



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CAROLINA POWER AND LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 45
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Carolina Power and Light Company (the licensee) dated March 6 and March 15, 1979 comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-23 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 45, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: December 5, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 45

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment Number and contain vertical lines indicating the area of change.

Remove

ii
3.8-3

4.1-10
4.12-1
4.12-2
4.12-3

Insert

ii
3.8-3
3.15-1
3.15-2
4.1-10
4.12-1
4.12-2
4.12-3
4.15-1
4.15-2
4.15-3

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.10.5	Deleted	
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3.10.7	Power Ramp Rate Limits	3.10-9
3.10.8	Required Shutdown Margins	3.10-9
3.11	Movable In-Core Instrumentation	3.11-1
3.12	Seismic Shutdown	3.12-1
3.13	Shock Suppressors (Snubbers)	3.13-1
3.14	Fire Protection System	3.14-1
3.14.1	Fire Detection Instrumentation	3.14-1
3.14.2	Fire Suppression Water System	3.14-1
3.14.3	CO ₂ Fire Protection System	3.14-2
3.14.4	Fire Hose Stations	3.14-2a
3.14.5	Fire Barrier Penetration Fire Seals	3.14-3
3.15	Control Room Filter System	3.15-1
4.0	Surveillance Requirements	4.1-1
4.1	Operational Safety Review	4.1-1
4.2	Primary System Surveillance	4.2-1
4.3	Primary System Testing Following Opening	4.3-1
4.4	Containment Tests	4.4-1
4.4.1	Operational Leakage Rate Tests	4.4-1
4.4.2	Isolation Valve Tests	4.4-4
4.4.3	Post Accident Recirculation Heat Removal System	4.4-4
4.4.4	Operational Surveillance Program	4.4-5
4.5	Emergency Core Cooling, Containment Cooling and Iodine Removal Systems Tests	4.5-1
4.5.1	System Tests	4.5-1
4.5.2	Component Tests	4.5-2
4.6	Emergency Power System Periodic Tests	4.6-1
4.6.1	Diesel Generators	4.6-1
4.6.2	Diesel Fuel Tanks	4.6-2
4.6.3	Station Batteries	4.6-2
4.7	Secondary Steam and Power Conversion System	4.7-1
4.8	Auxiliary Feedwater System	4.8-1
4.9	Reactivity Anomalies	4.9-1
4.10	Radioactive Effluents	4.10-1
4.11	Reactor Core	4.11-1
4.12	Refueling Filter Systems	4.12-1
4.13	Shock Suppressors (Snubbers)	4.13-1
4.14	Fire Protection System	4.14-1
4.15	Control Room Filter System	4.15-1
5.0	Design Features	5.1-1
5.1	Site	5.1-1
5.2	Containment	5.2-1
5.2.1	Reactor Containment	5.2-1
5.2.2	Penetrations	5.2-1
5.2.3	Containment Systems	5.2-2
5.3	Reactor	5.3-1
5.3.1	Reactor Core	5.3-1
5.3.2	Reactor Coolant System	5.3-2
5.4	Fuel Storage	5.4-1
5.5	Seismic Design	5.5-1

- j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.
- k. The reactor shall be subcritical as required by 3.10.8.3 with $T_{avg} \leq 140^{\circ}\text{F}$.

3.8.2 The Spent Fuel Building filter system and the Containment Purge filter system shall satisfy the following conditions:

- a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal adsorber banks shall show >99 percent DOP removal and >99 percent halogenated hydrocarbon removal.
- b. Verification by way of a laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show >90 percent radioactive methyl iodine removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that >70 percent relative humidity air is required.
- c. All filter system fans shall be shown to operate within +10% of design flow.
- d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be <70 percent.
- e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

3.15 CONTROL ROOM FILTER SYSTEM

Applicability

Applies to the Control Room filter system which is required for the safe operation of the plant. This system incorporates both HEPA filters and a charcoal adsorber bank.

Objective

To provide limiting conditions for operation which ensure the operability of the filter system during plant operation, such that normal operation or accidental plant conditions requiring operation of the system will not result in consequences more severe than those previously analyzed.

Specification

- 3.15.1 During all modes of operation, except cold shutdown, the Control Room filter system shall be capable of performing its intended function in the required manner, except as described below:
- a. If the system is determined to be inoperable, it shall be returned to operable status within seven days, or in lieu of any other report, prepare a Special Report which shall be submitted to the Commission within the next 14 days. This report shall outline the cause of the inoperability, the corrective actions taken, and the plans and schedule for restoring the system to an operable status.
- 3.15.2 If the system is determined to be inoperable while the reactor is in cold shutdown, the system shall be made operable prior to reactor startup.

Basis

Operability of the Control Room filter system ensures that the Control Room will remain habitable during an accidental atmospheric radiation

release to the extent that none of the occupants would receive a personnel radiation exposure in excess of 10 percent of the suggested limits in 10CFR100⁽¹⁾. Because the system's protection is required only during low probability events, the system may be out of service for 7 days for repairs. Following this period, a Special Report detailing the status of the system will be submitted to the Commission. Since reactor startup should not commence without this system in service, the specification prohibits startup with the system inoperable.

