



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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 74
License No. DPR-71

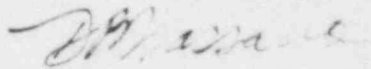
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company (the licensee) dated May 7, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules 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.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-71 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 74, 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



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 10, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 74

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Revise the Appendix A Technical Specifications as follows:

Remove

VIII

3/4 7-9 through 3/4 7-28

B 3/4 7-2 through B 3/4 7-5

Insert

VIII

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PLANT SYSTEMS3/4.7.5 SNUBBERSLIMITING CONDITION FOR OPERATION

3.7.5 All hydraulic and mechanical snubbers shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3. OPERATIONAL CONDITIONS 4 and 5 for snubbers located on systems required OPERABLE in those OPERATIONAL CONDITIONS.

ACTION:

With one or more snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.5.g on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.5 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Inspection Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these groups (inaccessible and accessible) may be inspected independently according to the schedule below. The first inservice visual inspection of each type of snubber shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all hydraulic and mechanical snubbers. If all snubbers of each type on any system are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection of that system shall be performed at the first refueling outage. Otherwise, subsequent visual inspections of a given system shall be performed in accordance with the following schedule:

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

<u>No. of Inoperable Snubbers of Each Type on Any System per Inspection Period</u>	<u>Subsequent Visual Inspection Period *#</u>
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3, 4	124 days ± 25%
5, 6, 7	62 days ± 25%
8 or more	31 days ± 25%

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify that: (1) there are no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or support structure are secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type on that system that may be generically susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Specifications 4.7.5.f. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers. For those snubbers common to more than one system, the OPERABILITY of such snubbers shall be considered in assessing the surveillance schedule for each of the related systems.

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event. In addition to satisfying the visual inspection criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

* The inspection interval for each type of snubber on a given system shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lengthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found on that system.

The provisions of Specification 4.0.2 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test period shall be implemented:

- 1) At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meeting the functional test acceptance criteria of Specification 4.7.5.f, an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or
- 2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7.5-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.5.f. The cumulative number of snubbers of a type tested is denoted by "N." At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7.5-1. If at any time the point plotted falls in the "Reject" region all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during a day of equipment failure are retested.
- 3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, $1 + C/2$, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation $N = 55(1 + C/2)$. Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type have been tested.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at the time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

- 1) Activation (restraining action) is achieved within the specified range in both tension and compression;
- 2) Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;
- 3) Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and
- 4) For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

g. Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the operable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the operability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

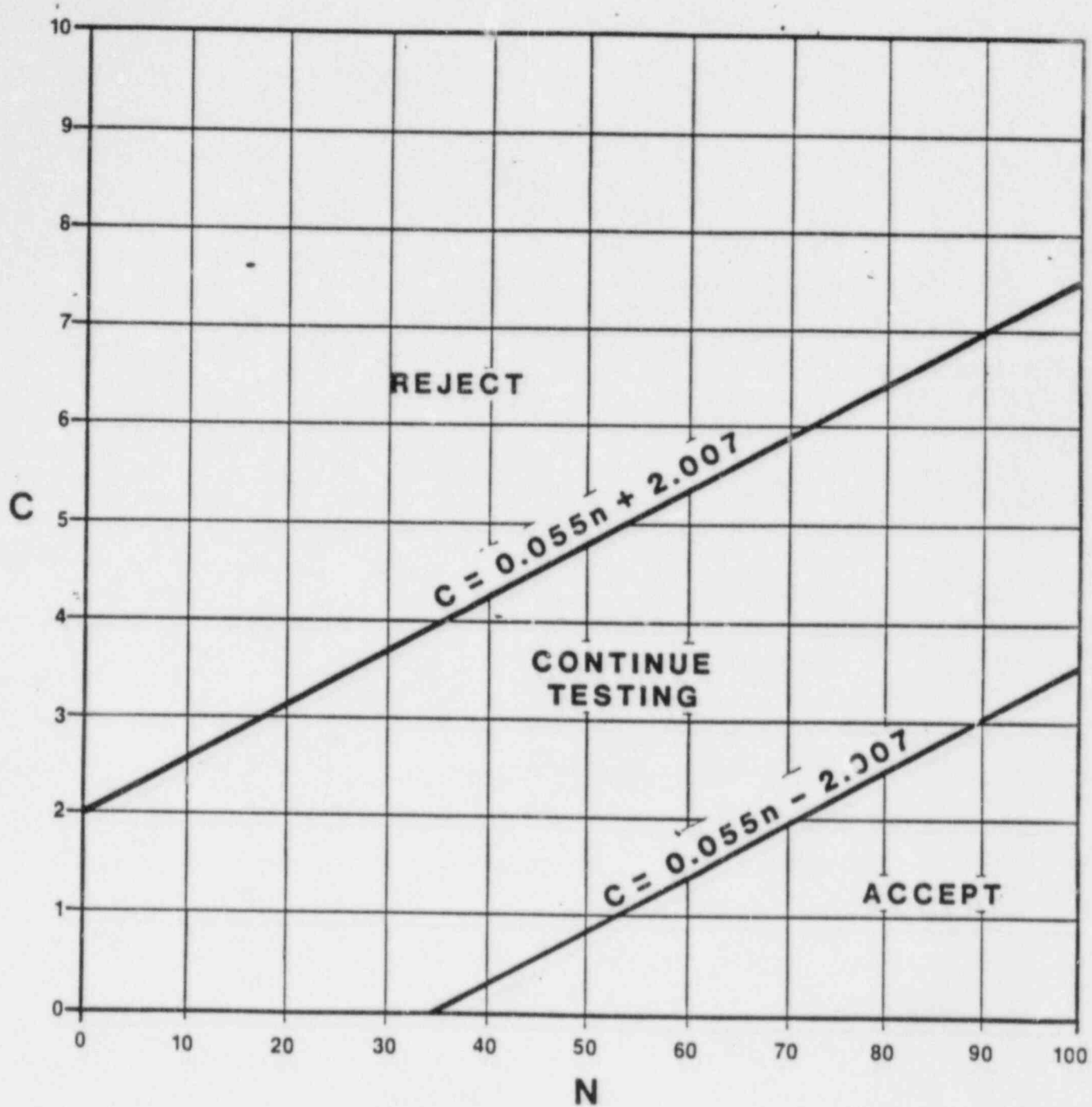
If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in Specification 4.7.5.e for snubbers not meeting the functional test acceptance criteria.

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

i. Snubber Seal Replacement Program

The service life of hydraulic and mechanical snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.2.



Amendment No. 74

BRUNSWICK - UNIT 1

Carolina
Power & Light Company

Sample Plan 2)

FOR SNUBBER FUNCTIONAL TEST

Figure 4.7.5-1

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PLANT SYSTEMS3/4.7.6 SEALED SOURCE CONTAMINATIONLIMITING CONDITION FOR OPERATION

3.7.6 Each sealed source containing radioactive material in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:

- a. Either decontaminated and repaired, or
- b. Disposed of in accordance with Commission Regulations.

The Provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.6.2 Test Frequencies - Each category of sealed sources (excluding start-up sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive material:

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3),
and
 2. In any form other than gas.
- b. Stored sources not in use - Each sealed and fission detector source shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources transferred without a certificate indicating the last test date shall be tested prior to being placed into use.
- c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux and or installed in the core following repair or maintenance to the source.
- 4.7.6.3 Reports - A Special Report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination.

PLANT SYSTEMS3/4.7.7 FIRE SUPPRESSION SYSTEMSFIRE SUPPRESSION WATER SYSTEMLIMITING CONDITION FOR OPERATION

- 3.7.7.1 The fire suppression water system shall be OPERABLE with:
- a. Two OPERABLE fire pumps, one motor-driven and one diesel-driven, each with a capacity of 2000 gpm, with their discharges aligned to the fire suppression yard main,
 - b. The fire protection water tank, with a minimum contained volume of 200,000 gallons, and the demineralized water tank, with a minimum contained volume of 90,000 gallons, and
 - c. An OPERABLE flow path capable of taking suction from each of the water supplies and transferring the water through the yard main and distribution piping with OPERABLE sectionalizing control or isolation valves to, but not including, the yard hydrant curb valves and the first valve ahead of each sprinkler and hose standpipe system required to be OPERABLE per Specifications 3.7.7.2 and 3.7.7.4.

APPLICABILITY: At all times.

ACTION:

- a. With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- b. With the fire suppression water system otherwise inoperable:
 1. Establish a backup fire suppression water system within 24 hours, or
 2. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, and
 3. In lieu of any other report required by Specification 6.9.1, submit a Special Report in accordance with Specification 6.9.2;
 - a) By telephone within 24 hours,
 - b) Confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event, and
 - c) In writing within 14 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

- 4.7.7.1.1 The fire suppression water system shall be demonstrated OPERABLE:
- a. At least once per 7 days by verifying the contained water supply volume is at least the minimum specified.
 - b. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 20 minutes.
 - c. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path is in its correct position.
 - d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
 - e. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
 1. Verifying that each pump develops at least 2000 gpm at a system head of 125 psig,
 2. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 3. Verifying that each fire pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 125 psig.
 - f. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

4.7.7.1.2 The fire pump diesel engine shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying:
 1. The fuel storage tank contains at least 500 gallons of fuel, and
 2. The diesel starts from ambient conditions and operates for at least 20 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM-D975-74 when checked for viscosity, water, and sediment.
- c. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service, and
 2. Verifying the diesel starts from ambient conditions on the auto-start signal and operates for greater than or equal to 20 minutes while loaded with the fire pump.

4.7.7.1.3 The fire pump diesel starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each battery is above the plates, and
 2. The overall battery voltage is greater than or equal to 24 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the battery.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. The battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

PLANT SYSTEMSSPRAY AND/OR SPRINKLER SYSTEMSLIMITING CONDITION FOR OPERATION

3.7.7.2 The following spray and/or sprinkler systems shall be OPERABLE:

- a. Diesel Generator #1 Preaction System - Diesel Generator Building
- b. Diesel Generator #2 Preaction System - Diesel Generator Building
- c. Diesel Generator #3 Preaction System - Diesel Generator Building
- d. Diesel Generator #4 Preaction System - Diesel Generator Building
- e. South Cable Spread Area Sprinkler System - Diesel Generator Building
- f. North Cable Spread Area Sprinkler System - Diesel Generator Building
- g. Two Standby Gas Treatment Train 1A Deluge Systems - Reactor Building #1.
- h. Two Standby Gas Treatment Train 1B Deluge Systems - Reactor Building #1.
- i. Area Sprinkler System - Reactor Building #1.
- j. Service Water Pump Area Sprinkler System - Service Water Building
- k. Service Water Cable Spread Area Sprinkler System - Service Water Building
- l. Drumming Room Sprinkler System - Radwaste Building
- m. Makeup Water Treatment Area Sprinkler System - Makeup Water Treatment Building

APPLICABILITY: Whenever equipment in the areas protected by the spray and/or sprinkler systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required spray and/or sprinkler systems inoperable, establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s) within 1 hour; restore the system to OPERABLE status within 14 days or; in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

4.7.7.2 Each of the above required spray and/or sprinkler systems shall be demonstrated OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- b. At least once per 18 months:
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated actuation signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. By inspection of the spray headers to verify their integrity, and
 3. By inspection of each deluge nozzle to verify no blockage.

PLANT SYSTEMSHIGH PRESSURE CO₂ SYSTEMSLIMITING CONDITION FOR OPERATION

3.7.7.3 The following high pressure CO₂ systems shall be OPERABLE with a minimum contained weight of 67.5 lbs. of CO₂ in each cylinder of the inservice bank.

- a. Unit No. 1 HPCI CO₂ System - Unit No. 1 Reactor Building.
- b. Control Building CO₂ System - Control Building.

APPLICABILITY: Whenever equipment in the area protected by the high pressure CO₂ systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required high pressure CO₂ systems inoperable, establish backup fire suppression equipment for the unprotected area(s) within 1 hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.3 Each of the above required high pressure CO₂ systems shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying that the high pressure CO₂ cylinders contain at least the minimum specified weight of CO₂.
- b. At least once per 18 months by verifying:
 1. The system control heads and associated ventilation dampers actuate manually and automatically, as appropriate, upon receipt of a simulated actuation signal, and
 2. Performance of a flow test through flooding system headers and nozzles and hose reel system horns to assure no blockage.

PLANT SYSTEMSFIRE HOSE STATIONSLIMITING CONDITIONS FOR OPERATION

3.7.7.4 The fire hose stations shown in Table 3.7.7.4-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the areas protected by the fire hose stations is required to be OPERABLE.

ACTION:

- a. With one or more of the fire hose stations shown in Table 3.7.7.4-1 inoperable, within one hour:
 1. Provide an alternate means of fire suppression for the unprotected area(s) or
 2. Route an additional equivalent capacity fire hose to the unprotected area(s) from an OPERABLE hose station.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.4 Each of the fire hose stations shown in Table 3.7.7.4-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by visual inspection of the station to assure all required equipment is at the station.
- b. At least once per 18 months by:
 1. Removing the hose for inspection and re-racking, and
 2. Replacement of all degraded gaskets in couplings.
- c. At least once per 3 years by:
 1. Partially opening each hose station valve to verify valve OPERABILITY and no flow blockage, and
 2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

TABLE 3.7.7.4-1
FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK#</u>
Unit No. 1 Reactor Bldg.	-17'	1-RB-19
	-17'	1-RB-20
	-17'	1-RB-24
	-17'	1-RB-25
	-17'	1-RB-26
	20'	1-RB-21
	20'	1-RB-22
	20'	1-RB-23
	20'	1-RB-27
	20'	1-RB-28
	20'	1-RB-29
	50'	1-RB-30
	50'	1-RB-31
	50'	1-RB-32
	50'	1-RB-33
	50'	1-RB-34
	50'	1-RB-35
	67'	1-RB-48A
	80'	1-RB-36
	80'	1-RB-39
	80'	1-RB-41
	80'	1-RB-43
	80'	1-RB-44
80'	1-RB-45	
98'	1-RB-37	
117'	1-RB-38	
117'	1-RB-40	
117'	1-RB-42	
117'	1-RB-46	
117'	1-RB-47	
117'	1-RB-48	
AOG Building	23'	2-AOG-57
	23'	2-AOG-58
	23'	2-AOG-59
	23'	2-AOG-60
	37'	2-AOG-62
	49'	2-AOG-61
Radwaste Building	-3'	RW-49
	-3'	RW-50
	-3'	RW-51
	23'	RW-52
	23'	RW-53
	23'	RW-54
	23'	RW-55
23'	RW-56	

TABLE 3.7.7.4-1 (Continued)

FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK#</u>
Diesel Generator Building	2'	DGB-1
	2'	DGB-2
	2'	DGB-3
	23'	DGB-4
	23'	DGB-5
	23'	DGB-6
	23'	DGB-7
	23'	DGB-8
	23'	DGB-9
	50'	DGB-10
	50'	DGB-11
	50'	DGB-12
	50'	DGB-13
	50'	AFFF HR-2
50'	AFFF HR-3	
Service Water Building	4'	SW-1
	20'	SW-2
	20'	SW-3
Control Building	23'	1-CB-1
	49'	1-CB-2
	70'	2-CB-3
Diesel Generator Tank Area	NA	AFFF HR-1

PLANT SYSTEMSFOAM SYSTEMSLIMITING CONDITION FOR OPERATION

3.7.7.5 The following foam systems shall be OPERABLE:

- a. Diesel Generator Fuel Oil Tank Area Foam System with:
 1. The concentrate proportioning and storage subsystem OPERABLE with 240 gallons of concentrate.
 2. Each tank room subsystem OPERABLE.
- b. Diesel Generator Air Filter Foam System with:
 1. The concentrate proportioning and storage subsystem OPERABLE with 40 gallons of concentrate.
 2. Each air filter subsystem OPERABLE.

APPLICABILITY: Whenever the diesel generators are required to be OPERABLE.

ACTION:

- a. With one tank room subsystem inoperable, verify the OPERABILITY of the backup foam hose reel within one hour.
- b. With one air filter subsystem inoperable, verify the OPERABILITY of two backup foam hose reels within one hour.
- c. With any inoperability other than as provided in a and b, above, verify the availability of backup fire suppression equipment for the unprotected area(s) within one hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

4.7.7.5 Each of the above required foam systems shall be demonstrated OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- b. At least once per 18 months by:
 1. Performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated actuation signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. A visual inspection of the spray headers to verify their integrity.
 3. A visual inspection of each nozzle's spray area to verify that the spray pattern is not obstructed.
 4. Conducting a performance evaluation of the concentrate.

PLANT SYSTEMS3/4.7.8 FIRE BARRIER PENETRATIONSLIMITING CONDITIONS FOR OPERATION

3.7.8 All fire barrier penetrations, including cable penetration barriers, fire doors, and fire dampers, in fire zone boundaries protecting safety-related areas shall be functional.

APPLICABILITY: At all times.

ACTION:

- a. With one or more of the above required fire barrier penetrations nonfunctional, within one hour establish a continuous fire watch on at least one side of the affected penetration or verify the OPERABILITY of fire detectors on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol. Restore the nonfunctional fire barrier penetration(s) to functional status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the nonfunctional penetration, and plans and schedule for restoring the fire barrier penetration(s) to functional status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.7.8 Each of the above required fire barrier penetrations shall be verified to be functional:
- a. At least once per 18 months by a visual inspection, and
 - b. Prior to restoring a fire barrier penetration to functional status following repairs or maintenance, by performance of a visual inspection of the affected fire barrier penetration.

PLANT SYSTEMSBASES3/4.7.4 REACTOR CORE ISOLATION COOLING SYSTEM (Continued)

RCICS specifications are applicable during CONDITIONS 1, 2, and 3 when reactor vessel pressure exceeds 113 psig because RCICS is the primary non-ECCS source of emergency core cooling when the reactor is pressurized.

With RCICS inoperable, adequate core cooling is assured by the demonstrated OPERABILITY of the HPCIS system and justifies the specified out-of-service period.

The surveillance requirements provide adequate assurance that RCICS and the condensate storage tank will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to start cooling at the earliest moment.

3/4.7.5 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the systems which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, locations, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

PLANT SYSTEMSBASES (Continued)SNUBBERS (Continued)

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a safety-related system, it was assumed that the frequency of snubber failures and initiating events are constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failures during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the result of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

To provide assurance of snubber functional reliability one of three functional testing methods are used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 10% tested for each functional testing failure, or
2. Functionally test a sample size and determine sample acceptance or rejection using Figure 4.7.5-1, or
3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

Figure 4.7.5-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubbers for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

PLANT SYSTEMSBASES (Continued)

SNUBBERS (Continued)

The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

3/4.7.6 SEALED SOURCE CONTAMINATION

The limitations on sealed source removable contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 79.39(c) limits for plutonium. Quantities of interest to this specification which are exempt from the leakage testing are consistent with the criteria of 10 CFR Part 30.11-20 and 70.19. Leakage from sources excluded from the requirements of this specification is not likely to represent more than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

3/4.7.7 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO₂, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety-related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service.

In the event the fire suppression water system become inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a 24-hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

PLANT SYSTEMSBASES (Continued)

3/4.7.8 FIRE BARRIER PENETRATIONS

The functional integrity of the fire barrier penetrations ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barrier penetrations are a passive element in the facility fire protection programs and are subject to periodic inspections.

The barrier penetrations, including cable penetration barriers, fire doors, and dampers, are considered functional when the visually observed condition is the same as the as-designed condition. For those fire barrier penetrations that are not in the as-designed condition, an evaluation shall be performed to show that the modification has not degraded the fire rating of the fire barrier penetration.

During periods of time when the barriers are not functional, either 1) a continuous fire watch is required to be maintained in the vicinity of the affected barrier, or 2) the fire detectors on at least one side of the affected barrier must be verified OPERABLE and a hourly fire watch patrol established until the barrier is restored to functional status.



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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 100
License No. DPR-62

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company (the licensee) dated May 7, 1984, complies 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.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-62 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 100, 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



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 10, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 100

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Revise the Appendix A Technical Specifications as follows:

Remove

VIII

3/4 7-9 through 3/4 7-28

B 3/4 7-2 through B 3/4 7-5

Insert

VIII

3/4 7-9 through 3/4 7-28

B 3/4 7-2 through B 3/4 7-5

INDEXLIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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PLANT SYSTEMS3/4.7.5. SNUBBERSLIMITING CONDITION FOR OPERATION

3.7.5 All hydraulic and mechanical snubbers shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3. OPERATIONAL CONDITIONS 4 and 5 for snubbers located on systems required OPERABLE in those OPERATIONAL CONDITIONS.

ACTION:

With one or more snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.5.g on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.5 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Inspection Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these groups (inaccessible and accessible) may be inspected independently according to the schedule below. The first inservice visual inspection of each type of snubber shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all hydraulic and mechanical snubbers. If all snubbers of each type on any system are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection of that system shall be performed at the first refueling outage. Otherwise, subsequent visual inspections of a given system shall be performed in accordance with the following schedule:

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

<u>No. of Inoperable Snubbers of Each Type on Any System per Inspection Period</u>	<u>Subsequent Visual Inspection Period *#</u>
0	18 months \pm 25%
1	12 months \pm 25%
2	6 months \pm 25%
3, 4	124 days \pm 25%
5, 6, 7	62 days \pm 25%
8 or more	31 days \pm 25%

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify that: (1) there are no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or support structure are secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type on that system that may be generically susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Specifications 4.7.5.f. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers. For those snubbers common to more than one system, the OPERABILITY of such snubbers shall be considered in assessing the surveillance schedule for each of the related systems.

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event. In addition to satisfying the visual inspection criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

* The inspection interval for each type of snubber on a given system shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lengthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found on that system.

The provisions of Specification 4.0.2 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test period shall be implemented:

- 1) At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meeting the functional test acceptance criteria of Specification 4.7.5.f, an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or
- 2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7.5-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.5.f. The cumulative number of snubbers of a type tested is denoted by "N." At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7.5-1. If at any time the point plotted falls in the "Reject" region all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during a day of equipment failure are retested.
- 3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, $1 + C/2$, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation $N = 55(1 + C/2)$. Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type have been tested.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at the time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

- 1) Activation (restraining action) is achieved within the specified range in both tension and compression;
- 2) Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;
- 3) Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and
- 4) For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

g. Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the operable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the operability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

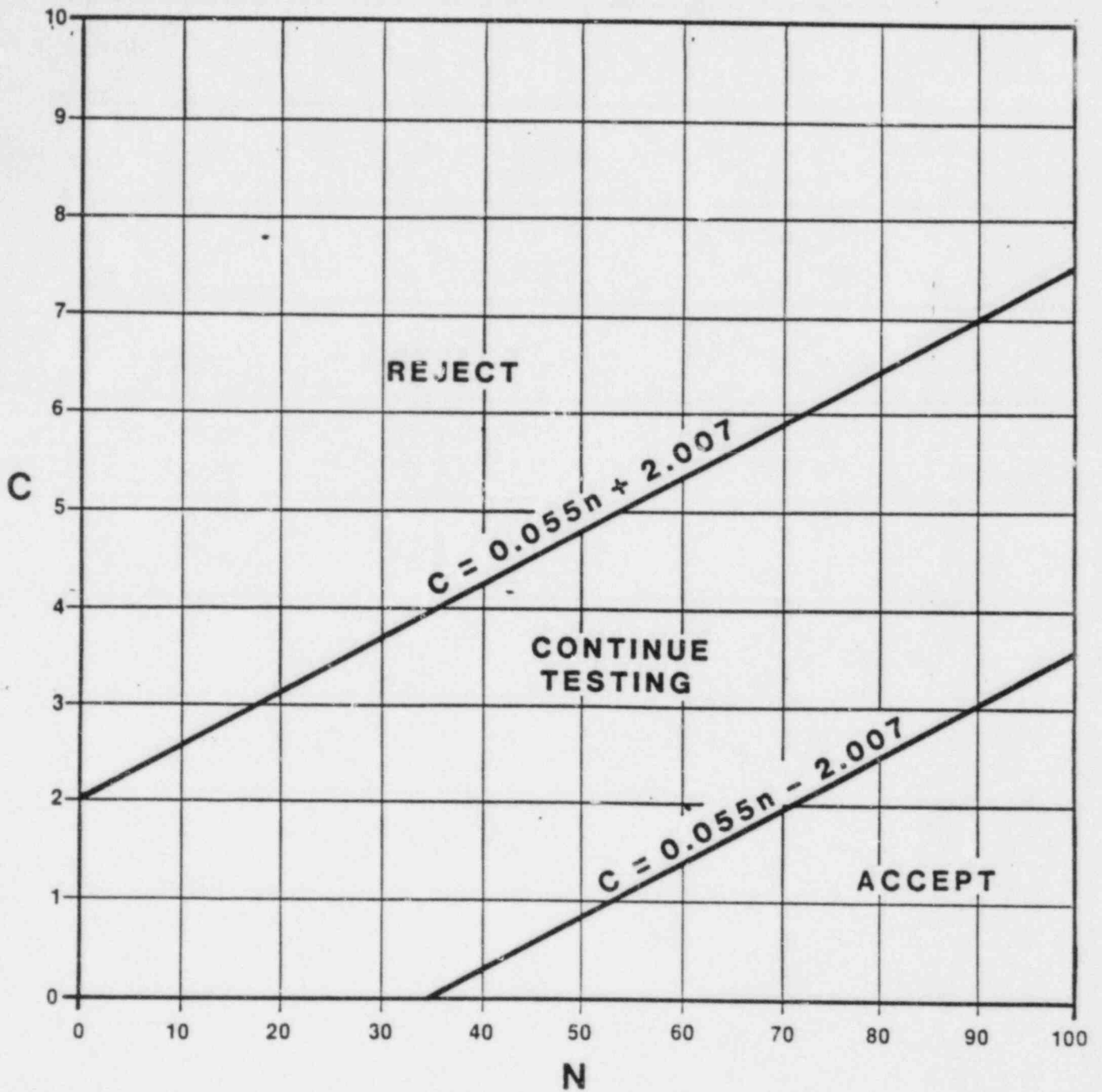
If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in Specification 4.7.5.e for snubbers not meeting the functional test acceptance criteria.

