

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION II 101 MARIETTA STREET, N.W. ATLANTA, GEORGIA 30323

# NOV 2 0 1984

Report No.: 50-261/84-42

Licensee: Carclina Power and Light Company 411 Fayetteville Street Raleigh, NC 27602

Docket No.: 50-261

License No.: DPR-23

Facility Name: H. B. Robinson

Inspection Conducted: October 29 - November 2, 1984

Inspector: ins Approved by: R. Jenkins. Section Chief Division of Reactor Projects

Date Date Signed

SUMMARY

Scope: This special, unannounced inspection involved 26 inspector-hours on site during regular hours inspecting: Radiation Protection Program; Internal and External Exposure Control; Posting, Labeling, and Control of Radiological Controlled Areas; Organization and Management Controls; ALARA Program; and Previous Inspector Identified Items.

Results: No violations or deviations were identified.

8412280335 841120 PDR ADOCK 050C0261 Q PDR

### **REPORT DETAILS**

#### 1. Persons Contacted

Licensee Employees Contacted

R. E. Morgan, General Plant Manager

- R. M. Smith, Manager, E and RC
- A. R. Wallace, Onsite Nuclear Safety
- J. J. Young, Manager, QA/QC
- C. Wright, Regulatory Compliance
- J. C. Sturdavant, Regulatory Compliance
- D. C. Stadler, Director Regulatory Compliance
- J. M. Culey, Technical Support
- J. F. Page, Technical Support W. Farmer, Technical Support
- R. Denny, Radiation Control Supervisor
- R. E. Shirk, Operations/Engineering

Other licensee employees contacted included three construction craftsmen, two technicians, two security force members, and two office personnel.

NRC Resident Inspector

H. Krug

Exit Interview 2.

> The inspection scope and findings were summarized on November 2, 1984, with those persons indicated in paragraph 1 above.

- 3. Licensee Action on Previous Enforcement Matters
  - a. (Closed) UNR (50-216/84-10-05) Posting of Radiation Areas Within the Radiological Controlled Area (RCA). The inspector reviewed Revision 5 to the licensee's procedure, HP-001, Radiation Control Area Surveillance Program, dated July 26, 1984, which requires posting of all radiation areas inside the RCA. The inspector also observed the postings of radiation areas within the RCA and concluded that the licensee's program for posting of radiation areas was adequate.
  - b. (Closed) VIO (50-261/84-17-01) Failure of Health Physics Technician to Ensure use of Respiratory Equipment as Required by the Radiation Work Permit. The inspector reviewed and verified the corrective actions as stated in CP&L's letters of August 10 and 31, 1984.

- c. (Closed) VIO (50-261/84-17-02) Failure to Take A Representative Air Sample in Steam Generator Bowl. The inspector reviewed and verified the corrective actions as stated in CP&L's letters of August 10 and 31, 1984.
- d. (Closed) VIO (50-201/84-17-03) Failure to Calibrate All Ranges of RMS-32A and B. The inspector reviewed and verified the corrective actions as stated in CP&L's letters of August 10 and 31, 1984.
- e. (Closed) VIO (50-261/84-14-03) Failure to Perform an Adequate Survey of Material Being Passed Outside the RCA. The inspector reviewed and verified the corrective actions as stated in CP&L's letter of June 21, 1984.
- Organizations and Management Controls (83722)

Technical Specification 6.2 describes the licensee's organization. Detailed responsibilities and lines of authority are specified in plant procedure AP-27, Plant Organization and Responsibilities.

The inspector reviewed changes made to the licensee's organization, staffing levels and lines of authority as they related to radiation protection, radioactive material control and plant chemistry, and verified that the changes had not adversely affected the licensee's ability to control radiation exposures, radioactive material or plant chemistry.

No violations or deviations were identified.

5. Training and Qualification (83723)

Technical Specification 6.3 requires that each member of the facility staff meet or exceed the minimum qualification of ANSI N18.1-1971 for comparable positions, except for the Manager of E&RC (Radiation Protection Manager) who shall meet or exceed the qualification of Regulatory Guide 1.8, September 1975.

Paragraph 4.5.2 of ANSI N18.1 states that technicians in responsible positions shall have a minimum of two years of working experience in their specialty. The inspector reviewed the experience and training records for selected Health Physics Technicians (RC&T) currently working at the station. The inspector discussed radiological controls for specific jobs with RC&T technicians. The inspector observed RC&T technicians during implementation of radiological controls for selected activities.

Regulatory Guide 1.8, September 1975 requires the Radiation Protection manager to have a bachelor's degree or the equivalent in a science or engineering subject, including some formal training in radiation protection and at least five years of professional experience in applied radiation protection. At least three years of the professional experience should be in applied radiation protection work in a nuclear facility dealing with radiological problems similar to those encountered in nuclear power plants. The inspector reviewed the qualifications of the newly appointed Manager of E&RC and discussed the qualifications with licensee management and the individual.