(1) FSAR Section 7.7.1

TABLE 4.1-3 (Continued)

	<u>Check</u>	<u>Frequency</u>	<u>Maximum Time Between Tests</u>	
13.	Turbine Inspection	Visual, Magnaflux and Die Penetrant	Every five years	6 years
14.	Fans and Associated Char- coal and Absolute Filters for Con- trol Room and Residual Heat Removal Compartments (HVE-19, HVE-5a and 5b respec- tively)	Fans functioning. Laboratory tests on charcoal must show > 99% iodine removal. In-place test must show > 99% removal of polydispersed DOP particles by the HEPA filters and Freon by the charcoal filters.	Once per operating cycle.	NA
15.	Isolation Seal Water System	Functioning	Each refueling shutdown	NA

*NA - Not applicable

4.12 REFUELING FILTER SYSTEMS

Applicability

Applies to fans and associated charcoal adsorber banks and HEPA filters for Spent Fuel Building filter system and Containment Purge filter system.

Objective

To verify that the refueling filter systems will adequately remove radioactivity that may be released accidentally into the Spent Fuel Building and Containment Building.

Specification

- 4.12.1 At least once per operating cycle, the following conditions shall be demonstrated:
- a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at system design flow rate.
 - b. Fan capacity shall be within $\pm 10\%$ of the design flow.
- 4.12.2
- a. The tests of Specification 3.8.2.a for the refueling filter systems shall be performed initially, and at least once per operating cycle prior to each refueling outage operation or after every 720 hours of system operation whichever occurs first.
 - b. The tests and sample analysis of Specification 3.8.2.b for the refueling filter systems shall be performed initially, at least once per operating cycle prior to

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

- c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.
- d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.
- e. A uniform air distribution within $\pm 20\%$ across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined at least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

with an adsorbent qualified according to Table 5.1 of ANSI/ASME N509-1976. The replacement tray for the adsorbent tray removed for the test should meet the same adsorbent quality. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N101.1. Any HEPA filters found defective shall be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52.

The Containment Purge filter system is normally run continuously during the entire refueling outage to provide cooling and ventilation and periodically during plant operation to reduce airborne radioactivity leaks inside the containment. Operation time of the Containment Purge filter system after the fuel handling operation is completed should not be added to the operation time during fuel handling operations for determination of testing and surveillance requirements given in these specifications.

If significant painting, fire, or chemical release occurs such that the HEPA filter or charcoal adsorbent could become contaminated from the fumes, chemicals, or foreign material, the same laboratory tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.

The relative humidity of the Containment atmosphere and air downstream of the heaters in the Spent Fuel Building filter system shall be monitored at least hourly to assure that the R.H. is less than 70 percent during fuel handling and Containment Purge filter system operation.

4.15 CONTROL ROOM FILTER SYSTEM

Applicability

Applies to the fan, associated charcoal adsorber bank, and HEPA filters of the Control Room filter system.

Objective

To verify that the Control Room filter system will adequately remove radioactivity from the incoming ambient air should there be an accidental radiation release to the atmosphere.

Specification

- 4.15.1 At least once per operating cycle or after 720 hours of system operation, whichever comes first, and (1) after structural modifications on the HEPA filter or charcoal adsorber housing which would adversely affect the air flow distribution and (2) following significant painting, fire, or chemical release in any ventilation zone communicating with the system, the following tests shall be performed:
- a. Verify that the system flow rate is equal to the design flow rate \pm 10 percent.
 - b. Verify that the charcoal adsorbers remove \geq 99 percent of a halogenated hydrocarbon refrigerant test gas when they are tested in-place while the ventilation system is operating at a flow equal to the design flow \pm 10 percent.
 - c. Verify that the HEPA filter banks remove \geq 99 percent of the DOP when they are tested in-place in accordance with ANSI N101.1 (1972) while operating the ventilation system at a flow equal to the design flow \pm 10 percent.

d. Verify by way of a laboratory test that the system's carbon demonstrates a methyl iodine removal efficiency of ≥ 90 percent. The test shall be conducted in accordance with ANSI N509-1976, Table 5-1, Test 5b. The required carbon samples may be obtained by the following methods:

1. One sample obtained from a test canister designed to ANSI N509-1976. The sample must be at least two inches in diameter and with a length equal to or greater than the thickness of the cell's adsorber bed.
2. Two samples obtained by emptying an adsorber cell and mixing the carbon thoroughly. The samples must be at least two inches in diameter and with a length equal to or greater than the thickness of the cell's adsorber bed.

4.15.2 At least once per operating cycle, the following test shall be performed:

- a. Verify that the pressure drop across the combined HEPA filters and charcoal adsorber bank is < 6 inches Water Gauge at system design flow rate ± 10 percent.
- b. Verify that on a containment isolation test signal, the system automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

4.15.3 After each complete or partial replacement of the carbon adsorber bank, perform the tests under Specification 4.15.1b.

4.15.4 After each complete or partial replacement of the HEPA filter bank, perform the tests under Specification 4.15.1c.

4.15.5 The associated fan unit in the Control Room filter system shall be verified operable monthly.

Basis

Determination that the system is operating at design flow \pm 10 percent indicates that the fan is operating at or near the design point on its operating curve. Operation of the fan at flows significantly different from the design flow will change the removal efficiency of the HEPA filters and carbon adsorbers.

The frequency of in-place testing and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. Any HEPA filters found defective shall be replaced with the filters qualified pursuant to Regulatory Position C.3.d of NRC Regulatory Guide 1.52. If the carbon fails to pass the laboratory test, all adsorbent in the system shall be replaced with an adsorber qualified according to Table 5.1 of ANSI N509-1976.

If significant painting, fire, or chemical release occurs such that the HEPA filters or carbon adsorbers could become contaminated from the fumes, chemicals, or foreign material, the same in-place testing and sample analysis shall be performed as required for operational use. The determination of whether the incident is significant enough to warrant the testing shall be made by the Shift Foreman on duty. Knowledgeable staff members should be consulted prior to making this determination.

A pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate \pm 10 percent will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter.