

November 17, 1976

Docket No. 50-261

Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Senior Vice President
336 Fayetteville Street
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Gentlemen:

RE: H. B. ROBINSON UNIT NO. 2

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Earlier this year we sent letters to licensees of operating nuclear power plants notifying them of a revision to 10 CFR Part 50, Section 50.55a which was published in the Federal Register on February 12, 1976 (41 FR 6256). The revised regulation changed the inservice inspection and testing requirements for nuclear power plant components contained in paragraph (g) of §50.55a. A letter regarding this subject was sent to you on April 22, 1976.

Since that time, the NRC has received a number of inquiries from licensees regarding acceptable methods for complying with the regulation. In general, the inquiries have been directed toward three major areas relative to compliance with the regulation:

1. The determination of which ASME Boiler and Pressure Vessel Code Edition and Addenda are applicable for any updated inservice inspection or testing program,
2. The requirement to conform the Technical Specifications to a revised program, and
3. The process of obtaining relief from ASME Code requirements found to be impractical.

Consequently, we are transmitting for your use, Enclosure 1: "NRC Staff Guidance For Complying with Certain Provisions of 10 CFR 50.55a(g), Inservice Inspection Requirements". This enclosure describes the major provisions of the revised regulation, addresses the areas of licensee concern listed above, and provides guidance on information which the NRC staff will need to review inservice inspection and testing programs and to evaluate requests for relief from ASME Code requirements that are determined to be impractical. We believe this enclosure will serve to clarify the proper method(s) for implementing the regulation in several important areas.

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Company

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We reiterate our previous request that you submit proposed Technical Specification changes to incorporate standard language referencing 50.55a(g), at least 6 months before the start of the next 40-month inspection period for your facility. Also, as discussed in Enclosure 1, you should submit a description of your planned inservice inspection and testing programs, as well as any request for relief from ASME Code requirements determined to be impractical for your facility, as far in advance as possible of, but at least 90 days before, the start of any 40-month inservice inspection period, or 20-month pump and valve testing period.

In addition, we would like to emphasize an important point regarding the ASME Code Section XI requirements to test selected pumps and valves, that are now incorporated in 50.55a(g): The ASME Code Section XI requirements apply only to selected valves and pumps that can be tested without placing the plant in an unsafe condition. You should exercise care in planning your testing programs to ensure that no test will be conducted while the plant is in an operating mode that would make it vulnerable to a test error or a test failure. Particular attention should be directed toward the valve exercising (cycling) tests. In this regard, some basic guidelines for excluding exercising (cycling) tests of certain valves during plant operation are contained in Enclosure 2. Valve leakage tests and other valve and pump tests required by the ASME Code, should be reviewed for each component, relative to each plant operating mode, to ensure that no test will have an adverse impact on plant safety.

If you have any further questions regarding implementation of 10 CFR 50.55a(g) at your facility, please contact us.

Sincerely,

Original Signed by

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:

1. NRC Staff Guidance for Complying with Certain Provisions of 10 CFR 50.55a(g)
2. Guidelines for Excluding Exercising (Cycling) Tests of Certain Valves During Plant Operation

Office	enclosures: See next	C-ORB#4 DOR		
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DATE	11/11/76	11/11/76	11/11/76	

Carolina Power & Light Company

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NRC STAFF GUIDANCE FOR COMPLYING WITH CERTAIN
PROVISIONS OF 10 CFR 50.55a(g) "INSERVICE INSPECTION REQUIREMENTS"

I. INTRODUCTION

Paragraph 50.55a(g) of 10 CFR Part 50 was revised on February 12, 1976 (41 FR 6256). Since then, a number of licensees have requested that the NRC clarify several key provisions contained in the revised regulation. These key provisions relate to: (1) the requirements to periodically update the inservice and testing programs to comply with later editions and addenda to the ASME Code, (2) the requirement to conform the Technical Specifications to a revised inservice inspection or testing program, and (3) the procedures for requesting and obtaining relief from ASME Code requirements that the licensee considers to be impractical for his facility. The purpose of this document is to briefly summarize the major provisions of the revised §50.55a(g) and to provide general guidance in these three key areas. The document is in no way intended to encompass all aspects of attaining compliance with §50.55a(g).

