



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

29 SEP 1986

Docket Nos.: 50-424
and 50-425

Mr. Richard Conway, Vice President
and Project General Manager
Georgia Power Company
Box 299A, Route 2
Waynesboro, Georgia 30830

Dear Mr. Conway:

Subject: Code Addenda of Record for Pipe Support Allowable Stresses -
Vogtle Electric Generating Plant, Units 1 and 2

By letter dated August 4, 1986, Georgia Power Company (GPC) requested a deviation from the ASME Code of Record by excluding the stress limitation for allowable weld stresses in subparagraphs NF-3226.5, NF-3321.1(c), NF-3392.1, and Mandatory Appendix XVII, Figure XVII - 2211(c) of the 1974 Edition through the Summer 1975 Addenda. In the referenced letter GPC requested permission to use the allowable weld stresses in Table NF-3292.1-1 of the Code for piping supports.

The Code of Record for pipe support construction for Vogtle, Units 1 and 2 is ASME Section III, Subsection NF, "Component Supports," 1974 Edition through the Summer 1975 Addenda. In subparagraphs NF-3226.5, NF-3321.1(c), NF-3392.1 and Mandatory Appendix XVII, Figure XVII - 2211(c)-1 of the Code of Record, the allowable tensile stress at the contact surface of a weld which transmits a stress in the through thickness direction of plates and elements of rolled shapes is limited to the lesser of .30 times the tensile yield stress or .25 times the minimum tensile strength of the steel. The original objective of these very conservative allowable stresses was to minimize the potential for a failure in the support due to lamellar tearing. Lamellar tearing is a cracking phenomenon which can occur in the parent metal while it is cooling after the welding process. It is usually of concern only within large welded structures involving a high degree of stiffness and restraint. Industry experience indicated that the additional weld metal required by these conservative allowable stresses resulted in large weld sizes that did not relieve the problem of tearing of the base material. The additional weld metal can produce significant strains in the parent metal resulting in the joining up of base metal inclusions. Since the potential for lamellar tearing still existed, the ASME Subcommittee on Nuclear Power (SCIII) recognized the need for action to:

1. Delete the lower allowable stress limits
2. Provide guidance on welded joint design

8610060536 860929
PDR ADOCK 05000424
A PDR

The action to revise the allowable stresses was taken first since these low values were creating a problem. Therefore, the Winter 1978 Addenda to ASME Section III deleted these conservative allowable stresses from applicable portions of subparagraphs NF-3226.5, NF-3321.1(c), NF-3392.1, XVII-2211(c) and Figure XVII-2211(c)-1. The allowable stresses for these types of welds are now contained in Table NF-3929.1-1.

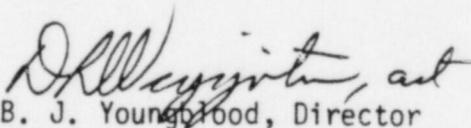
Action on the joint design was delayed because of the difficulty in developing requirements which would be universally applicable. As a result, it was not until the 1983 Edition of ASME Section III that subsection NF, Subparagraph NF-4430, "Special Requirements for Welding," was added to be applicable to large welded members of component supports, exclusive of piping supports. These new requirements are intended to be a more positive method of preventing lamellar tearing than the previous method of reducing allowable weld stresses. Piping supports were excluded from these requirements since their configuration and size are such that lamellar tearing is not a problem.

In the referenced letter, GPC requested permission to use the allowable weld stresses in Table NF-3292.1-1 for piping supports rather than the lower allowables in the Code of Record for Vogtle, Units 1 and 2. Based on the above discussion, we have concluded that this request can be granted with no adverse impact on the public health and safety.

This relief from the Code of Record is only applicable to welds in pipe supports. A separate request should be made if GPC intends to use the allowable stresses in NF-3292.1-1 for welds in any supports, other than for piping, which consists of plates or rolled shapes and transmits loads in the through thickness direction of the weld. If such a request is submitted, it should contain either a commitment to ASME Section III, 1983 Edition, Subsection NF-4430 or a detailed description of the welding joint design employed to minimize lamellar tearing in Vogtle, Units 1 and 2.

