NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER 50-400 → 403

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TO:	FROM:	DATE OF DOCUMENT
Mr. Benard C. Rusche	Carolina Power & Light Company Raleigh, North Carolina M. A. McDuffie	5/17/77
		DATE RECEIVED 5/20/77

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DESCRIPTION

Ltr. notorized 5/17/77...request for authorization to use certain components which have been designed & fabricated to earlier code addenda of ASME III rather than those prescribed.....

(3-P)

PLANT NAME:

Shearon Harris Units 1-2-3-4

RJL

ENCLOSURE

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ACKNOWLEDGED

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771400165

NRC FORM 195 (2-76)

CP&L

Carolina Power & Light Company

May 17, 1977

Regulatory Docket File

Mr. Benard C. Rusche, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NOS. 1, 2, 3, AND 4
DOCKET NOS. 50-400, 50-401, 50-402, AND 50-403
10CFR50.55a CODES AND STANDARDS

Dear Mr. Rusche:

Carolina Power & Light Company (CP&L) hereby requests authorization from the Nuclear Regulatory Commission to use certain components in the Shearon Harris Nuclear Power Plant (SHNPP) which have been designed and fabricated to earlier code addenda of ASME III than those prescribed by Sections 50.55a(c), (d), and (e) of 10CFR Part 50. Such authorizations are permitted under 10CFR50.55a(a)(2)(i) upon demonstration that compliance with the otherwise applicable requirements of Paragraphs (c), (d), and (e) would result in hardships or unusual difficulties without a compensating increase in the level of quality and safety.

The application for the SHNPP construction permit was filed by CP&L on September 7, 1971, with the goal of receiving a construction permit in 1973. Engineering design and procurement of long lead components was necessary to meet the original schedules for full power operation. During 1973, a number of factors beyond the control of the applicant resulted in delaying the issuance of the construction permit. These factors ultimately resulted in the present schedule for commercial operation of the SHNPP: Unit 1, 1984; Unit 2, 1986; Unit 3, 1990; and Unit 4, 1988. When the first potential for delay became apparent in 1973, immediate steps were taken to upgrade the code addenda for applicable equipment under 10CFR50.55a. The results of these actions are indicated in Table 1.B.2-1C of the SHNPP PSAR. This table also indicates the status and code addenda of all safety Class I equipment.

In accordance with discussions between the NRC Staff and CP&L, it was determined that CP&L should formally request authorization to use those components that could not be upgraded to comply with the current requirements of 10CFR50.55a. Accordingly, CP&L requests authorization to use the following components which have been designed or fabricated to comply with earlier revisions of the applicable codes:

1. Units 1 and 2 Reactor Vessels - These reactor vessels were originally purchased to the S71 edition of ASME III and were subsequently upgraded to the W71 addenda. Section 50.55a

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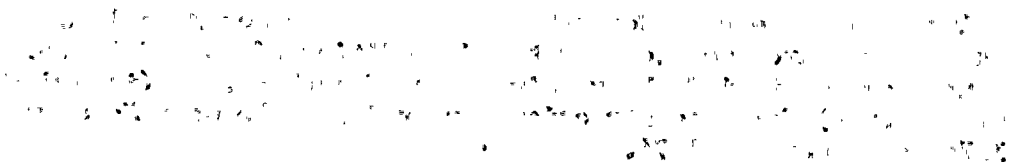
currently requires the S72 addenda for plants having construction permits issued after July 1, 1974. The principal difference between the S72 and W71 addenda, that is applicable to reactor vessels, is in the change in fracture toughness testing requirements for materials as outlined in paragraph NB-2300 of the Summer 1972 addendum. The Units 1 and 2 reactor vessels had progressed too far in fabrication to permit upgrading to S72, but met all fracture toughness requirements of NB-2330 except for tests which were not performed for the heat-affected zones and weld metal from the weld procedure qualification tests, and the weld metal of NB-2431 because the material was not available. For welds in the core region (effective height of the fuel element assemblies), tests were performed on the as-deposited weld metal and the heat-affected zone of the limiting plate using the procedures of NB-2330. Five heats of welding electrodes that were used on the Unit 1 vessel and three heats of welding electrodes on the Unit 2 vessel were completely consumed prior to the request for upgrading. Consequently, the Units 1 and 2 vessels are stamped to the W71 edition of ASME III.

2. Units 1 and 2 Reactor Coolant Pumps - These reactor coolant pumps were purchased to meet the S72 edition of ASME III which would have satisfied the requirements of 10CFR50.55a (in effect at the time) for a construction permit issued between January 1, 1974, and June 30, 1974.

   The W72 edition of ASME III added a revised Section NB-3400 covering design of Class I pumps which specified that the designs meet the requirements of Subarticles NB-3100 and NB-3200 but in cases of conflict, the requirements of NB-3400 shall govern. The SHNPP pumps were designed and fabricated to the S72 edition of the code and could not be upgraded to meet the W72 requirements of NB-3400 because this revision changed the classification of the pump thermal barrier heat exchanger from Class III to Class I. The advanced stage of fabrication of this assembly precluded upgrading of the Units 1 and 2 reactor coolant pumps to W72 addenda, although the casings for these pumps were made to Summer 1973 requirements.

3. Units 1, 2, 3, and 4 Class I Control Valves - NSSS control valves for all four units were ordered to the S72 edition of ASME III or later code editions in effect at the time of placement. As a result only the Class I control valves do not meet the W72 edition that is specified by 10CFR50.55a. At the time the purchase orders were placed for the control valves, the S72



edition would have satisfied the requirements of 10CFR50.55a for a construction permit issued between January 1, 1974, and June 30, 1974.

Safety Class I valves for these units had progressed too far in fabrication to permit upgrading to the requirements of the W72 edition. The W72 edition made changes affecting valves such as NB-2420 required tests for welding materials, NB-2510 inspection requirements and NB-6111.1 hydrostatic testing.

In support of this request, we point out that this application for a construction permit had completed a satisfactory ACRS review during January, 1973, with NRC Staff Safety Evaluation Reports issued December 22, 1972, and April 27, 1973, in support of the SHNPP design. Had the construction permit been issued during 1973, CP&L would have been in complete compliance with the requirements of 10CFR50.55a of that time and this request would not have been necessary.

Finally, in view of CP&L's renewed attempts to complete the SHNPP on the current schedule, it is essential that the Class I equipment currently on site be utilized since to do otherwise would be a severe hardship with no identifiable improvement in the level of safety or quality of these components. Accordingly, CP&L believes that this request is reasonable and justifiable. Therefore, CP&L requests that authorization be granted from the Commission to use the equipment covered by this letter in the SHNPP.

Yours very truly,

M. A. McDuffie
Senior Vice President
Engineering & Construction

MAM/dkm

Sworn to and subscribed before me this 17th day of May, 1977.

Franklin Murray
Notary Public

FRANKLIN MURRAY
NOTARY
PUBLIC
WAKE COUNTY, N. C.

My Commission Expires October 4, 1981