Duke Energy®

BRUCE H HAMILTON
Vice President
Oconee Nuclear Station

Duke Energy Corporation
ON01VP / 7800 Rochester Highway
Seneca, SC 29672

864 885 3487
864 885 4208 fax
bhhamilton@duke-energy.com

August 9, 2006

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy
Oconee Nuclear Station, Unit 1
Docket Nos. 50-269
Request for Relief No. 05-ON-004

By letter dated August 9, 2005, Duke Power Company (Duke), now Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC, submitted Request for Relief 05-ON-004, seeking relief from the requirement to examine 100% of the volume specified by the ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition with 2000 Addenda (as modified by Code Case N-460).

During the NRC review of this request, the reviewer communicated a Request for Additional Information to Duke via the NRC Project Manager assigned to Oconee.

Attachment 1 is a copy of the Request for Additional Information, followed by the Duke response to each question. This response should satisfy the reviewer's request.

In addition, Duke wishes to correct and enhance wording of Paragraphs F and G related to detection of leaks if the welds were to fail. Attachment 2 contains the revised wording to replace Paragraphs F and G. Actual changes to the paragraphs are indicated with change bars in the margin.

A047

Please refer any additional questions regarding either the relief request or this response to Randy Todd-ONS Regulatory Compliance at (864)885-3418.

Sincerely,

Bruce H Hamilton, Vice President
Oconee Nuclear Site

Attachment

xc w/att: Mr. William D. Travers
Administrator, Region II
U.S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth St., SWW, Suite 23T85
Atlanta, GA 30303

L. N. Olshan, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

xc(w/o attch):

D. W. Rich
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Henry Porter
Division of Radioactive Waste Management
Bureau of Land and Waste Management
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

ATTACHMENT 1

RESPONSE TO
REQUEST FOR ADDITIONAL INFORMATION
REQUEST FOR RELIEF No. 05-ON-004
Limited Volumetric Examination Coverage for
Inservice Inspection Program Welds
(TAC No. MC8198)

1) In the cover letter of your August 9, 2005, submittal, you indicate that there are four limited ultrasonic examinations on welds associated with various systems. On page 1 of 4 and throughout the Relief Request submittal, only three welds are discussed. Please indicate the correct number of welds involved and, as appropriate, submit the fourth weld for review.

2) Please submit a weld profile showing the limitation for summary number C05.021.001 for staff review.

3) The supplemental data provided under Summary numbers B09.011.032 and C05.021.082 do not indicate the weld identification numbers which are identified on page 1 of 4 of your submittal. Since the industry standard is to annotate the weld component/identification number on data, please annotate the subject weld identifications to correlate with your summary.

In response to question 1, you are correct. The cover letter is in error. Only three (3) welds are included in this request.

Questions 2 and 3 indicate that our relief was not appropriately precise:

In response to question 2, the weld profile was submitted as Attachment A, page 6 of 11, identified as a "Limitation Record" for "Summary No: C05.021.001"

In response to question 3, all Attachment A pages are labeled with the applicable Item Number, which is unique to the associated weld. The nomenclature used was not consistent from form to form, as described below.

From the table on Page 1 of 4, Column I indicates the assigned "Weld I.D. Number" and Column III indicates the associated "Item Number." These are both unique identifiers for the same weld. Thus:

"List number" 1 refers to "Weld I.D. Number" 1-PIA1-9, which also is "Item No." B09.011.032.

"List number" 2 refers to "Weld I.D. Number" 1-51A-01-79A, which also is "Item No." C05.021.001.

"List number" 3 refers to "Weld I.D. Number" 1-51A-01-106A, which also is "Item No." C05.021.082.

These "Item numbers" are used as the "Summary No." on the sheets in Attachment A. So the Attachment A pages 1, 2, 3 of 11 all are labeled as "B09.011.032". On page 1 of 11 the blank labeled as "Component ID:" contains both the "Item number" and the "Weld I.D. Number," "B09.011.032/1-PIA1-9".

Similarly, the Attachment A pages 4, 5, 6, 7 of 11 all are labeled as "C05.021.001". On page 4 of 11 the blank labeled as "Component ID:" contains both the "Item number" and the "Weld I.D. Number," "C05.021.001/1-51A-01-79A "

Attachment A pages 8, 9, 10, 11 of 11 all are labeled as " C05.021.082". On page 8 of 11 the blank labeled as "Component ID:" contains both the "Item number" and the "Weld I.D. Number," "C05.021.082/1-51A-01-106A."

ATTACHMENT 2

PARTIAL REVISION TO
REQUEST FOR RELIEF No. 05-ON-004
Limited Volumetric Examination Coverage for
Inservice Inspection Program Welds
(TAC No. MC8198)

Replacement
Paragraph F:

Ultrasonic examination of areas/welds for item number B09.011 were conducted using personnel, equipment and procedures qualified in accordance with ASME Section XI, Appendix VIII Supplement 2 of the 1995 Edition with the 1996 Addenda as administered by the PDI. Although 100% coverage of the examination volume could not be achieved, the amount of coverage obtained for this weld provides an acceptable level of quality and integrity. In addition to the volumetric examination with limited coverage, Duke Energy performed a surface examination (code required) on this weld and achieved 100% coverage. The result from the surface examination was acceptable.

