

REACTOR START-UP CERTIFICATION

DURATION: Five days

CLASS SIZE: 3 or groups of 3

LOCATION: Nuclear Training Center, Lynchburg, Virginia

PURPOSE: To provide a prospective reactor operator an opportunity to qualify for having accomplished his reactor start-up on the B & W simulator thus eliminating plant off-line time for training and reactor operator examination.

DESCRIPTION: The course consists of four days of classroom and simulator instruction in reactor startup technique and an introduction to power operation. The fifth day will be utilized to examine each student as to his ability to perform a reactor startup. A certification to the sponsoring utilities plant management and to the USAEC Operator Licensing Branch will be made of those students who satisfactorily complete the operating examination for a reactor startup.

TYPICAL SCHEDULE:

DAY 1

Classroom Instruction
Introduction to Control Panels
Introduction to the Startup Procedure
Practical Session
Reactor Criticality

DAY 2

Classroom Instruction
Reactivity Balance Calculations
Reactor Startup - Hot Functional Shutdown to 10% Power
Practical Exercise
Reactor Startup - Hot Functional Shutdown to 10% Power

DAY 3

Classroom Instruction
Technical Specifications and their Relationship to Startup
Plant Startup to 20% Power
Practical Session
Reactor Startup - Hot Shutdown to 20% Power, *including loading procedure.*

DAY 4

Classroom Instruction
Review of Startup Procedure
Practical Session
Reactor Startup Practice

DAY 5

Reactor Startup Examination

80 1200 015

Points To Be Judged By The Examiner:

- 1) Ability to manipulate controls and keep the reactor under control.
- 2) Ability to use the instrumentation to control the reactor.
- 3) Ability to follow authorized procedures.
- 4) Ability to explain the alarms and annunciator signals which occur during the operation.
- 5) Ability to predict the approximate instrument response for the required maneuver.
- 6) Actual accomplishment of the specific operational task given.

CONDUCT OF REACTOR STARTUP
 EXAMINATION ON
 BABCOCK AND WILCOX CO.
 PRESSURIZED WATER REACTOR
 NUCLEAR POWER PLANT
 SIMULATOR

SIMULATOR INITIAL CONDITIONS:

<u>Major Conditions</u>	<u>Approximate Value</u>
Reactor Coolant Average Temperature	535 F
Reactor Coolant Pressure	2155 PSI
Pressurizer Water Level	100 Inches
Steam Header Pressure	885 PSIG
Control Rods	
Group 1, 2, 3, and 4	100%
Groups 5, 6, and 7	0%
Group 8	43%

The reactor will be in the hot shutdown conditions. All hand/auto controllers will be in the state required by the plant startup procedure.

STUDENT PROBLEM:

1. Determine the estimated critical rod position utilizing applicable procedures. Note: The Training Center Staff Instructor will provide the required information to accomplish this task.
2. Determine that those instruments that are to be used during the startup are functioning properly.
3. Perform a reactor startup to 5% full power.
4. Describe to the examiner each major step you take.
5. Answer to the best of your ability those questions the examiner may ask. Answering questions should not take precedence over plant operations.
6. Advise the examiner as soon as you determine that the reactor is critical and/or supercritical and also the point that nuclear heat is added to the reactor coolant.