Accordingly, based upon the above review, the staff finds your proposal to be acceptable.

Sincerely,


B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

cc: See next page

Mr. R. E. Conway
Georgia Power Company

Vogtle Electric Generating Plant

cc:

Mr. L. T. Gucwa
Chief Nuclear Engineer
Georgia Power Company
P.O. Box 4545
Atlanta, Georgia 30302

Resident Inspector
Nuclear Regulatory Commission
P. O. Box 572
Waynesboro, Georgia 30830

Mr. Ruble A. Thomas
Vice President - Licensing
Vogtle Project
Georgia Power Company/
Southern Company Services, Inc.
P.O. Box 2625
Birmingham, Alabama 35202

Deppish Kirkland, III, Counsel
Office of the Consumers' Utility
Council
Suite 225
32 Peachtree Street, N.W.
Atlanta, Georgia 30303

Mr. Donald O. Foster
Vice President & Project General Manager
Georgia Power Company
Post Office Box 299A, Route 2
Waynesboro, Georgia 30830

James E. Joiner
Troutman, Sanders, Lockerman,
& Ashmore
Candler Building
127 Peachtree Street, N.E.
Atlanta, Georgia 30303

Mr. J. A. Bailey
Project Licensing Manager
Southern Company Services, Inc.
P.O. Box 2625
Birmingham, Alabama 35202

Danny Feig
1130 Alta Avenue
Atlanta, Georgia 30307

Ernest L. Blake, Jr.
Bruce W. Churchill, Esq.
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N.W.
Washington, D. C. 20036

Mr. G. Bockhold, Jr.
Vogtle Plant Manager
Georgia Power Company
Route 2, Box 299-A
Waynesboro, Georgia 30830

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

Mr. Richard Conway

- 2 -

29 SEP 1986

The action to revise the allowable stresses was taken first since these low values were creating a problem. Therefore, the Winter 1978 Addenda to ASME Section III deleted these conservative allowable stresses from applicable portions of subparagraphs NF-3226.5, NF-3321.1(c), NF-3392.1, XVII-2211(c) and Figure XVII-2211(c)-1. The allowable stresses for these types of welds are now contained in Table NF-3929.1-1.

Action on the joint design was delayed because of the difficulty in developing requirements which would be universally applicable. As a result, it was not until the 1983 Edition of ASME Section III that subsection NF, Subparagraph NF-4430, "Special Requirements for Welding," was added to be applicable to large welded members of component supports, exclusive of piping supports. These new requirements are intended to be a more positive method of preventing lamellar tearing than the previous method of reducing allowable weld stresses. Piping supports were excluded from these requirements since their configuration and size are such that lamellar tearing is not a problem.

In the referenced letter, GPC requested permission to use the allowable weld stresses in Table NF-3292.1-1 for piping supports rather than the lower allowables in the Code of Record for Vogtle, Units 1 and 2. Based on the above discussion, we have concluded that this request can be granted with no adverse impact on the public health and safety.

This relief from the Code of Record is only applicable to welds in pipe supports. A separate request should be made if GPC intends to use the allowable stresses in NF-3292.1-1 for welds in any supports, other than for piping, which consists of plates or rolled shapes and transmits loads in the through thickness direction of the weld. If such a request is submitted, it should contain either a commitment to ASME Section III, 1983 Edition, Subsection NF-4430 or a detailed description of the welding joint design employed to minimize lamellar tearing in Vogtle, Units 1 and 2.

Accordingly, based upon the above review, the staff finds your proposal to be acceptable.

Sincerely,

B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

cc: See next page

Distribution:

Docket File

NRC PDR

Local PDR

PRC System

PWR#4 Rdg

MDuncan

JPartlow

BGrimes

EJordan

NThomposon

BJYoungblood Rdg

JThompson

MMiller

PO'Connor

OGC-Bethesda

ACRS (10)

PWOP
PWR#4/DPWR-A
JThompson/mac
09/13/86

PWR#4/DPWR-A
MDuncan
09/18/86

OGC-Bethesda
B. J. Youngblood
09/22/86

BJW
PWR#4/DPWR-A
BJYoungblood
09/22/86