In addition to the B09.011 weld that relief is being requested for limited volume coverage, there were 4 additional BG9.011 welds that surface and volumetric examinations were performed on. The examinations didn't identify any recordable indications and 100% coverage was obtained on each of them. The 4 additional welds were from the same system as the B09.011 weld of this request.

Duke Energy will use Class I, Examination Category B-P, pressure testing and VT-2 visual examination to compliment the limited scan examinations. The Code requires that a pressure test be performed after each refueling outage for Class 1. These tests require a VT-2 visual examination for evidence of leakage. This testing provides adequate assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), there are other activities which provide a high level of confidence that, in the unlikely event that leakage did occur through this weld, it would be detected and isolated. Specifically,

Technical Specification 3.4.13, "Reactor Coolant System Leakage" requires evaluation of Reactor Coolant system (RCS) leakage every 72 hours. This requirement is met using procedure PT/1/A/0600/10, "RCS Leakage," which is performed daily. In addition, Technical Specification 3.4.15, "RCS Leakage Detection Instrumentation" requires that a Reactor Building normal sump level indicator and a containment atmosphere radioactivity monitor be operable for RCS leakage detection. This requirement is met using the normal sump level indicator and the Reactor Building air particulate monitor (1RIA-47). An unexpected loss of level in the Letdown Storage Tank is another indication of potential RCS leakage. Based on the results of the Required volumetric, surface and VT-2 examinations performed during this outage, it is Duke's belief that this combination of examinations provides a reasonable assurance of component integrity.

Replacement:
Paragraph G:

Ultrasonic examination of areas/welds for the item numbers C05.021 were conducted using personnel, equipment and procedures qualified in accordance with ASME Section XI, Appendix VIII Supplement 2 of the 1995 Edition with the 1996 Addenda as administered by the PDI. Although 100% coverage of the examination volume could not be achieved, the amount of coverage obtained for each of these welds provides an acceptable level of quality and integrity. In addition to the volumetric examinations with limited coverage, Duke Energy performed a surface examination (code required) on each of the C05.021 items and achieved 100% coverage. The results from the surface examinations were acceptable.

In addition to the C05.021 welds for which relief is being requested for limited volume coverage, there were 7 additional C05.021 welds on which surface and volumetric examinations were performed. The examinations didn't identify any recordable indications and 100% coverage was obtained on each of them. The 7 additional welds were from the same system as the C05.021 welds of this request.

Duke Energy Corporation does not claim credit for coverage of the far side of austenitic welds. The characteristics of austenitic weld metal attenuate and distort the sound beam when shear waves pass through the weld. Refracted longitudinal waves provide better penetration but cannot be used beyond the first path leg. Duke Energy Corporation uses a combination of shear waves and longitudinal waves to examine single sided austenitic welds when the nominal material thickness exceeds 0.5 inch. A 70° shear wave angle beam is used to interrogate the far side of the weld when the nominal material thickness is equal to or less than 0.5 inch and a 60° refracted longitudinal wave is used to interrogate the far side of the weld when the nominal material thickness is greater than 0.5 inch.

Duke Energy will use Class 2, Examination Category C-H, pressure testing and VT-2 visual examination to compliment the limited examination coverage. The Code requires that a pressure test be performed once each period for Class 2 items. These tests require a VT-2 visual examination for evidence of leakage. This testing provides adequate assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), there are other activities which provide a high level of confidence that, in the unlikely case that leakage did occur through these welds, it would be detected and action taken.

First, Technical Specification 3.4.13, "Reactor Coolant System Leakage," requires evaluation of Reactor Coolant System (RCS) leakage every 72 hours. This requirement is met using procedure PT/1/A/0600/10, "RCS Leakage," which is performed daily. Welds 1-51A-01-79A and 1-51A-01-106A are within the scope of PT/1/A/0600/10 such that any detectable leakage through either of these welds would be identified.

Second,welds 1-51A-01-79A and 1-51A-01-106A are on the High Pressure Injection System in the Auxiliary Building. The Nuclear Equipment Operators conduct regular rounds in the area during each shift. Procedure OP/1/A/1102/020A, "Primary Rounds," addresses leaks as being an item to consider during

rounds and the Nuclear Equipment Operator has been trained to look for any unusual conditions, such as leaks.

Third, sufficient leakage at these weld locations would result in an unexpected loss of level in the Letdown Storage Tank, which is another indication of potential RCS leakage.

Duke Energy has examined the weld components referenced in this request to the maximum extent possible utilizing the latest in examination techniques and equipment. The welds/components identified in Section I1 of this request were rigorously inspected by volumetric NDE methods during construction and verified to be free from unacceptable fabrication defects. Based on the coverage and results of the required volumetric exams, surface exams, and the pressure testing (VT-2) exams during this outage, it is Duke's belief that this combination of examinations provides a reasonable assurance of component integrity.