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

i. Snubber Seal Replacement Program

The service life of hydraulic and mechanical snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.2.



Amendment No. 100

BRUNSWICK - UNIT 2

Carolina
Power & Light Company

Sample Plan 2)
FOR SNUBBER FUNCTIONAL TEST

Figure 4.7.5-1

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PLANT SYSTEMS3/4.7.6 SEALED SOURCE CONTAMINATIONLIMITING CONDITION FOR OPERATION

3.7.6 Each sealed source containing radioactive material in excess of 100 microcuries of beta and/or gamma-emitting material or 5 microcuries of alpha-emitting material shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:

- a. Either decontaminated and repaired, or
- b. Disposed of in accordance with Commission Regulations.

The Provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.6.2 Test Frequencies - Each category of sealed sources (excluding start-up sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive material:

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3),
and
 2. In any form other than gas.
- b. Stored sources not in use - Each sealed and fission detector source shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources transferred without a certificate indicating the last test date shall be tested prior to being placed in use.
- c. Start-up sources and fission detectors - Each sealed start-up source and fission detector shall be tested within 31 days prior to being subjected to core flux and or installed in the core following repair or maintenance to the source.
- 4.7.6.3 Reports - A Special Report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination.

PLANT SYSTEMS3/4.7.7 FIRE SUPPRESSION SYSTEMSFIRE SUPPRESSION WATER SYSTEMLIMITING CONDITION FOR OPERATION

3.7.7.1 The fire suppression water system shall be OPERABLE with:

- a. Two OPERABLE fire pumps, one motor-driven and one diesel-driven, each with a capacity of 2000 gpm, with their discharges aligned to the fire suppression yard main,
- b. The fire protection water tank, with a minimum contained volume of 200,000 gallons, and the demineralized water tank, with a minimum contained volume of 90,000 gallons, and
- c. An OPERABLE flow path capable of taking suction from each of the water supplies and transferring the water through the yard main and distribution piping with OPERABLE sectionalizing control or isolation valves to, but not including, the yard hydrant curb valves and the first valve ahead of each sprinkler and hose standpipe system required to be OPERABLE per Specifications 3.7.7.2 and 3.7.7.4.

APPLICABILITY: At all times.

ACTION:

- a. With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- b. With the fire suppression water system otherwise inoperable:
 1. Establish a backup fire suppression water system within 24 hours, or
 2. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, and
 3. In lieu of any other report required by Specification 6.9.1, submit a Special Report in accordance with Specification 6.9.2;
 - a) By telephone within 24 hours,
 - b) Confirmed by telegraph, mailgram, or facsimile transmission no later than the first working day following the event, and
 - c) In writing within 14 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

4.7.7.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the contained water supply volume is at least the minimum specified.
- b. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes.
- c. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path is in its correct position.
- d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- e. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
 1. Verifying that each pump develops at least 2000 gpm at a system head of 125 psig,
 2. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 3. Verifying that each fire pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 125 psig.
- f. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

4.7.7.1.2 The fire pump diesel engine shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying:
 1. The fuel storage tank contains at least 500 gallons of fuel, and
 2. The diesel starts from ambient conditions and operates for at least 20 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water, and sediment.
- c. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service, and
 2. Verifying the diesel starts from ambient conditions on the auto-start signal and operates for greater than or equal to 20 minutes while loaded with the fire pump.

