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AUTHOR: Marvin Fertel
AFFILIATION: NEI
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NUCLEAR ENERGY INSTITUTE

Marvin S. Fertel
EXECUTIVE VICE PRESIDENT AND
CHIEF NUCLEAR OFFICER

September 19, 2008

The Honorable Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission
Mail Stop O-16 C1
Washington, DC 20555-0001

Subject: April 28 Commission Briefing on Industry Materials Initiative

Project Number: 689

Dear Chairman Klein:

During the industry's Materials Initiative briefing to the Commission on April 28, 2008, the Commission asked if we would inform them of the results of the destructive examination of the retired St. Lucie pressurizer nozzle dissimilar metal weld. We agreed to inform the Commission of these results after the studies were completed.

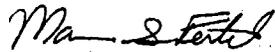
The results of the St. Lucie Unit 1 retired pressurizer safety nozzle 'A' are complete. The report was submitted by EPRI Materials Reliability Program (MRP) to NRC research in MRP letter 2008-054, dated August 15, 2008. Enclosed for your information are MRP letters 2008-54 and MRP 2008-53, which summarized and transmitted the results to the industry. The results confirmed the indications and flaws within the 'A' safety nozzle were fabrication defects and not structurally significant.

As discussed during the briefing, industry senior executives are committed to the Materials Initiative which will support safe, reliable and efficient operation through the management of materials issues. We are assessing the effect of the Initiative on industry's management of materials issues. During the April briefing we agreed to send the report documenting the results of this assessment to the Commission. This document will be forwarded under separate cover.

The Honorable Dale E. Klein
September 19, 2008
Page 2

If you need further information, please contact me at 202-739-8125; msf@nei.org or Alex Marion at 202-739-8080; am@nei.org.

Sincerely,



Marvin S. Fertel

Enclosures

- c: The Honorable Gregory B. Jaczko, Commissioner, NRC
- The Honorable Peter B. Lyons, Commissioner, NRC
- The Honorable Kristine L. Svinicki, Commissioner, NRC
- Mr. R. William Borchardt, Executive Director for Operations, NRC
- Mr. Bruce S. Mallett, Deputy Executive Director for Reactor
and Preparedness Programs, NRC
- Mr. Eric J. Leeds, Director, Office of Nuclear Reactor Regulation, NRC
- Mr. Michael R. Johnson, Director, Office of New Reactors, NRC
- NRC Document Control Desk

MRP Materials Reliability Program _____ **MRP 2008-053**
(via email)

August 12, 2008

To: MRP Technical Advisory Group

Subject: St. Lucie Unit 1 Retired PZR Safety "A" Nozzle DM Weld Destructive
Examination Report

References

1. MRP 2008-027, "Non Destructive Examination Summary of Pressurizer Safety Nozzles Removed from Service at St Lucie Unit 1"

In the fall of 2005 the pressurizer vessel, manufactured by Combustion Engineering, from the St. Lucie Unit 1 Nuclear Power Station was removed from service and replaced. FPL donated the Alloy 82/182 dissimilar metal (DM) welded nozzles in the top and bottom heads of the retired pressurizer to the NRC Office of Research (NRC RES) in 2007. In February 2008, EPRI MRP voluntarily funded performance of a PDI-qualified manual phased array UT exam of these nozzles to screen them for flaws or other features of potential interest for further evaluation.

The inspection report, documented in Reference 1, conservatively indicated the possible existence of a 360° planar flaw of varying but locally significant depth in the three safety nozzles. The report noted that the indications were consistent with PWSCC, but also with stacked fabrication defects in the weld. In addition, application of encoded phased array examination techniques was recommended to more precisely discriminate these reflectors and determine the condition of the welds.

The potential for a large circumferential flaw, even in a retired component, cast doubt on the safety of uninspected pressurizer nozzle welds remaining in service in the US PWR fleet and led to an immediate, extensive, non-destructive re-examination of the retired pressurizer welds employing fully encoded phased array techniques, encoded ECT examination of the ID surfaces, and high resolution radiography. The methods and results of this re-examination are also fully documented in Reference 1.

These results conclusively demonstrated that while the welds contained a number of fabrication-related defects, there was no evidence of PWSCC and no conditions that would have threatened pressure boundary integrity. Upon completion of these non-destructive examinations, the portion of the "Safety A" nozzle containing the DM weld was removed and sent to a lab for destructive examination to verify the NDE results.

Attachment 1 to this letter is the complete, final lab report of the destructive examination that was performed. Attachment 2 is the final destructive examination plan that was developed by industry and the NRC to guide the lab work and is provided here for reference.

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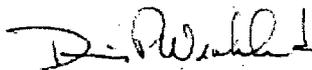
3420 Hillview Avenue, Palo Alto, CA 94304-1338 USA • 650.855.2000 • Customer Service 800.313.3774 • www.epri.com

The destructive evaluation confirmed the indications and flaws found within the retired pressurizer safety "A" nozzle are fabrication defects with no evidence of PWSCC. The flaws were also confirmed to be non-safety significant and did not challenge the structural integrity of the component.

A careful evaluation of the comparative results from the NDE and DE may be useful in validating and possibly refining industry NDE capabilities. The MRP Inspection ITG has assumed responsibility for any such evaluation and will consider the scope, timing, and potential benefit within the context of their normal project planning and budgeting.

If you have any questions or concerns, please contact Craig Harrington (charrington@epri.com, 972-556-6519).

Best Regards,



Denny Weakland
First Energy
Chairman MRP IIG

Attachment: SL-1 DE Report

Cc: Greg Kammerdeiner, First Energy
Craig Harrington, EPRI
PMMP EC
MRP IIG
MRP Assessment ITG
MRP Inspection ITG

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MRP Materials Reliability Program _____ MRP 2008-054
(via email)

August 15, 2008

US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Two White Flint North
11545 Rockville Pike
Rockville, Maryland 20852-2738

Attn: Bob Hardies M/S T10-M05

Subject: St. Lucie Unit 1 Retired PZR Safety "A" Nozzle DM Weld Destructive
Examination Report

References

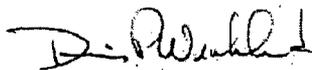
1. MRP 2008-027, "Non Destructive Examination Summary of Pressurizer Safety Nozzles Removed from Service at St Lucie Unit 1"

The destructive examination report for the St. Lucie Unit 1 retired pressurizer Safety "A" nozzle dissimilar metal weld has been finalized and transmitted to the MRP members for their information as a non-proprietary letter report designated MRP 2008-053.

By this present letter, we are forwarding that letter report to you for your information and use.

If you have any questions or concerns, please contact Craig Harrington (charrington@epri.com, 972-556-6519).

Best Regards,



Denny Weakland
First Energy
Chairman MRP IIG

Attachment: MRP 2008-053

Cc: Greg Kammerdeiner, First Energy
Craig Harrington, EPRI
Joe Hagan, First Energy

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