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FROM: Carolina Power & Light Co. Raleigh, N. C. 27602 E. E. Utley			DATE OF DOC 9-19-73	DATE REC'D 9-27-73	LTR X	MEMO	RPT	OTHER
TO: P. F. Collins			ORIG 2 signed	CC 38	OTHER	SENT AEC PDR X SENT LOCAL PDR X		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 40		DOCKET NO: 50-261		

DESCRIPTION:  
Ltr re our 8-22-73 ltr.....trans the following

ENCLOSURES:  
OPERATOR RETAINING PROGRAM-Requalification of  
the licensed operators & senior operators

ACKNOWLEDGED

DO NOT REMOVE

( 2 Orig & 38 cys rec'd )

PLANT NAME: H. B. Robinson Unit 2

FOR ACTION/INFORMATION 9-28-73 GC

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9-28-73 TEETS	1-GERALD ULRIKSON...ORNL	1-RD..MULLER..F-309 GT

Regulatory Docket File



Carolina Power & Light Company

September 19, 1973

50-261

File: NG 3514

Serial: NG-73-408

Mr. Paul F. Collins, Chief  
Operators Licensing Branch  
Division of Reactor Licensing  
U. S. Atomic Energy Commission  
7920 Norfolk Avenue  
Bethesda, Maryland

Dear Mr. Collins:

H. B. ROBINSON UNIT NO. 2  
LICENSE DPR-23  
REQUALIFICATION OF OPERATORS



In accordance with your letter dated August 22, 1973, concerning the changes to 10 CFR 50 and 10 CFR 55, Carolina Power & Light Company is submitting a proposal for your approval for the requalification of the licensed operators and senior operators at the H. B. Robinson Nuclear Power Generating Station.

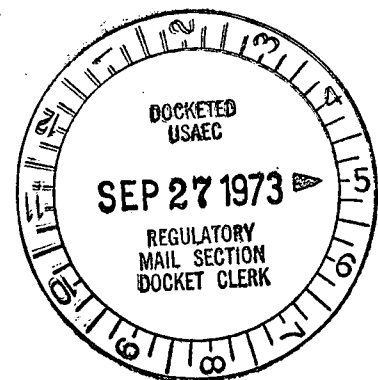
This proposal meets all the requirements stated in 10 CFR 55 and in many cases exceeds them.

Yours very truly,

E. E. Utley  
Vice-President  
Bulk Power Supply

JEH:mvp  
Enclosure

cc: Messrs. C. D. Barham  
N. B. Bessac  
B. J. Furr  
J. E. Hall  
D. V. Menscer



7244

H. B. ROBINSON'S OPERATOR RETRAINING PROGRAM

H. B. Robinson's Retraining Program is designed to ensure that all licensed reactor operators and senior reactor operators will maintain proficiency in their assigned plant operating tasks. Further, it is expected that participation in this program will allow all licensed personnel to meet or exceed the requirements set forth by USAEC operator licensing group.

The following is a detailed summary of the H. B. Robinson's Operator Retraining Program which will be conducted to fulfill the requirements of 10 CFR 55. The full program will be implemented in such a manner as to minimize scheduling difficulties that will be incurred by plant management. Three to four months during the two-year interval will be allotted for refueling and maintenance downtime.

The entire Retraining Program will be conducted in three (3) phases: 1) retraining on-site, 2) retraining off-site, and 3) operator evaluation.

PHASE I - RETRAINING ON-SITE

The on-site portion of the retraining program will consist of approximately 120 hours of instruction. This instruction will be given in two (2) parts: 1) formal classroom lectures, and 2) on-shift training. The scheduling on site will be such that every licensed operator will have the opportunity to attend all lectures. The following is an outline of what subjects may be covered in each of these parts, but not necessarily in the order stated.

1. Formal Classroom Lectures
  - a. Theory and Principles of Operations
    1. Atomic and nuclear physics
    2. Subcritical multiplication
    3. Xenon and samarium effects
    4. Rod worth
    5. Boron worth
    6. Coefficients and defects
      - a) Moderator temperature
      - b) Fuel temperature
      - c) Voids
      - d) Pressure
      - e) Redistribution
      - f) Power
    7. Shutdown margin
    8. Rod insertion limits
  - b. General and Specific Plant Operating Characteristics
    1. Normal plant transients
      - a. Rod worth curves
      - b. Xenon transients
      - c. Step load changes

2. Safety analysis
  - a. Review of minor accidents
  - b. Review of major accidents
- c. Plant Instrumentation and Control Systems
  1. Excore nuclear instrumentation
  2. Incore nuclear instrumentation
  3. Full length rod control
  4. Part length rod control
  5. Rod position indication
  6. Pressurizer pressure control
  7. Pressurizer level control
  8. Make-up water control
  9. Steam dump control
  10. Steam generator level control
  11. Reactor protection system
  12. Electro-hydraulic control
  13. All logics
- d. Normal and Abnormal Procedures and Emergency Instructions
  1. Engineered safety systems
  2. Site emergency plan
  3. Overall plant operating procedures
- e. Radiation Control and Safety
  1. Nuclear radiation
  2. Biological effects of radiation
  3. 10 CFR 20
  4. Radiation protection manual
  5. Radiation monitoring system
  6. Radiation procedures
- f. Technical Specifications
  1. Safety limits, reactor core
  2. Heatup and cooldown limits
  3. Core power distribution
  4. Discharge limits
- g. Chemistry
  1. Chemistry control
  2. Radiation chemistry
  3. Specifications and criteria