4.7.7.1.3 The fire pump diesel starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each battery is above the plates, and
 2. The overall battery voltage is greater than or equal to 24 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the battery.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. The battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

PLANT SYSTEMSSPRAY AND/OR SPRINKLER SYSTEMSLIMITING CONDITION FOR OPERATION

- 3.7.7.2 The following spray and/or sprinkler systems shall be OPERABLE:
- a. Diesel Generator #1 Preaction System - Diesel Generator Building
 - b. Diesel Generator #2 Preaction System - Diesel Generator Building
 - c. Diesel Generator #3 Preaction System - Diesel Generator Building
 - d. Diesel Generator #4 Preaction System - Diesel Generator Building
 - e. South Cable Spread Area Sprinkler System - Diesel Generator Building
 - f. North Cable Spread Area Sprinkler System - Diesel Generator Building
 - g. Two Standby Gas Treatment Train 1A Deluge Systems - Reactor Building #2.
 - h. Two Standby Gas Treatment Train 1B Deluge Systems - Reactor Building #2.
 - i. Area Sprinkler System - Reactor Building #2.
 - j. Service Water Pump Area Sprinkler System - Service Water Building
 - k. Service Water Cable Spread Area Sprinkler System - Service Water Building
 - l. Drumming Room Sprinkler System - Radwaste Building
 - m. Makeup Water Treatment Area Sprinkler System - Makeup Water Treatment Building

APPLICABILITY: Whenever equipment in the areas protected by the spray and/or sprinkler systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required spray and/or sprinkler systems inoperable, establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s) within 1 hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

4.7.7.2 Each of the above required spray and/or sprinkler systems shall be demonstrated OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- b. At least once per 18 months:
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated actuation signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. By inspection of the spray headers to verify their integrity, and
 3. By inspection of each deluge nozzle to verify no blockage.

PLANT SYSTEMSHIGH PRESSURE CO₂ SYSTEMSLIMITING CONDITION FOR OPERATION

3.7.7.3 The following high pressure CO₂ systems shall be OPERABLE with a minimum contained weight of 67.5 lbs. of CO₂ in each cylinder of the inservice bank.

- a. Unit No. 2 HPCI CO₂ System - Unit No. 2 Reactor Building.
- b. Control Building CO₂ System - Control Building.

APPLICABILITY: Whenever equipment in the area protected by the high pressure CO₂ systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required high pressure CO₂ systems inoperable, establish backup fire suppression equipment for the unprotected area(s) within 1 hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.3 Each of the above required high pressure CO₂ systems shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying that the high pressure CO₂ cylinders contain at least the minimum specified weight of CO₂.
- b. At least once per 18 months by verifying:
 1. The system control heads and associated ventilation dampers actuate manually and automatically, as appropriate, upon receipt of a simulated actuation signal, and
 2. Performance of a flow test through flooding system headers and nozzles and hose reel system horns to assure no blockage.

PLANT SYSTEMSFIRE HOSE STATIONSLIMITING CONDITIONS FOR OPERATION

3.7.7.4 The fire hose stations shown in Table 3.7.7.4-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the areas protected by the fire hose stations is required to be OPERABLE.

ACTION:

- a. With one or more of the fire hose stations shown in Table 3.7.7.4-1 inoperable, within one hour:
 1. Provide an alternative means of fire suppression for the unprotected area(s), or
 2. Route an additional equivalent capacity fire hose to the unprotected area(s) from an OPERABLE hose station.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.4 Each of the fire hose stations shown in Table 3.7.7.4-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by visual inspection of the station to assure all required equipment is at the station.
- b. At least once per 18 months by:
 1. Removing the hose for inspection and re-racking, and
 2. Replacement of all degraded gaskets in couplings.
- c. At least once per 3 years by:
 1. Partially opening each hose station valve to verify valve OPERABILITY and no flow blockage, and
 2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

TABLE 3.7.7.4-1

FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK#</u>
Unit No. 2 Reactor Bldg.	-17'	2-RB-19
	-17'	2-RB-20
	-17'	2-RB-24
	-17'	2-RB-25
	-17'	2-RB-26
	20'	2-RB-21
	20'	2-RB-22
	20'	2-RB-23
	20'	2-RB-27
	20'	2-RB-28
	20'	2-RB-29
	50'	2-RB-30
	50'	2-RB-31
	50'	2-RB-32
	50'	2-RB-33
	50'	2-RB-34
	50'	2-RB-35
	67'	2-RB-48A
	80'	2-RB-36
	80'	2-RB-39
	80'	2-RB-41
	80'	2-RB-43
	80'	2-RB-44
	80'	2-RB-45
	98'	2-RB-37
	117'	2-RB-38
	117'	2-RB-40
	117'	2-RB-42
117'	2-RB-46	
117'	2-RB-47	
117'	2-RB-48	
AOG Building	23'	2-AOG-57
	23'	2-AOG-58
	23'	2-AOG-59
	23'	2-AOG-60
	37'	2-AOG-62
	49'	2-AOG-61
Radwaste Building	-3'	RW-49
	-3'	RW-50
	-3'	RW-51
	23'	RW-52
	23'	RW-53
	23'	RW-54
	23'	RW-55
23'	RW-56	

TABLE 3.7.7.4-1 (Continued)