No violations or deviations were identified.

6. External Exposure Control and Personal Dosimetry (83724)

10 CFR 20.101 specifies the applicable radiation dose standards. The inspector reviewed the computer printouts (NRC Form 5 equivalent) for the period January to September 1984 and verified that the radiation doses recorded for plant personnel were well within the quarterly limits of 20.101(a).

10 CFR 20.101(b)(3) requires the licensee to determine an individual's accumulated occupational dose to the whole body on an NRC Form 4 or equivalent record prior to permitting the individual to exceed the limits of 20.101(a). The inspector reviewed selected occupational exposure histories for individuals who exceeded the values in 10 CFR 20.101(a). The exposure histories were being completed and maintained as required by 10 CFR 20.102.

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and require the use of such equipment.

The inspector reviewed the following plant procedures which established the licensee's program for personnel monitoring of external dose in accordance with 10 CFR 20.202:

DP-001 Dosimetry Issuance, DP-002 Sp. Dosimetry Issuance, DP-003 Exposure Tracking, DP-004 Personnel Exp. Investigation, DP-005 TLD Badge Exchange, DP-006 Updating Dose Records and DP-007 RIMS TLD Interfare.

During tours of the plant, the inspector observed workers wearing appropriate personnel monitoring devices.

Technical Specification 6.5.1.1 requires the licensee to have written radiation protection procedures, including the use of radiation work permits. The inspector reviewed plant procedure HPP-006, Special Radiation Work Permits which provided detailed instructions on the preparation and processing of Radiation Work Permits (RWPs).

The inspector reviewed selected active RWPs for appropriateness of the radiation protection requirements based on work scope, location, and conditions. During tours of the plant, the inspector observed the adherence of plant workers to the RWP requirements and discussed the RWP requirements with plant workers at the job site.

10 CFR 20.408(b) requires that when an individual terminates employment with a licensee, or an individual assigned to work in a licensee's facility but not employed by the licensee completes the work assignment, the licensee furnish the NRC a report of the individual's exposure to radiation and radioactive material incurred during the period of employment or work assignment, containing information recorded by the licensee pursuant to 20.401(a) and 20.108. 20.409 requires that the licensee send a report to the individual if the report is sent to the NRC in accordance with 20.408. 20.401(a) requires each licensee to maintain records showing the radiation exposure of all individuals for whom personnel monitoring is required under 20.202 of the regulations. Such records shall be kept on Form NRC-5 or equivalent.

The inspector discussed the reporting requirements with licensee representatives and reviewed selected individual exposure records maintained by the licensee and copies of exposure reports sent to the NRC and to individuals during the period January to September 1984.

10 CFR 20.402, 20.403 and 20.405 establish reporting requirements in the event of the loss or theft of licensed material, personnel overexposures, excessive concentrations and radiation levels and excessive releases of radioactive material.

The inspector discussed the reporting requirements of 10 CFR 20.402, 20.403 and 20.405 with licensee representatives and determined that the licensee had not had an event which required reporting in accordance with these sections of 10 CFR 20.

10 CFR 20.203 specifies the posting, labeling and control requirements for radiation areas, high radiation areas, airborne radioactivity areas and radioactive material. Additional requirements for control of high radiation areas are contained in Technical Specification 6.13.

Plant procedure HPP-001, Radiation Control Area Surveillance program contains additional information on the posting and control of radiological areas.

During tours of the plant, the inspector reviewed the licensee's posting and control of radiation areas, high radiation areas, airborne radioactivity areas, contamination areas, radioactive material areas and the labeling of radioactive material.

10 CFR 19.11 requires that each licensee post current copies of 10 CFR 19 and 10 CFR 20 or if posting of the documents is not practicable, the licensee may post a notice which describes the document and states where it may be examined. 10 CFR 19.11 further requires that copies of any Notice of Violation involving radiological working conditions be conspicuously posted within two working days after receipt of the documents from the Commission. The inspector observed the posting of notices required by 10 CFR 19.11 during tours of the plant.

#### 7. Internal Exposure Control (83725)

10 CFR 20.103(a) establishes the limits for exposure of individuals to concentrations of radioactive materials in air in restricted areas. This section also requires that suitable measurements of concentrations of radioactive materials in air be performed to detect and evaluate the airborne radioactivity in restricted areas and that appropriate bioassays be performed to detect and assess individual intakes of radioactivity.

The inspector reviewed selected results of general in-plant air samples taken during the period September to October 1984 and the results of air samples taken to support work authorized by specific radiation work permits.

The inspector reviewed selected results of bioassays (whole body counts/ urinalyses) and the licensee's assessment of individual intakes of radioactive material performed during the period January to September 1984.

10 CFR 20.103(b) requires the licensee to use process or other engineering controls, to the extent practicable, to limit concentrations of radioactive material in air to levels below that specified in Part 20, Appendix B, Table I, Column 1 or limit concentrations, when averaged over the number of hours in any week during which individuals are in the area, to less than 25 percent of the specified concentrations.

