem licensed manpower problems. If you have any questions or require additional material, contact Jim Lloyd at 609-935-~~1~~132.

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Sincerely,

F W Schneider
JW

Enclosures

Nuclear Control Operator
HOT LICENSE TRAINING Program Outline

<u>WEEK</u>	<u>TOPIC AREA</u>
1-3	Mathematics Fundamentals Review
4-6	General Science Review
7&8	Major Reactor Systems Lectures
9&10	ON-SHIFT Qualification
11&12	Health Physics
13-15	Electrical Theory
16	Electrical Systems Lectures
17-20	Heat Transfer & Fluid Flow
21-24	Reactor Theory
25	Reactor Engineering Manual
26&27	Reactor Auxiliary Systems Lectures
28&29	Secondary Systems Lectures
30&31	ON-SHIFT Qualification
32-37	Instrumentation & Control Systems
38-41	ON-SHIFT Qualification
42-44	Systems Review/System Checkouts
45-47	Integrated Plant Response
48	Operating & Emergency Instructions
49&50	SIMULATOR (Startup Certification/Emergency & Transient Operations)
51-54	ON-SHIFT Qualification
55-58	Pre-license Review Series
59&60	Miscellaneous (Allow for holidays, illness, problem areas, etc.)

Enclosure 1

SALEM SHIFT SUPERVISOR - ENGINEER
COURSE SCHEDULE

Sept. 1-19 On Shift

REACTOR THEORY

Sept. 22 Atomic and Nuclear Structure
Radioactive Decay and Nuclear Reactions

Sept. 23 Cross Sections, Flux and Reaction Rates
Binding Energy and the Fission Process

Sept. 24 Neutron Travel and Sources
Neutron Multiplication and Keff

Sept. 25 Reactivity, SDM and Kexcess
Subcritical Multiplication

Sept. 26 Prompt and Delayed Neutron Fractions
Reactor Period

Sept. 29 EXAMINATION
Reactivity Coefficients
Control Rod Worth

Sept. 30 Fission Product Poisons

Oct. 1 Time in Life Effects
PWR Operating Characteristics

Oct. 2 ECP, $1/M$, and SDM Calculations

Oct. 3 Review
EXAMINATION

SYSTEMS

October 6 - October 31

Oct. 6 Reactor Coolant System

Oct. 7 Chemical and Volume Control System

Oct. 8 Chemical and Volume Control System
Residual Heat Removal System

Oct. 9 Safety Injection System

Oct. 10 Component Cooling
Service Water

Oct. 13 EXAM
Containment Systems

Oct. 14 Fuel Handling Systems

Oct. 15 Main Steam System
Main Turbine and Support Systems

Oct. 16 Bleed Steam System
Condenser and Condenser Air Removal System

Oct. 17 Heater Drain System
Condensate System

Oct. 20 Condensate System
Condensate Polishing

Oct. 21 Feedwater System

Oct. 22 Spent Fuel Pool Cooling System

Oct. 23 Circulating Water System
Control Room Ventilation System

Oct. 24 Review
EXAM

Oct. 27 Main Generator and Support Systems

Oct. 28 Generator Exciter and Voltage Regulator

Oct. 29 Electrical Distribution System

Oct. 30 Diesel Generators and Support Systems

Oct. 31 Primary and Secondary Chemistry

INSTRUMENTATION AND CONTROL

November 3 - November 26

Nov. 3 Nuclear Instrumentation System

Nov. 4 HOLIDAY

Nov. 5 Radiation Monitoring System

Nov. 6 Incore Instrumentation System

Nov. 7 Review
EXAM

Nov. 10 Rod Control System
Rod Position Indication System

Nov. 11 HOLIDAY

Nov. 12 Pressurizer Pressure and Level Control

Nov. 13 Steam Generator Water Level Control
Steam Generator Feed Pump Speed Control

Nov. 14 Steam Dump Control

Nov. 17 Electro-Hydraulic Control

Nov. 18 Reactor Protection System

Nov. 19 Engineered Safety Features Actuation System
Safeguards Equipment Control

Nov. 20 Instrument Failure Analysis

Nov. 21 Integrated System Response

Nov. 24 Transient and Accident Analysis

Nov. 25 Transient and Accident Analysis

Nov. 26 Review
EXAM

Nov. 27 HOLIDAY

On Shift Practical Experience
November 28-January 2

HEAT TRANSFER, FLUID FLOW
AND CORE PARAMETERS
January 5 - January 16

Jan. 5 Thermodynamic Properties
 Measurement and Conversion

Jan. 6 Thermodynamics

Jan. 7 Heat Transfer Methods

Jan. 8 Heat Cycles
 Heat Exchangers

Jan. 9 Reactor Heat Generation
 Reactor Fuel Heat Transfer

Jan. 12 Reactor Power Limits

Jan. 13 Reactor Safety Limits

Jan. 14 Properties of Fluids

Jan. 15 Principles of Fluid Flow

Jan. 16 Fluid Flow Applications

HEALTH PHYSICS
January 19 - January 23

Jan. 19 Radiation Protection Principles
Jan. 20 Time, Distance and Shielding Problems
Jan. 21 Dose Rate Problems
Jan. 22 Radiation Detection Principles
Jan. 23 Administrative Procedure #24
 Radiological Protection Program

PROCEDURES
January 26 - January 30

Jan. 26 Code of Federal Regulations
 Technical Specifications
Jan. 27 Plant Overall Operating Instructions
Jan. 28 Plant Emergency Instructions
Jan. 29 Plant Administrative Procedures
 Emergency Plan
Jan. 30 Review
 EXAM

 On Shift Practical Experience
 February 6 - March 6

 Startup Certification at the Surry Simulator
 March 7 - April 7

 Audit Exams
 April 13 - April 24

 REVIEW
 April 27 - May 8

SALEM RO/SRO COURSE SCHEDULE

REACTOR THEORY

September 22 - October 3

Sept. 22	Atomic and Nuclear Structure Radioactive Decay and Nuclear Reactions
Sept. 23	Cross Sections, Flux and Reaction Rates Binding Energy and the Fission Process
Sept. 24	Neutron Travel and Neutron Sources Neutron Multiplication and the Six Factor Formula
Sept. 25	Reactivity, Shutdown Margin and Excess Reactivity Subcritical Multiplication
Sept. 26	Prompt and Delayed Neutron Fractions Reactor Period
Sept. 29	EXAM Reactivity Coefficients Control Rod Worth
Sept. 30	Fission Product Poisons and Samarium Xenon
Oct. 1	Time in Life Effects PWR Operating Characteristics
Oct. 2	ECP, 1/m Plots, Shutdown Margin Calculations
Oct. 3	Review EXAM