CONNECTICUT YANKEE
TRAINING ABSTRACT

Program I.D.: OP-SRO Rev. 1

Approved: [signature]

Date: 7.23.80

TITLE	Licensed Senior Reactor Operator Replacement Training
DEVELOPED FOR	Senior Reactor Operator License Candidates
OBJECTIVE	Prepare the trainee for the Nuclear Regulatory Commission License Exam. Also, prepare trainee for position of Supervisory Control Operator.
LENGTH	3 to 4 Months
SCHEDULE	As needed
TYPE	Self study
EVALUATION	Exam Evaluation
CONTENT	Lectures 1.0 Introduction 2.0 Administrative 3.0 Nuclear Theory and Reactor Operation 4.0 Chemistry 5.0 Radiation Protection On Job Training 1.0 Power Plant Experience 2.0 Operating Experience 3.0 Control Manipulations

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TITLE

License Senior Reactor Operator Replacement Training

OBJECTIVE

Prepare the trainee for the Nuclear Regulatory Commission License Exam. Also prepare trainee for position of Supervisory Control Operator.

EVALUATION

Exam Evalution

CONTENT

LECTURES

1.0 Introduction

- 1.1 Course Outline
- 1.2 Issue Course Materials

2.0 Administrative

- 2.1 Technical Specification (Basis)
  - 2.1.1 Appendix A
  - 2.1.2 Appendix B
- 2.2 Emergency Plan
  - 2.2.1 Connecticut Yankee Plan
  - 2.2.2 State Plan
  - 2.2.3 Emergency Plan Procedures
- 2.3 Security
  - 2.3.1 Plant Access
  - 2.3.2 Vital Area Control
  - 2.3.3 Emergency Response

2.4 Code of Federal Regulation

2.4.1 10CFR19

2.4.2 10CFR20

2.4.3 10CFR50

2.4.4 10CFR55

3.0 Nuclear Theory and Reactor Operation

3.1 Math

3.1.1 Logs

3.1.2 Power Problems

3.2 Basic Physics

3.2.1 Fluid Flow and Pump Theory

3.2.2 Thermodynamics

3.3 Reactor Theory

3.3.1 Neutron Production

3.3.2 Reactivity

3.3.3 Neutron Multiplication in a Subcritical Reactor

3.3.4 Reactor Period/Startup Rate and Power Level

3.3.5 Reactivity Coefficients

3.3.6 Time Dependence and Fission Products

3.3.7 Reactivity Balance

3.4 Core Performance and Operation

3.4.1 Heat Transfer Fundamentals

3.4.2 Heat Transfer in a Core

3.4.3 Core Loading/Refueling

3.4.4 Physics Testing

3.4.5 Power Escalation

ON JOB TRAINING

1.0 Power Plant Experience

1.1 As a minimum an applicant, for NRC SRO License, must have four (4) years of responsble power plant experience.

1.2 Two years must be nuclear power plant experience of which at least six (6) months shall be at Connecticut Yankee.

1.3 Applicants must meet the requirements of ANSI/ANS-3.1 (latest revision).

2.0 Operating Experience

2.1 As a minimum an applicant must have three (3) months of Control Room Training as an extra man on shift.

3.0 Control Manipulations

3.1 As a minimum an applicant must control or supervise five significant reactivity changes in any combination of the following:

3.1.1 Reactor startup to the point of adding heat

3.1.2 Orderly shutdown

3.1.3 Manual control of steam generator level during a plant startup of shutdown.

3.1.4 Control of turbine generator during a load load change of greater than 10%

3.1.5 Boration during power operation

3.1.6 Dilution during power operation

3.1.7 Control rod manipulation during power change greater than 10%

3.1.8 Control rod manipulation during generator phasing