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

January 31, 2007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Duke Power Company LLC, d/b/a Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3
Dockets Nos. 50-269, 270, and 287
Inspection and Mitigation of Alloy 82/182 Pressurizer Butt Welds

In October of 2006, while performing inspections of its pressurizer Alloy 82/182 butt welds in accordance with MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guideline," a pressurized water reactor licensee discovered several circumferential indications in its pressurizer surge, safety, and relief nozzles. Because of the potential importance of this issue, Duke is submitting this letter to notify the NRC regarding Oconee's actions taken or planned for inspecting or mitigating Alloy 600/82/182 butt welds on pressurizer spray, surge, and relief lines.

This letter contains four attachments. Attachment 1 is a description of the current Reactor Coolant System (RCS) leakage monitoring program for Oconee Units 1, 2, and 3. Attachment 2, 3, and 4 are compilations of the inspection and mitigation effort for pressurizer Alloy 600/82/182 butt welds for Oconee Units 1, 2, and 3. Details concerning the locations inspected and mitigated are provided in Attachments 2, 3, and 4. Future inspections of pressurizer butt welds at Oconee Units 1, 2, and 3 will be performed in accordance with ASME Code and MRP-139.

A110

The NRC will be informed if Oconee revises any of the information contained in this letter.

Our staff is available to meet with the NRC to discuss any of the information contained in this letter. If there are any questions, please contact Reene' Gambrell at (864) 885-3364.

Very truly yours,

B.H. Hamilton, Vice President
Oconee Nuclear Site

Attachment 1 Reactor Coolant System Leakage Monitoring Program
2 Oconee Unit 1 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds
3 Oconee Unit 2 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds
4 Oconee Unit 3 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

cc: Mr. L. N. Olshan, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop O-14 H25
Washington, D.C. 20555

Dr. W. D. Travers, Regional Administrator
U.S. Nuclear Regulatory Commission - Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

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

Mr. Henry Porter, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health & Environmental Control
2600 Bull Street
Columbia, S.C. 29201

bcc:

L. F. Vaughn
R. L. Gill - NRI&A
C. J. Thomas - MNS
R. D. Hart - CNS
S. D. Capps
P. E. Mabry
J. A. Patterson
P. A. Wells
D. W. Peltola
R. C. Gamberg
D. V. Deatherage
S. L. Batson
D. B. Coyle
K. R. Redmond
R. V. Gambrell
B. G. Davenport
BWOG Working Group
ONS Document Management
ELL
NSRB
NEI

U.S. Nuclear Regulatory Commission
January 31, 2007

Attachment 1
Reactor Coolant System Leakage Monitoring Program

U. S. Nuclear Regulatory Commission
January 31, 2007

Attachment 1

A water inventory balance program monitors reactor coolant leakage with established limits for continued operation specified in the technical specifications. This program will measure any leakage from components and small diameter nozzles as unidentified system leakage, which has an established operational limit of less than 1.0 gallons per minute. More restrictive plant procedures require an assessment of potential leak sources whenever unidentified leakage exceeds 0.15 gallons per minute. If leakage exceeds the more restrictive limit and the leak source remains unidentified, plant management would assess what additional leak investigation activities are required, or if plant shutdown is necessary.

If leakage increases based on the mass balance, limited walk downs at power would be performed to identify the source of the leakage. Evidence of leakage is evaluated and resolved through the corrective action program and Fluid Leak Management Program.

U. S. Nuclear Regulatory Commission
January 31, 2007

Attachment 2
Oconee Unit 1 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Attachment 2. Oconee Unit 1 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Nozzle		MRP-139 Volumetric Inspection Requirement Met or to be Met		Mitigation3 Completed or to be Completed (Start Date)	Comments
Function / Designation	**Susceptible Material Description**	**Outage Designation**	**Start Date (MM/YYYY)**	**Outage Designation**	
Spray Nozzle 1-PZR-WP45 Pipe weld 1-PSP-1	Nozzle to safe-end weld, safe-end, and safe-end to pipe weld	NA[1]	NA[1]	1EOC 23 10/2006	Bare Metal Visual[2] per NRC Bulletin 2004-01: 1EOC 22, 4/2005.
Surge 1-PZR-WP23	Nozzle to safe-end weld	NA[1]	NA[1]	1EOC 23 10/2006	Bare Metal Visual[2] per NRC Bulletin 2004-01: 1EOC 22, 4/2005.
Safety 1-PZR-WP91-2	Nozzle to flange weld	NA[1]	NA[1]	1EOC 23 10/2006	Bare Metal Visual[2] per NRC Bulletin 2004-01: 1EOC 22, 4/2005.
Safety 1-PZR-WP91-3	Nozzle to flange weld	NA[1]	NA[1]	1EOC 23 10/2006	Bare Metal Visual[2] per NRC Bulletin 2004-01: 1EOC 22, 4/2005.
Relief 1-PZR-WP91-1	Nozzle to flange weld	NA[1]	NA[1]	1EOC 23 10/2006	Bare Metal Visual[2] per NRC Bulletin 2004-01: 1EOC 22, 4/2005.

Note 1. Welds did not receive a PDI qualified examination prior to mitigation.
Note 2. Bare Metal Visual inspections detected no evidence of cracking or borated water leakage.
Note 3. Mitigation by full structural weld overlay.

U. S. Nuclear Regulatory Commission
January 31, 2007

Attachment 3
Oconee Unit 2 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Attachment 3: Oconee Unit 2 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Nozzle		MRP-139 Volumetric Inspection Requirement Met or to be Met		Mitigation3 Completed or to be Completed (Start Date)	Comments
Function / Designation	**Susceptible Material Description**	**Outage Designation**	**Start Date (MM/YYYY)**	**Outage Designation**	
Spray Nozzle 2-PZR-WP45 Pipe Weld 2-PSP-1	Nozzle to safe-end weld, safe-end, and safe-end to pipe weld	NA[1]	NA[1]	2 EOC 22 4/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01 conducted 2EOC 21, 10/2005.
Surge 2-PZR-WP23	Nozzle to safe-end weld	NA[1]	NA[1]	2 EOC 22 4/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01 conducted 2EOC 21, 10/2005.
Safety 2-PZR-WP91-2	Nozzle to flange weld	NA[1]	NA[1]	2 EOC 22 4/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01 conducted 2EOC 21, 10/2005.
Safety 2-PZR-WP91-3	Nozzle to flange weld	NA[1]	NA[1]	2 EOC 22 4/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01 conducted 2EOC 21, 10/2005.
Relief 2-PZR-WP91-1	Nozzle to flange weld	NA[1]	NA[1]	2 EOC 22 4/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01 conducted 2EOC 21, 10/2005.

Note 1. No PDI qualified inspections have been conducted in the previous two refueling outages for these locations.
Note 2. Bare Metal Visual inspections detected no evidence of cracking or borated water leakage.
Note 3. Mitigation by full structural weld overlay.

U. S. Nuclear Regulatory Commission
January 31, 2007

Attachment 4
Oconee Unit 3 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Attachment 4: Oconee Unit 3 Inspection and Mitigation Summary for Alloy 600/82/182 Pressurizer Butt Welds

Nozzle		MRP-139 Volumetric Inspection Requirement Met or to be Met		Mitigation3 Completed or to be Completed (Start Date)	Comments
Function / Designation	**Susceptible Material Description**	**Outage Designation**	**Start Date (MM/YYYY)**	**Outage Designation**	
Spray Nozzle 3-PZR-WP45 Pipe Weld 3-PSP-1	Nozzle to safe-end weld, safe-end, and safe-end to pipe weld	NA[1]	NA[1]	3 EOC 23 10/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01: 3EOC 21, 10/2004; 3EOC 22, 4/2006.
Surge 3-PZR-WP23	Nozzle to safe-end weld	NA[1]	NA[1]	3 EOC 23 10/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01: 3EOC 21, 10/2004; 3EOC 22, 4/2006.
Safety 3-PZR-WP91-2	Nozzle to flange weld	NA[1]	NA[1]	3 EOC 23 10/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01: 3EOC 21, 10/2004; 3EOC 22, 4/2006.
Safety 3-PZR-WP91-3	Nozzle to flange weld	NA[1]	NA[1]	3 EOC 23 10/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01: 3EOC 21, 10/2004; 3EOC 22, 4/2006.
Relief 3-PZR-WP91-1	Nozzle to flange weld	NA[1]	NA[1]	3 EOC 23 10/2007	Bare Metal Visual[2] per NRC Bulletin 2004-01: 3EOC 21, 10/2004; 3EOC 22, 4/2006.

Note 1. These welds have not been inspected using PDI qualified techniques during the last two refueling outages.
Note 2. The Bare Metal Visual inspections detected no evidence of cracking or borated water leakage.
Note 3. Mitigation by full structural weld overlay.