

SEP 21 1990

In Reply Refer To:  
Docket: STN 50-482/90-08

Wolf Creek Nuclear Operating Corporation  
ATTN: Bart D. Withers  
President and Chief Executive Officer  
P.O. Box 411  
Burlington, Kansas 66839

Gentlemen:

Thank you for your letter of August 9, 1990, in response to our letter dated June 11, 1990. We have reviewed your reply and find it responsive to the concern raised in our letter regarding erosion/corrosion detection.

Sincerely,

Original Signed By:  
Thomas P. Gwynn

Samuel J. Collins, Director  
Division of Reactor Projects

cc:  
Wolf Creek Nuclear Operating Corp.  
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RIV:C:MQPS  
IBarnes/cjg  
9/19/90

D:DRS

LJCallan  
9/20/90

D:DRP

SJCollins  
9/20/90

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Wolf Creek Nuclear Operating  
Corporation

-2-

Wolf Creek Nuclear Operating Corp.  
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Topeka, Kansas 66612

Attorney General  
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Topeka, Kansas 66612

Chairman, Coffey County Commission  
Coffey County Courthouse  
Burlington, Kansas 66839

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bcc to DMB (IE01)

bcc distrib. by RIV:

Wolf Creek Nuclear Operating  
Corporation

-3-

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MIS System  
Project Engineer (DRP/D)  
DRS

Resident Inspector  
DRP  
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RSTS Operator  
Lisa Shea, RM/ALF  
I. Barnes

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

AUG 14 1990

Bart D. Withers  
President and  
Chief Executive Officer

August 9, 1990

WM 90-0139

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, D. C. 20555

Subject: Docket No. 50-482: Response to Inspection Report 90-08

Gentlemen:

Attached is Wolf Creek Nuclear Operating Corporation's (WCNOC) response to the request to review and evaluate the effectiveness of the techniques being used to detect erosion/corrosion degradation. WCNOC has conducted a review of the effectiveness of the techniques utilized at Wolf Creek Generating Station (WCGS) and concluded that the existing erosion-corrosion program is effective in identifying wall thinning due to inside diameter pitting as well as non-relevant volumetric anomalies.

If you have any questions concerning this matter, please contact me or Mr. H. K. Chernoff of my staff.

Very truly yours,



Bart D. Withers  
President and  
Chief Executive Officer

BDW/aem

Attachment

cc: R. D. Martin (NRC), w/a  
D. V. Pickett (NRC), w/a  
M. E. Skow (NRC), w/a  
J. S. Wiebe (NRC), w/a

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**Response to Inspection Report 90-08**

Concern:

The results of the examination for erosion/corrosion of selected components from the Essential Service Water System revealed isolated areas that appeared to have pits or material anomalies. Thickness measurements taken by the NRC inspectors were compared to those taken by the licensee to verify areas which may be below minimum wall thickness. Because of the two different instruments used in taking measurements (NRC used a Nova D100 digital gage the licensee used a Krautkramer USD-10 Ultrasonic Flaw Detector) there were areas that required further investigation, this was accomplished by having the NRC inspector and the licensee's inspector take the two instruments and compare the individual thickness readings. Using the digital thickness gage the indications were easily found and duplicated, however, the Ultrasonic Flaw detector could not find the same indications. The indications identified did not appear to be significant enough to threaten the integrity of the components. However, the issue was identified to licensee management so that they can review the effectiveness of the techniques being used in the erosion-corrosion program and take any appropriate corrective actions.

Response:

Wolf Creek Nuclear Operating Corporation (WCNOC) conducted a review of the examination techniques used in the erosion-corrosion program. The review encompassed a comparison of the operating characteristics of the examination instruments utilized by the NRC and WCNOC examiners, a review of records associated with the components selected for examination by the NRC, and a review of the qualifications of the examined and subsequent evaluations. The results of the review are discussed below.

The examination instrument used by the NRC contractors was a Nova D100 digital gage. This instrument is typical of all digital read-out thickness instruments, including those used at Wolf Creek Generating Station (WCGS). The digital instruments produce a sound wave that when reflected off a volumetric anomaly (such as a small inclusion) or the inside diameter (I.D.) of the pipe, the signal is measured and displayed as a digital read-out. The read-out will be the distance to the anomaly or the back wall of the pipe.