Annually a comprehensive examination will be given to each licensed operator. From the results of this exam an annual schedule will be formulated using the above topics as a guide. If any operator shows that he is clearly deficient in his performance, (would not have received a license by AEC standards) he will be removed from work requiring an operator's license and placed in an accelerated requalification program until the management is satisfied that he is again proficient. Any operator who clearly shows he would have passed an AEC exam on a particular section will be exempt from the lecture series on that section.

Certain licensed personnel, in the performance of their normal duties, may be very much involved with one or more of the areas covered in classroom

lectures. These individuals would not be required to attend the applicable classroom lectures. In some cases, these individuals may be called upon to conduct lectures in their areas of expertise i.e., Engineering Supervisor for Radiation Control and Safety lectures.

## 2. ON-SHIFT TRAINING

- a. All procedures and instructions will be covered in a group discussion and where applicable a walkthru of controls and instrumentation will be conducted by the shift foreman. This method will be particularly helpful to ensure each licensed operator will be kept updated in procedure, instruction, and design changes of the H. B. R. Plant. While reviewing the above mentioned subjects, the following will also be reviewed for that particular procedure or instruction:

1. Technical Specifications
2. Precautions, Limits, and Setpoints
3. Flow diagrams, Logics, and Functional Diagrams Where Applicable.

The staff personnel holding an AEC operator license will stand an average of four (4) hours watch in control room per month. At times various staff personnel holding operator licenses will be assigned to work in the control room during the normal course of their duties i.e., engineers performing flux map data acquisition. This time may be considered in the fulfillment of the 4-hour watch requirement.

During all plant operation a record will be kept of any major reactivity changes a licensed operator will perform. The following is a list of some reactivity changes CP&L considers as major:

1. Startup (pull rods to criticality)
2. Shutdown
3. Manual control of S/G's during startup & shutdown
4. Operation of EHC during startup
5. Boration
6. Dilution
7. Operation of manipulator crane during refueling
8. Any power changes in manual rod control.

CP&L does not mean that the above list is complete. If credit is taken for any other major reactivity change other than those listed above, they will be documented fully.

## PHASE II RETRAINING OFF-SITE (SIMULATOR TRAINING)

This phase will be five days per two years for each licensed operator. The course will be held at the CP&L Training Center near Raleigh, N. C. During the five days the operator will gain much "Hands on" practical experience that is very difficult to get at the H. B. R. Plant. The following is an outline of the operations to be performed on the CP&L Nuclear Power Plant Training Simulator.

DAY 1

- a. Introduction to 5-day retraining course
- b. Take plant from a cold shutdown condition to a hot shutdown condition
- c. Take plant from a hot shutdown condition to minimum power

DAY 2

- a. Power operations
  - 1. Various ramp rates
  - 2. Escalation and de-escalation in power by various step changes
- b. Take plant from full power to hot shutdown condition
- c. Take plant from hot shutdown condition to cold shutdown condition

DAY 3

- a. Take plant from cold shutdown condition to minimum power with mini malfunctions
- b. Take plant from minimum power to cold shutdown conditions with mini malfunctions

DAY 4

- a. At power operations with mini malfunctions
- b. At power operations with major malfunctions

DAY 5

- a. Major malfunctions at all conditions
- \*b. Licensees time

\*It is believed that during an operator's time performing his tasks, as a licensed operator, he will see things that he's not quite sure why something happened the way it did. Therefore, it is intended to allow him 2-4 hours on the last day at the simulator to request certain transients or casualties. By doing this and being able to analyze the results he will become a much better and safer operator.

The five-day simulator course will be five (5) consecutive days, totaling 40 hours of instruction, for three (3) licensed operators. During all operations they will function as a shift. They will also rotate stations so that they will perform all operations at all stations.

PHASE III OPERATOR EVALUATION

At the completion of Phase I and Phase II each licensed operator will take an USAEC type comprehensive written examination. This examination will be

written and graded by the instructors at the CP&L Training Center. Periodically an instructor from the CP&L Training Center will conduct oral examinations on 1 or 2 licensed operators.

Attached is the documentation that will be used to keep a personal file on each licensed operator. The following is a list of records to be kept.

1. Startup, Shutdown, and Reactivity Changes
2. Formal Lecture Attendance
3. On-shift Training
4. Grade Sheet for Periodic Examinations
5. Evaluation Sheets for Simulator Training
6. Evaluation Sheets for Written Comprehensive Examinations
7. Evaluation Sheets for Oral Examination

In a master file will be copies of all periodic examinations and a copy of all comprehensive examinations given.