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK#</u>
Diesel Generator Building	2'	DGB-1
	2'	DGB-2
	2'	DGB-3
	23'	DGB-4
	23'	DGB-5
	23'	DGB-6
	23'	DGB-7
	23'	DGB-8
	23'	DGB-9
	50'	DGB-10
	50'	DGB-11
	50'	DGB-12
	50'	DGB-13
	50'	AFFF HR-2
50'	AFFF HR-3	
Service Water Building	4'	SW-1
	20'	SW-2
	20'	SW-3
Control Building	23'	1-CB-1
	49'	1-CB-2
	70'	2-CB-3
Diesel Generator Tank Area	NA	AFFF HR-1

PLANT SYSTEMSFOAM SYSTEMSLIMITING CONDITION FOR OPERATION

3.7.7.5 The following foam systems shall be OPERABLE:

- a. Diesel Generator Fuel Oil Tank Area Foam System with:
 1. The concentrate proportioning and storage subsystem OPERABLE with 240 gallons of concentrate.
 2. Each tank room subsystem OPERABLE.
- b. Diesel Generator Air Filter Foam System with:
 1. The concentrate proportioning and storage subsystem OPERABLE with 40 gallons of concentrate.
 2. Each air filter subsystem OPERABLE.

APPLICABILITY: Whenever the diesel generators are required to be OPERABLE.

ACTION:

- a. With one tank room subsystem inoperable, verify the OPERABILITY of the backup foam hose reel within one hour.
- b. With one air filter subsystem inoperable, verify the OPERABILITY of two backup foam hose reels within one hour.
- c. With any inoperability other than as provided in a and b, above, verify the availability of backup fire suppression equipment for the unprotected area(s) within one hour; restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

4.7.7.5 Each of the above required foam systems shall be demonstrated OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- b. At least once per 18 months by:
 1. Performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated actuation signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. A visual inspection of the spray headers to verify their integrity.
 3. A visual inspection of each nozzle's spray area to verify that the spray pattern is not obstructed.
 4. Conducting a performance evaluation of the concentrate.

PLANT SYSTEMS3/4.7.8 FIRE BARRIER PENETRATIONSLIMITING CONDITIONS FOR OPERATION

3.7.8 All fire barrier penetrations, including cable penetration barriers, fire doors, and fire dampers, in fire zone boundaries protecting safety-related areas shall be functional.

APPLICABILITY: At all times.

ACTION:

- a. With one or more of the above required fire barrier penetrations nonfunctional, within one hour establish a continuous fire watch on at least one side of the affected penetration, or verify the OPERABILITY of fire detectors on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol. Restore the nonfunctional fire barrier penetration(s) to functional status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the nonfunctional penetration, and plans to schedule for restoring the fire barrier penetration(s) to functional status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.8 Each of the above required fire barrier penetrations shall be verified to be functional:

- a. At least once per 18 months by a visual inspection, and
- b. Prior to restoring a fire barrier penetration to functional status following repairs or maintenance, by performance of a visual inspection of the affected fire barrier penetration.

PLANT SYSTEMSBASES3/4.7.4 REACTOR CORE ISOLATION COOLING SYSTEM (Continued)

RCICS specifications are applicable during CONDITIONS 1, 2, and 3 when reactor vessel pressure exceeds 113 psig because RCICS is the primary non-ECCS source of emergency core cooling when the reactor is pressurized.

With RCICS inoperable, adequate core cooling is assured by the demonstrated OPERABILITY of the HPCIS system and justifies the specified out-of-service period.

The surveillance requirements provide adequate assurance that RCICS and the condensate storage tank will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to start cooling at the earliest moment.

3/4.7.5 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the systems which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, locations, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

PLANT SYSTEMSBASES (Continued)SNUBBERS (Continued)

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a safety-related system, it was assumed that the frequency of snubber failures and initiating events are constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failures during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the result of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

To provide assurance of snubber functional reliability one of three functional testing methods are used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 10% tested for each functional testing failure, or
2. Functionally test a sample size and determine sample acceptance or rejection using Figure 4.7.5-1, or
3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

Figure 4.7.5-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubbers for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

PLANT SYSTEMSBASES (Continued)SNUBBERS (Continued)

The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

3/4.7.6 SEALED SOURCE CONTAMINATION

The limitations on sealed source removable contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 79.39(c) limits for plutonium. Quantities of interest to this specification which are exempt from the leakage testing are consistent with the criteria of 10 CFR Part 30.11-20 and 70.19. Leakage from sources excluded from the requirements of this specification is not likely to represent more than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

3/4.7.7 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO₂, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety-related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service.

In the event the fire suppression water system become inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a 24-hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

PLANT SYSTEMSBASES (Continued)

3/4.7.8 FIRE BARRIER PENETRATIONS

The functional integrity of the fire barrier penetrations ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barrier penetrations are a passive element in the facility fire protection programs and are subject to periodic inspections.

The barrier penetrations, including cable penetration barriers, fire doors, and dampers, are considered functional when the visually observed condition is the same as the as-designed condition. For those fire barrier penetrations that are not in the as-designed condition, an evaluation shall be performed to show that the modification has not degraded the fire rating of the fire barrier penetration.

During periods of time when the barriers are not functional, either 1) a continuous fire watch is required to be maintained in the vicinity of the affected barrier, or 2) the fire detectors on at least one side of the affected barrier must be verified OPERABLE and a hourly fire watch patrol established until the barrier is restored to functional status.