For the erosion-corrosion program, WCNOG uses a Krautkramer Branson DMX-1 digital read-out thickness gage for initial examinations. If the initial examination identifies wall thickness violations and near minimum wall thickness violations with possible isolated pits a follow-up examination is performed using a Krautkramer Branson USD-10. This methodology is consistent with the vendor recommendations for the DMX-1. The vendor recommendations indicate that during testing if the instrument (DMX-1) suddenly reads a value which is much thinner than the apparent thickness of the part, it may be reading the distance to a flaw rather than the distance to the back wall. If the condition occurs, the part should be examined with an ultrasonic flaw detection instrument or other suitable nondestructive testing method to determine the cause of the suspicious reading.

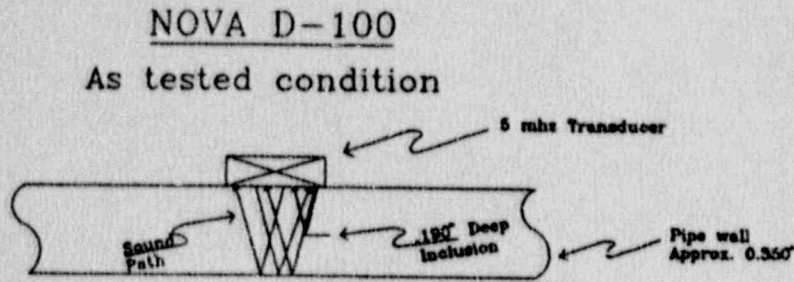
The USD-10 is a state-of-the-art, versatile flaw detection instrument utilized to evaluate and size small anomalies found during erosion-corrosion and Inservice inspection examinations. The signal from the I.D. surface as well as volumetric anomalies will be detected and displayed on the screen which allows evaluation of the signal. Figure 1 illustrates the D100 and the USD-10 displays.

WCNOG performed an examination of the isolated areas that appeared to have anomalies with the DMX-1 instrument and identified the same anomalies as the NRC had identified. A follow-up examination using the USD-10 was performed. The areas were examined and no relevant I.D. flaws or significant volumetric flaws were identified. This is based on an evaluation of the USD-10 signal that displayed a back wall reflection at the nominal wall value (0.350"). The signal from the anomaly was the same amplitude as that contained in the noise level of the scope indicating that the signal recorded by the Nova D100 was the result of a small material anomaly (such as an inclusion).

A review of examination records of the areas identified in Attachment #3a of the NRC inspection report identified that the readings by WCNOG examiners are consistent with the NRC's with the exception of location 13E. This reading is surrounded by readings consistently at .350" or above indicating an isolated reading. As mentioned above, an examination and evaluation using the USD-10 confirmed that there were no relevant indications. The WCNOG examiner performing the examination and evaluation is certified by Electric Power Research Institute (EPRI) in intergranular stress corrosion cracking (IGSCC) flaw detection. Examinations using the DMX-1 and the USD-10 are performed by Level II examiners.

Based upon the above information, WCNOG has concluded that the existing erosion-corrosion program is effective in identifying wall thinning due to I.D. pitting as well as non-relevant volumetric anomalies.

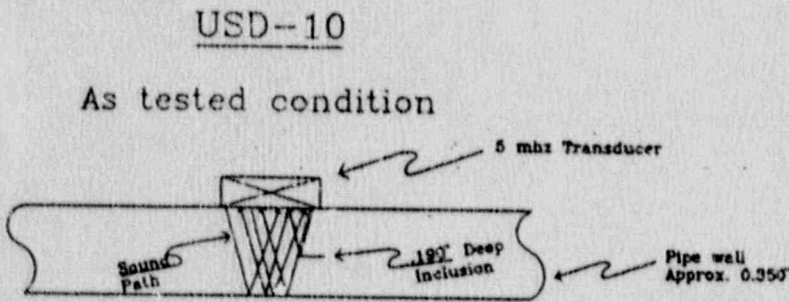
Figure 1



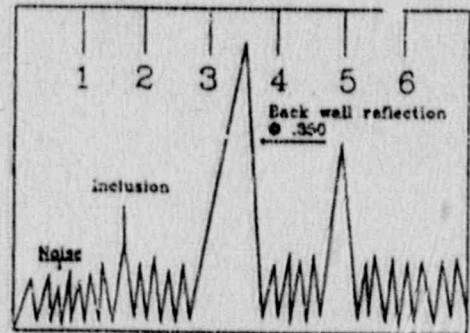
Screen display

0.190

"First" signal back  
displayed as wall  
thickness



Screen display



Back wall @ .350"  
Inclusion indication  
noted in noise level