



Jaime H. McCoy
Vice President Engineering

November 30, 2016

ET 16-0034

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

Reference: 1) Letter ET 16-0019, dated August 23, 2016, from J. H. McCoy, WCNO, to USNRC

2) Electronic mail dated November 1, 2016, from B. K. Singal, USNRC, to W. T. Muilenburg, WCNO

Subject: Docket No. 50-482: Response to Request for Additional Information Regarding 10 CFR 50.55a Request I3R-13

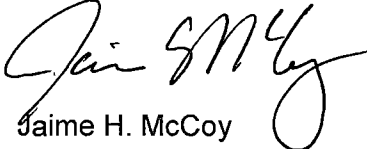
Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNO) 10 CFR 50.55a Request Number I3R-13 for the Third Ten-Year Interval of WCNO's Inservice Inspection (ISI) Program.

Reference 2 provided a request for additional information (RAI) from the Nuclear Regulatory Commission (NRC) regarding 10 CFR 50.55a Request Number I3R-13. The attachment provides WCNO's response to the information requested in the RAI.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4156, or Cynthia R. Hafenstine (620) 364-4204.

Sincerely,



Jaime H. McCoy

JHM/rlt

Attachment: Response to Request for Additional Information, 10 CFR 50.55a Request I3R-13

cc: K. M. Kennedy (NRC), w/a
B. K. Singal (NRC), w/a
N. H. Taylor (NRC), w/a
Senior Resident Inspector (NRC), w/a

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Response to Request for Additional Information, 10 CFR 50.55a Request I3R-13

By letter dated August 23, 2016 (ADAMS Accession No. ML16243A039), Wolf Creek Nuclear Operating Corporation (WCNOC) requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), specifically related to ASME Code Case N-460 "Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1." 10 CFR 50.55a Request Number I3R-13 pertains to the examination coverage of the Class 1 and 2 piping welds at the Wolf Creek Generating Station (WCGS). To complete its review, the U.S. Nuclear Regulatory Commission (NRC) staff requests additional information. The specific NRC questions are provided in italics.

NRC Request 1:

1. *Given the susceptibility to thermal fatigue and the reduced coverage obtained, and for assurance of structural integrity of unexamined volume of the weld, please provide cumulative fatigue usage (CFU) factor for each weld.*

WCNOC Response 1:

See the attached table for the CFU factor for each weld. Note that 3 of the welds are Class 2, and no CFU factor is available for the Class 2 welds.

Weld No.	ASME Code Class	CFU factor
BB-02-F019	1	0.970
BB-02-FW301	1	0.910
BG-21-F013B	1	0.910
EJ-04-F048A	1	0.130
EP-01-MW7152	2	No CFU factor available
EP-02-MW7162	2	No CFU factor available
EP-01-MW7165	2	No CFU factor available

NRC Request 2:

2. *The NRC staff notes that the refracted longitudinal (L) waves have shown to have better penetration capability in the cast austenitic stainless steel and austenitic stainless steel materials, and they could be used as an extra effort to scan the far-side of examination volume ("Best Effort" examination). The NRC staff also notes that the "Best Effort" examination is not a requirement. Given the reduced inspection coverage of the weld under consideration:*
 - a. *Please discuss whether the license performed the "Best Effort" examination as an extra effort to interrogate the required downstream examination volume (far-side), particularly the root of the weld and the heat affected zone (HAZ) of the base materials typically susceptible to high stresses and potential degradation. If the "Best Effort" examination was not performed please explain the reasons.*
 - b. *Please provide percentage of coverage obtained from the "Best Effort" examination if this examination was performed.*

WCNOC Response 2:

- a. A "best effort" supplemental examination was performed on each weld following the direction listed in step 6.8 of The Electric Power Research Institute (EPRI) Generic Performance Demonstration Initiative (PDI) procedure PDI-UT-2 for Austenitic Pipe Welds. Step 6.8.1 c) states that when the examination accessibility is limited to a single side in materials less than or equal to 0.50" in thickness, a 2.25 MHz, 70° shear wave search unit shall be used for detection and length sizing of flaws on the far side of the weld. Step 6.8.1 d) states that when the examination accessibility is limited to a single side in materials greater than 0.50" in thickness, a longitudinal wave search unit that provides adequate coverage on the far side of the weld shall additionally be used for detection and length sizing of flaws on the far side of the weld. (The wording and step were taken from Revision E of PDI-UT-2. The step locations may vary in other revisions; however, the basic direction remains the same.)

The root and a portion of the heat affected zone (HAZ) on the far side of each weld were examined using the "best effort" technology (see the table below for the percentage of coverage of the HAZ on the valve or flange side). The base material of the thicker components (valve bodies and flange which had limited examination) is less affected by high stresses and less susceptible to potential degradation than the thinner pipe side of the welds (which were fully examined).

- b. The table below lists the percentage of coverage (of the far side of the weld) obtained with the "best effort" examination.

Weld No.	Supplemental Transducer used	Percentage of Coverage on far side (Note 1)	Nominal Thickness/ Diameter (inches)
BB-02-F019	70° Shear	37.5%	0.438/3
BB-02-FW301	60° Longitudinal	22.9%	0.719/6
BG-21-F013B	70° Shear	100%	0.438/3
EJ-04-F048A	60° Longitudinal	100%	1.125/12
EP-01-MW7152	60° Longitudinal	100%	0.63/6
EP-02-MW7162	60° Longitudinal	100%	0.63/6
EP-01-MW7165	60° Longitudinal	100%	0.63/6

Note 1: This is the percentage of the volume on the far side of the weld that was examined by scanning from the pipe side towards the valve or flange. The transducer was run across the weld as far as possible.