II. SUMMARY OF REGULATION

The revised §50.55a(g) contains provisions that require inservice inspection and testing of ASME Code Class 1, 2, and 3 nuclear power plant components (including supports) to be performed in accordance with Section XI of the ASME Boiler & Pressure Vessel Code and applicable Addenda. For operating facilities whose Operating License (OL) was issued before March 1, 1976, these provisions of the regulation apply at the start of the next regular 40-month inspection period after September 1, 1976. The start of the next 40-month period is determined by measuring a series of such periods beginning at the start of facility commercial operation. For facilities that received OL's on or after March 1, 1976, these provisions of the regulation apply at the start of commercial operation.

As a result of the February 1976 amendment, §50.55a(g) now specifies inservice inspection and testing requirements for all operating plants, including those that received a Construction Permit (CP) before January 1, 1971. Since plant designs and access provisions for inservice inspections have progressed over the years, the regulation provides recognition of this fact by grouping design requirements for component inspectability based on a facility's CP issuance date. The regulation further specifies that new inservice inspection and testing requirements that become effective in later editions and addenda to the ASME Code, shall apply to all plants to the degree practical throughout their service lives.

An important part of the revised §50.55a(g) is the incorporation of the ASME Code Section XI requirements for testing pumps and valves for operational readiness along with the inservice inspection requirements. This means that in addition to a facility's inservice inspection program, a periodic testing program of selected pumps and valves must also be instituted.

There are now provisions in §50.55a(g) for continued updating of requirements for testing pumps and valves and for inservice inspection. The inservice inspection program must be updated every 40 months while the pump and valve testing program must be updated every 20 months. Furthermore, the regulation specifies action to be taken by a licensee when an updated inservice inspection or testing program conflicts with the Technical Specifications, or when a requirement contained in a referenced ASME Code Edition or Addendum is deemed impractical by the licensee due to design, geometry, or material considerations.

Other provisions in §50.55a(g) allow the NRC to grant relief from ASME Code requirements that have been determined to be impractical for a facility and specifically allow the NRC to require a licensee to follow an augmented inservice inspection program on components for which added assurance of structural reliability is needed.

Selected provisions of the revised regulation are discussed below.

III. General Guidance for Compliance with Three Key Provisions of §50.55a(g):

A. Updating Inservice Inspection and Testing Programs

-----Paragraph 50.55a(g)(4):

The inservice inspection program for a facility must be updated at 40 month intervals, while the program for testing pumps and valves for operational readiness must be updated every 20 months. A description of the updated programs should be submitted to the NRC for review and approval as far in advance as possible of, but at least 90 days before, the start of each period. The information the NRC will need for its review of updated programs is identified in Appendix A (attached).

Under §50.55(g)(4), the revised inservice inspection and testing programs must, to the extent practical, comply with the requirements in editions and addenda to the ASME Code that are "in effect" no more than 6 months before the start of the period for which the updated program is applicable. The terms "in effect" or "effective", as used in §50.55a(g)(4), identify those editions and addenda to the ASME Code that have been published by the ASME and that are also referenced in paragraph (b) of §50.55a.

Paragraph (b) of §50.55a is amended periodically to incorporate more recent ASME Code Editions and Addenda. However, the regulations are not amended until after the published ASME Code Editions and Addenda have been reviewed and endorsed by the NRC. Therefore, the ASME Code Edition and Addenda that are applicable to any inspection period are those referenced in paragraph (b) of §50.55a on the date that corresponds to 6 months before the start of the period in question.

If amendments to paragraph (b) of §50.55a become effective on a date that falls between the date that marks 6 months before the start of a inspection period and the start date itself, the licensee is not required to comply with the newly referenced ASME Code Editions and Addenda. Under the regulation, the licensee need only comply with the ASME Code Editions and Addenda that were referenced in paragraph (b) of §50.55a 6 months before the start of the period in question. On the other hand, the regulation does not preclude compliance with the later referenced editions and addenda if the licensee chooses, but the document that describes each new inservice inspection or testing program should state which ASME Code Edition and Addenda will be used.

An inservice inspection or testing program does not comply with §50.55a(g)(4) if it is based on an ASME Code Edition or Addendum which is not or has not been referenced in paragraph (b) of §50.55a.

B. Conforming the Technical Specifications to an Updated Inservice Inspection or Testing Program ----- Paragraph 50.55a(q)(5)(ii):

If a revised (updated) inservice inspection or testing program conflicts with the Technical Specifications for a facility, the licensee must propose changes to the Technical Specifications to conform them to the updated program. This must be done at least 6 months before the start of the period in which the program becomes applicable.

Technical Specifications are considered to be "in conflict" only in cases where the requirements of the regulation (thus the requirements of the updated program) are more restrictive than the requirements of the Technical Specifications. In such cases the licensee must propose changes to conform the Technical Specifications to the revised program. In cases where the updated program is less restrictive than a particular Technical Specification requirement, the licensee must continue to comply with the Technical Specifications until he requests and is issued a Technical Specification change. The NRC staff will review such a proposed technical Specification change to determine if it is acceptable or whether the existing requirement should be retained as an augmented requirement pursuant to §50.55a(g)(6)(ii).

In the NRC Staff's view, the most efficient way to eliminate existing or potential conflicts from the Technical Specifications is for licensees to propose Technical Specification changes that would substitute standard language referencing 50.55a(g) in the place of existing inservice inspection and testing requirements. This should be done at least 6 months before the start of the first 40-month inspection period for which 50.55a(g) is applicable. Sample language for this purpose was sent to licensees earlier this year.

The NRC strongly recommends that licensees adopt the approach of referencing 50.55a(g), because such referencing will simplify the Technical Specifications by deleting any requirements that are duplicated in the regulation. It will also alleviate the need for changes whenever an inservice inspection or testing program is updated. This approach has the added advantage of eliminating the scheduling pressures associated with meeting the 6 months submittal time requirement for Technical Specification changes proposals of 50.55a(g)(2)(ii). It will also simplify the process by which licensees request, and the NRC grants, relief from ASME Code requirements that have been determined to be impractical. This is because license amendments (i.e., Technical Specification changes) will not be necessary to grant relief.

Relief from ASME Code requirements that are deemed impractical for a facility is further discussed below.

C. Obtaining Relief from ASME Code Requirements Determined to be Impractical -----
Paragraph 50.55a(g)(5)(iii) and (6)(i):

If certain ASME Code requirements are found to be impractical by the licensee, the regulation requires him to notify the NRC and submit information to support his findings. The licensee should submit requests for relief from ASME Code requirements that he has determined to be impractical at least 90 days before the start of the applicable inspection period. The information that is needed by the NRC Staff to evaluate requests for relief from requirements found to be impractical is identified in Appendix B (attached).

The NRC Staff will evaluate licensee requests for relief and will grant relief, if appropriate, pursuant to 50.55a(g)(6)(i). Unless a licensee is otherwise notified by the NRC, relief from ASME Code requirements will remain applicable until the end of each 120-month period. At that time, the NRC will re-evaluate the basis for the determination that the requirement is impractical, pursuant to 50.55a(g)(5)(iv). This re-evaluation will take into account any advances in the state-of-the-art of inservice inspection techniques that may have occurred since the relief was originally granted.

Generally, the licensee will know well in advance of the beginning of any inspection period, whether or not a particular ASME Code requirement will be impractical for his facility. Thus, the licensee should request relief from ASME Code requirements as far as possible in advance of, but not less than 90 days before, the start of the inspection period. Early submittals are particularly important for the first 40-month inservice inspection and 20-month pump and valve testing period because they will enable the NRC staff to evaluate the information received from all licensees and determine which ASME Code requirements may be generally impractical for various classes of plants. Early submittals will thereby facilitate earlier feedback to licensees regarding the acceptability of their requests.

The NRC Staff recognizes that it will not be possible in all cases for a licensee to determine in advance that any particular ASME Code requirement will be impractical for his facility. In cases where, during the process of inspection or testing, certain requirements are found to be impractical due to unforeseen circumstances, the licensee may request relief at that time. These occurrences are not expected to be many and are expected to result in only minor changes to an inservice inspection or testing program.

All relief from ASME Code requirements that are determined to be impractical for a facility will be granted in the form of a letter within the provisions of §50.55a(g)(6)(i). This written relief should be incorporated into the document describing the inservice inspection and testing program retained by the licensee. Notice of the granting of relief from ASME Code requirements will be published in the FEDERAL REGISTER, but the written relief itself will not become an explicit part of the facility license or the Technical Specifications.