The use of process and engineering controls to limit airborne radioactivity concentrations in the plant was discussed with licensee representatives and the use of such controls was observed during tours of the plant.

The inspector reviewed the following plant procedures which established the licensee's internal exposure control and assessment program and verified that the procedures were consistent with regulations, Technical Specifications and good health physics practices:

## HPP-101, 102, 103 and 105

No violations or deviations were identified.

8. Surveys, Monitoring, and Control of Radioactive Material (83726)

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

The inspector reviewed the tomowing plant procedures which established the licensee's radiological survey and monitoring program and verified that the procedures were consistent with regulations, Technical Specifications and good health physics practices:

#### HPP-003 and 004

The inspector reviewed selected records of radiation and contamination surveys performed during the period of August to October 1984 and discussed the survey results with licensee representatives:

During tours of the plant the inspector observed health physics technicians performing radiation and contamination surveys.

The inspector observed personnel using the personnel frisker (RM-14/RM-16 with HP-210 pancake probe) to perform contamination surveys of themselves prior to exiting the controlled area.

No violations or deviations were identified.

9. ALARA Program (83728)

10 CFR 20.1c states that persons engaged in activities under licenses issued by the NRC should make every reasonable effort to maintain radiation exposure as low as reacchably achievable (ALARA). The recommended elements of an ALARA program are contained in Regulatory Guide 8.8, Information Relevant to Ensuring that Occupational Radiation Exposure at Nuclear Power Stations will be ALARA, and Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Radiation Exposure ALARA.

The inspector reviewed plant procedure ERC-002, ALARA Program which establishes the program for keeping occupational exposures ALARA and discussed the administrative aspects of the program with licensee representatives.

The inspector discussed the ALARA goals and objectives for the current year with licensee representatives and reviewed the man-rem estimates and results for the current year.

As of October 20, 1984, the actual collective exposure for calendar year 1984 was 1195 man-rem which represented 56% of the estimated exposure for the year.

No violations or deviations were identified.

10. Potential Contamination Of Non-Radioactive Systems (92706)

On October 30, 1984, the inspector observed that the "B" Auxiliary Steam Boiler System was posted with signs stating "Caution, Internal Contamination". In discussion with the licensee the inspector determined that this system was previously contaminated due to minor steam generator tube leaks. The inspector reviewed radiological survey results from February to October 1984 which revealed external dose rates of the "B" Auxiliary Boiler to be 0.1 mr/hr to 1.0 mr/hr. Also, the inspector reviewed a liquid sample analysis conducted during August 1984 which revealed internal radioactivity to be  $\leq 2.02 \times 10^6 \mu$ Ci/ml. The inspector concluded that the sample analysis and frequency of surveys performed was adequate to control and protect workers in the vicinity of the "B" Auxiliary Steam Boiler. Additionally, the inspector reviewed a Radiation Work Permit (RWP) No. 2601 issued on June 12, 1984, to control radiography test (RT) of the "B" Auxiliary Steam Boiler and related systems. The highest dose rates noted in the surveys with the radiography source exposed was a maximum 50 mr/hr. After review of personnel exposure results and radiological survey results the inspector stated that the licensee controls for RT appeared to be adequate. No violations or deviations were identified.

- 11. Previous Inspector Follow-Up Items (92701)
  - a (Closed) IFI (50-261/81-07-06) Radiation Control Personnel Formal Retraining. The inspector reviewed a training instruction titled "Development Program for Environmental and Radiation Control Professional Personnel". This program will establish and provide the means for broading the knowledge and maintaining the technical competence of Environmental and Radiation Control (E&RC) professional personnel. The inspector had no further questions.
  - b. (Closed) IFI (50-261/84-10-02) Ensure Qualified Instructors Proctor General Employee Training (GET). The inspector reviewed the licensee's corrective action to preclude further events of this type which included testing of future instructors, review of resumes, and classroom evaluation to ensure adequate qualifications of G.E.T. Instructors. The inspector had no further questions.
  - e. (Closed) IFI (50-261/84-19-03) Proper Actions to Take When a Pocket Dosimeter is Found Off-Scaled. The inspector reviewed the licensee's corrective action which included retraining of technicians on procedural requirements when an off-scale dosimeter was found. Additionally, the licensee revised Dosimetry Procedure DP-004, Section 10.5, which addresses Investigation of Off-Scale, Damaged or Lost Self Reading Pocket Dosimeters. The inspector concluded that this was adequate and had no further questions.
  - d. (Closed) I.E. Information Notice (50-261/84-75) Calibration Problems of Eberline Instrument Model 6112B Analog Teletector. The inspector reviewed the licensee's calibration procedure for the Eberline Instrument Model 6112B and an internal memorandum which addresses the Information Notice No. 84-75. The inspector concluded after his review that H. B. Robinson's calibration program for the Model 6112B Teletector was adequate and had no further questions.

13