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November 11, 1980

1-110-10
2-110-16

Mr. K. V. Seyfrit, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Comm.
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

SUBJECT: Arkansas Nuclear One - Units 1 & 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
IE Bulletin 79-17 - Pipe Cracks in
Stagnant Borated Water Systems at
PWR Plants
(File: 1510.6, 2-1510.6)

Gentlemen:

This letter is submitted in accordance with item 6 of the subject bulletin and describes the results of recent inspections at our facilities, conducted in accordance with bulletin items 2(b) and 2(c). Item 2 of the subject bulletin is repeated below, followed by our response for each unit.

ITEM 2:

"All operating PWR facilities shall complete the following inspection on the stagnant piping systems identified in Item 1 at the earliest practical date not later than twelve months from the date of this bulletin revision. Facilities which have been inspected in accordance with the original Bulletin, Section 2(a) and 2(b) satisfy the requirements of this Revision.

(a) Until the examination required by 2(b) is completed, a visual examination shall be made of all normally accessible welds of the engineered safety systems at least monthly to verify continued systems integrity. Similarly, the normally inaccessible welds, shall be visually examined during each cold shutdown.

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The relevant provisions of Article IWA 2000 of ASME Code Section XI and Article 9 of Section V are considered appropriate and an acceptable basis for this examination. For insulated piping, the examination may be conducted without the removal of insulation. During the examination particular attention shall be given to both insulated and noninsulated piping for evidence of leakage and/or boric acid residues which may have accumulated during the service period preceding the examination. Where evidence of leakage and/or boric acid residues are detected at locations, other than those normally expected, (such as valve stems, pump seals, etc.) the piping shall be cleaned (including insulation removal) to the extent necessary to permit further evaluation of the piping condition. In cases where piping conditions observed are not sufficiently definitive, additional inspections (i.e., surface and/or volumetric) shall be conducted in accordance with Item 2.(b).

(b) An ultrasonic examination shall be performed on a representative sample of circumferential welds in normally accessible portions of systems identified by 1 above. It is intended that the sample number of welds selected for examination include all pipe diameters within 2½-inch to 24-inch range with no less than a 10 percent sampling being taken. The approach to selection of the sample shall be based on the following criteria:

(1) Pipe Material Chemistry - As a first consideration, those welds in austenitic stainless steel piping (Types 304 and 316 ss) having 0.05 to 0.08 wt. % carbon content based on available material certification reports.

(2) Pipe Size and Thickness - An unbiased mixture of pipe diameters and actual wall thickness distributed among both horizontal and vertical piping runs shall be included in the sample.

(3) System Importance - The sample welds shall focus the examination primarily on those systems required to function in the emergency core cooling mode and secondly, on the containment spray system.

The U.T. examination sample may be focused on noninsulated piping runs. The evaluation shall cover the weld root fusion zone and a minimum of ½ inch on the pipe I.D. (counterbore area) on each side of the weld. The procedure(s) for this examination shall be essentially in accordance with ASME Code Section XI, Appendix III and Supplements of the 1975 Winter Addenda, except all signal responses shall be evaluated as to the nature of the reflectors. Other alternative examination methods, combination of methods, or newly developed techniques may be used provided the procedure(s) have a proven capability of detecting stress corrosion cracking in austenitic stainless steel piping.

for welds of systems included in the sample having pipe wall thickness of 0.250 inches and below, visual and liquid penetrant surface examination may be used in lieu of ultrasonic examination.

(c) If cracking is identified during Items 2(a) and 2(b) examinations, all welds in the affected system, shall be subject to examination and repair considerations. In addition, the sample welds to be examined on the remaining normally accessible noninsulated piping shall be increased to 25 percent using the criteria outlined in paragraph 2(b). In the event all accessible and inaccessible welds of the systems identified in item 1 shall be subject to examination."

RESPONSE

ANO - 1

As reported via LER 50-313/80-003, dated February 4, 1980, cracks were discovered in the heat affected zones of three welds in the Reactor Building Spray System during inspections on January 21, 1980. Subsequent to this discovery, all welds in the Reactor Building Spray System were inspected as required by item 2(c) of the bulletin. The results of these inspections were forwarded to you by letter dated March 7, 1980. As stated in that letter, and in accordance with item 2(c), our inspection plans for the remaining systems within the scope of IE Bulletin 79-17, Rev. 1, were expanded to include at least 25% of the welds in normally accessible noninsulated piping.

All remaining inspections are now complete. A total of 189 welds were examined during these supplemental inspections with no indication if IGSC cracking. Only three welds exhibited recordable indications. These indications were determined to be geometric reflectors which had been previously noted during baseline inspections.

A summary of the welds included in this supplemental inspection is shown in Attachment 1.

Welds selected for examination were chosen from accessible welds with high carbon content as indicated by plant records. On piping with average wall thicknesses of less than or equal to 0.25" visual examinations were performed in lieu of ultrasonic examination, with liquid penetrant examination used to evaluate indications or suspect areas.

ANO - 2

In accordance with item 2(b), a 10% sample of welds within the scope of the bulletin were selected for examination. The sample welds were chosen from accessible welds with high carbon content as indicated by plant records. For welds in piping with an average wall thickness of less than or equal to 0.25", visual examinations were used in lieu of ultrasonic examinations, with liquid penetrant examinations used to evaluate indications or suspect areas.

A total of 143 welds were examined during this inspection. No recordable indications were detected. A summary of the welds included in this inspection is shown in Attachment 1.

CONCLUSION

As a result of the successful completion of inspections required by items 2(b) and 2(c), the visual examinations required by item 2(a) have been discontinued. The inspections described above complete our response to the subject bulletin. No further action is planned.

Very truly yours,

David C. Trimble

David C. Trimble
Manager, Licensing

DCT:DRH:lp
~~ADD~~
Attachment

cc: Division of Operating Reactors
Office of Inspection and Enforcement
Washington, D.C. 20555

ATTACHMENT 1

INSPECTION SUMMARY

UNIT #1

System	No. Welds	Nom. Pipe Sizes	UT Exams Performed	Visual Exams Performed
Makeup and Purification System Including Suction, Discharge, Cross-Connect, and Branch Connections	222	2½",3",4"	94	11
Decay Heat Removal System Including Suction, Discharge, Cross-Connect, and Branch Connections	244	2½",4",6", 8",10",12"	2	82

UNIT #2

Safety Injection System	818	2",3",4",6", 8",10",12",14"	64	18
Containment Spray System	419	3",4",6",8",10", 12",14",20",24"		39
Chemical and Volume Control System	32	3",4"		22