APPENDIX A

INFORMATION REQUIRED FOR NRC REVIEW OF INSERVICE INSPECTION AND TESTING PROGRAMS

1. Inservice Inspection Programs:

The information submitted for NRC review should include*, as a minimum:

- a. Identification of the applicable ASME Boiler and Pressure Vessel Code Edition and Addenda
- b. The period for which the program is applicable
- c. Identification of all of the specific components and parts to be examined for each ASME Code Class (i.e., each Quality Group as defined in Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water -, Steam -, and Radioactive-Waste-Containing Components of Nuclear Power Plants"), and the inspection intervals for each Class or Quality Group
- d. For each specific component and part; specification of:
 - i) The examination category as defined in ASME Section XI
 - ii) The examination method to be used
 - iii) The repair requirements

2. Pump and Valve Testing Programs

The information submitted for NRC review should include*, as a minimum:

- a. Identification of the applicable ASME Code Edition and Addenda
- b. The period for which the program is applicable
- c. For Pump Testing: identify:
 - i) each pump to be tested (name and number)
 - ii) the test parameters that will be measured
 - iii) the test intervals, i.e., monthly during operation, only during cold shutdown, etc,

*Specific written relief from the NRC is required to exclude any ASME Section XI Code requirements,

NRC STAFF
GUIDELINES FOR EXCLUDING EXERCISING
(CYCLING) TESTS OF CERTAIN VALVES
DURING PLANT OPERATION

Any valve which when exercised (cycled) could put the plant in an unsafe condition should not be tested. Below are some examples of the types of valves that should be specifically excluded from exercising (cycling) tests during plant operation*:

1. All valves whose failure in a non-conservative position during the cycling test would cause a loss of system function should not be exercised. Valves in this category would typically include all non-redundant valves in lines such as a single discharge line from the refueling water storage tank, or accumulator discharge lines in PWR's and the HPCI turbine steam supply and the HPCI pump discharge in BWR's. Other valves may fall into this category under certain system configurations or plant operating modes. For example, when one train of a redundant system such as ECCS is inoperable, non-redundant valves in the remaining train should not be cycled since their failure would cause a loss of total system function.
2. All valves, whose failure to close during a cycling test would result in a loss of containment integrity. Valves in this category would typically include all valves in containment penetrations where the redundant valve is open and inoperable.
3. All valves, which when cycled, could subject a system to pressures in excess of their design pressures. It is assumed for the purpose of a cycling test, that one or more of the upstream check valves has failed unless positive methods are available for determining the pressure or lack thereof on the high pressure side of the valve to be cycled. Valves in this category would typically include the isolation valves of the residual heat removal/shutdown cooling system and, in some cases certain ECCS valves.

*All ASME Section XI Category A and B valves should be cycled, as practicable, at each cold shutdown, but need not be cycled more often than once every 3 months.

d. For Valve Testing; identify:

- i) each valve in ASME Section XI Categories A & B that will be exercised every 3 months during normal plant operation (indicate whether partial or full stroke exercise).
- ii) each valve in ASME Section XI Category A that will be leak tested during refueling outages.
- iii) all valves in ASME Section XI Categories C, D, and E, that will be tested, the type of test and the test frequency. For check valves, identify those that will be exercised every 3 months and those that will only be exercised during cold shutdown.

APPENDIX B

INFORMATION REQUIRED FOR NRC REVIEW OF REQUESTS FOR RELIEF FROM ASME CODE SECTION XI REQUIREMENTS DETERMINED TO BE IMPRACTICAL

1. Identify component for which relief is requested:
 - a. Name and number as given in FSAR
 - b. Function
 - c. ASME Section III Code Class
 - d. For valve testing, also specify the ASME Section XI valve category as defined in IWV-2000.
 2. Specifically identify the ASME Code requirement that has been determined to be impractical for component.
 3. Provide information to support the determination that the requirement in (2) is impractical; i.e., state and explain the basis for requesting relief.
 4. Specify the inservice inspection (or testing) that will be performed in lieu of the ASME Code Section XI requirements that have been determined to be impractical.
 5. Provide the schedule for implementation of the procedure(s) in (4) above.
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