



Carolina Power & Light Company
Harris Nuclear Plant
PO Box 165
New Hill NC 27562

SERIAL: HNP-99-184
10 CFR 50.55a

DEC 20 1999

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. 2R1-013
USE OF CODE CASE N-623 FOR DEFERRAL OF REACTOR VESSEL
SHELL-TO-FLANGE WELD INSPECTION

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(ii), Carolina Power & Light Company (CP&L) requests relief from the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI for the Harris Nuclear Plant (HNP). Specifically, CP&L requests relief from the Section XI, IWB-2500-1 requirement for performing at least 50% of the reactor vessel shell-to-flange weld examination in the first inspection period of the interval at HNP. Compliance with this requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The proposed alternative to the IWB-2500-1 requirement is to utilize ASME Code Case N-623 which allows for 100% deferral of the shell-to-flange weld examination to the end, or third inspection period, of the interval. The proposed alternative will provide an acceptable level of quality and safety.

It is requested that the NRC review this relief request prior to March 15, 2000 to avoid adversely impacting Refueling Outage 9, currently scheduled to begin on April 15, 2000. Please refer any question regarding this submittal to Mr. J. H. Eads at (919) 362-2646.

Sincerely,

D. B. Alexander
Manager, Regulatory Affairs
Harris Plant

A047

Document Control Desk

SERIAL: HNP-99-184

Page 2

AEC

Enclosure

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)
Mr. R. J. Laufer (NRR Project Manager, HNP)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. 2R1-013
USE OF CODE CASE N-623 FOR DEFERRAL OF REACTOR VESSEL
SHELL-TO-FLANGE WELD INSPECTION

COMPONENT FOR WHICH RELIEF IS REQUESTED:

This request is for the Class 1 reactor vessel shell-to-flange weld (Category B-A).

CODE REQUIREMENT(S):

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, 1989 Edition with no Addenda, Table IWB-2500-1, Examination Category B-A, requires inspection of the reactor vessel shell-to-flange weld. Partial deferral of the volumetric examination is permitted. Notes 3 and 4 in Table IWB-2500-1, Category B-A state, "If partial examinations are conducted from the flange face, the remaining volumetric examinations required to be conducted from the vessel wall may be performed at or near the end of each inspection interval. The examination of shell-to-flange welds may be performed during the first and third inspection periods in conjunction with the nozzle examinations of Exam. Cat. B-D (Program B). At least 50% of the shell-to-flange welds shall be examined by the end of the first inspection period, and the remainder by the end of the third inspection period."

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED:

Relief is requested from performing at least 50% of the shell-to-flange weld by the end of the first inspection period. Relief is requested to use ASME Code Case N-623 for 100% deferral of the shell-to-flange weld examination to the end of the inservice inspection interval.

BASIS FOR RELIEF:

Pursuant to 10 CFR50.55a(a)(3)(ii), relief is requested on the basis that compliance with the original examination requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The ASME Code Committee has approved Code Case N-623, "Deferral of Inspections of Shell-to-Flange and Head-to-Flange Welds of a Reactor Vessel Section XI, Division 1." Code Case N-623 provides an alternative to costly and time consuming first period examinations. In Code Case N-623, the ASME Code Committee has stated that the Code Case may be used if the following conditions have been met:

- (a) No welded repair/replacement activities have ever been performed on the shell-to-flange or head-to-flange weld.

- (b) Neither the shell-to-flange weld nor head-to-flange weld contains identified flaws or relevant conditions that currently require successive inspections in accordance with IWB-2420(b).
- (c) The vessel is not in the first inspection interval.

The Harris Nuclear Plant (HNP) reactor vessel complies with these requirements. Therefore, this code case is applicable to HNP.

By performing the reactor vessel shell-to-flange weld examination at the end of the inspection interval, it can be performed with the same automated equipment used to examine the remaining reactor vessel welds. This will provide a significant reduction in radiation exposure and cost associated with performing the examination.

ALTERNATIVE EXAMINATION(S):

Code Case N-623 is to be applied to the reactor vessel shell-to-flange weld. The required examination is to be performed at the end of the inspection interval.

TECHNICAL JUSTIFICATION FOR REQUESTING RELIEF:

The proposed alternative provides an acceptable level of quality and safety since the shell-to-flange weld will still receive the same high quality examinations that have been required by the ASME Code Section XI since the reactor was placed in commercial service. The only change is that the shell-to-flange weld will be examined at the same time as the remainder of the reactor vessel welds, including the nozzle examinations of Examination Category B-D. Reactor vessel nozzle weld examinations are allowed to be deferred to the end of the interval by Code Case N-521, which is acceptable to the NRC staff for application as stated in NRC Regulatory Guide 1.147, Revision 12, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." No changes are being made to the volumes or areas of material that are examined, nor to the nondestructive examination (NDE) personnel qualifications. This relief request does not involve changes to NDE methods or acceptance criteria.

In addition, the following information should be considered. HNP is currently in the first period of the second inspection interval. The shell-to-flange weld was partially examined, as required, from the flange face during the first period of the first interval. This exam was conducted again at the end of the first interval in conjunction with the 10-year vessel examination. The weld was examined from the flange face as well as the vessel wall using both Code required techniques and Performance Demonstration Initiative (PDI) techniques. This will allow the examination schedule for this weld not to exceed the length of one inspection interval.

IMPLEMENTATION SCHEDULE:

This Relief Request (2R1-013) is applicable to the HNP Second 10-Year Inservice Inspection Interval.