

CATEGORY 1

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ARCHI, M.L. Wisconsin Public Service Corp.
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SUBJECT: Forwards response to violations noted in insp rept
50-305/97-08. Corrective actions: re-review of all visual &
eddy current exam records for ABB-Combustion Engineering TIG
welds performed prior to returning SG to svc.

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Public Service

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August 15, 1997

10 CFR 2.201

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

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reply to Notice of Violation, Inspection Report 97-008

Reference: 1) Letter from J.A. Grobe (NRC) to M.L. Marchi (WPSC) dated July 16, 1997
(NRC Inspection Report 50-305/97008(DRS) and Notice of Violation).

In the reference, the Nuclear Regulatory Commission (NRC) provided Wisconsin Public Service Corporation (WPSC) with the results of the NRC inspection activities conducted April 8, 1997 through June 12, 1997. During the inspection, the NRC identified one Severity Level IV violation for the failure to detect a steam generator tube sleeve weld defect during visual examinations.

Attached is our response to the notice. If you have any questions regarding this response, please contact me or a member of my staff.

Sincerely,

M. L. Marchi
Manager - Nuclear Business Group

TPO

Attach.

cc - US NRC Senior Resident Inspector
US NRC Region III

10/21/97

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ATTACHMENT 1

Letter from M. L. Marchi (WPSC)

To

Document Control Desk (NRC)

Dated

August 15, 1997

Re: Reply to Notice of Violation, Inspection Report 97-008

NRC Notice of Violation 97-008-01 (50-305/97008-01)

Criterion V of 10 CFR 50, Appendix B, requires, in part, that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

ABB-Combustion Engineering, nondestructive examination procedure STD-400-157, Revision 3, "Visual examination of Steam Generator Tube Sleeve and Sleeve Plug Welds," paragraph 7.0, "Acceptance Criteria," states, in part, that welds with blow holes within the pressure boundary are not acceptable.

Contrary to the above, on June 1, 1997, during review of visual inspection tapes of sleeve welds, the inspector identified that the sleeve weld in steam generator A tube row 10 column 49 had blow holes which were unacceptable in accordance with the above procedure requirements. This weld was identified as leaking during a secondary side leak test.

WPSC Response

Wisconsin Public Service Corporation does not contest this violation. WPSC's assessment of the condition found that leakage testing revealed the flaw in the subject tube. This testing precluded placing the Steam Generators (SGs) in service with the unacceptable condition. Therefore, there was no impact on public health or safety.

Reason for Violation

The subject leaking tube, row 10 column 49 in steam generator A, was a resleeved tube, i.e., the defective hybrid expansion joint (HEJ) sleeve was removed and a new, replacement sleeve was installed. The removal of sleeves was accomplished by cutting below the HEJ. The HEJ was then kinetically expanded to allow a new sleeve to be installed. The new sleeves were of ABB-Combustion Engineering design, which employed the use of a tungsten inert gas (TIG) weld to attach the sleeve to the tube. The TIG weld acts as a primary pressure boundary. Following the TIG welding of the replacement sleeves, the welds were subject to a visual (VT) examination, followed by an ultrasonic (UT) examination, followed by a plus-point eddy current (ET) examination.

The initial nondestructive examinations on row 10 column 49 were all acceptable. Prior to placing the A steam generator back in service, a secondary pressure test was conducted at approximately 100 psid. During this pressure test, row 10 column 49 was identified by WPSC as leaking (approximately 10 drops/minute). Subsequent visual examinations of the weld identified a leak from a small blow hole in the weld area of the replacement sleeve. Upon identification of the leaking sleeve, the visual, ultrasonic, and eddy current examination results for the leaking sleeve were reviewed.

The visual examination review identified a blow hole in the weld surface which was missed during the initial visual examination. Discussions with ABB-Combustion Engineering following the identification of the leaking sleeve resulted in their concurrence that the initial visual examination should have identified the blow hole, but, due to personnel error, was erroneously reported as acceptable.

The ultrasonic and eddy current nondestructive examinations re-review were acceptable. The initial ET identified a weld zone indication in a different area than the blow hole location which was later dispositioned as No Defect Detected upon reexamination with a magnetic biased plus point probe. Further review of the ET data identified a small amplitude signal at the blow hole location. This signal was not reported by the eddy current analysts as it was just on the threshold of detection.

Corrective Actions

A re-review of all visual and eddy current examination records for the ABB-Combustion Engineering TIG welds was performed prior to returning the steam generator to service. In addition, approximately 50% of the ultrasonic examination records were reviewed. The VT and UT re-review did not identify any additional tube locations where indications were missed. The ET data was reanalyzed with the awareness that small amplitude signals at the detection threshold may be indicative of potential leak paths through the weld zone. The ET reanalysis identified two additional welds with small amplitude signals similar to the leaking tube location.

Document Control Desk
August 15, 1997
Attachment 1, Page 3

The leaking tube, as well as the two locations with similar eddy current signatures as the leaking tube, were plugged prior to returning the steam generator to service.

To preclude a similar event from occurring in the future, WPSC will require an independent review of all steam generator tubing nondestructive examination results.

Compliance Schedule

Procedures will be in place to require an independent review of all steam generator tubing nondestructive examination results prior to the next refueling outage, currently scheduled for September 1998.