

River Bend Station 5485 U.S. Highway 61N St. Francisville, LA 70775 Tel 225-381-4177

> Joseph A. Clark Manager, Licensing

RBG-47233

April 16, 2012

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

- SUBJECT: Supplement to Request for Relief RBS-ISI-016 and RBS-ISI-017 Requests for Relief from ASME Code Section XI Inservice Inspection Requirements for Pressure Retaining Welds in Control Rod Housings and Pressure Retaining Welds in Pumps and Valves Docket No. 50-458 License No. NPF-47
- REFERENCES: 1. Entergy Letter to NRC dated August 3, 2011, Requests for Relief RBS-ISI-016, Requests for Relief from ASME Code Section XI Inservice Inspection Requirements for Pressure Retaining Welds in Control Rod Housings and Pressure Retaining Welds in Pumps and Valves (RBS-ISI-016 and RBS-ISI-017 / RBG-47166)
 - 2. NRC Email dated February 1, 2012, River Bend Station Request for Additional Information Regarding RR RBS-ISI-016 and RBS-ISI-017 (ML11221A164)

Dear Sir or Madam:

In Reference 1, Entergy Operations, Inc. (Entergy) submitted requests for relief from ASME Code Section XI Inservice Inspection Requirements for Pressure Retaining Welds in Control Rod Housings and Pressure Retaining Welds in Pumps and Valves (examination Category B-O, Item Number B14.10 Welds in CRD Housing and C-G, C6.10, Pump Casing Welds).

In Reference 2, the NRC Staff requested additional information concerning this request. This correspondence provides the requested additional information. The initial response date of April 2, 2012, was revised to April 16, 2012, with the agreement of the NRC Project Manager.

This information contains no new commitments.

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If you have any questions or require additional information, please contact me at (225) 381-4177.

Sincerely, Rio

Manager, Licensing River Bend Station - Unit 1

JAC/bmb

Attachments:

1. Supplement to Requests for Relief RBS-ISI-016 and RBS-ISI-017

cc: Regional Administrator U. S. Nuclear Regulatory Commission Region IV 1600 E. Lamar Blvd. Arlington, TX 76011-4511

> NRC Senior Resident Inspector P. O. Box 1050 St. Francisville, LA 70775

U. S. Nuclear Regulatory Commission Attn: Mr. Alan Wang MS 0-8B1 One White Flint North 11555 Rockville Pike Rockville, MD 20852

Louisiana Department of Environmental Quality Office of Environmental Compliance Radiological Emergency Planning and Response Section JiYoung Wiley P. O. Box 4312 Baton Rouge, LA 70821-4312

Ms. Tracie Lowry Public Utility Commission of Texas 1701 N. Congress Avenue P. O. Box 13326 Austin, TX 78711-3326 RBG-47233 RBF1-12-0049 File codes; G9.5,

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ATTACHMENT 1 TO

RBG-47233

SUPPLEMENT TO REQUESTS FOR RELIEF

RBS-ISI-016 and RBS-ISI-017

SUPPLEMENT TO REQUESTS FOR RELIEF

ENTERGY OPERATIONS, INC. RIVER BEND STATION – UNIT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUESTS RBS-ISI-016 AND RBS-ISI-017

Question 1:

General Question for RELIEF REQUESTS RBS-ISI-019 and RBS-ISI-017

In the licensee's submittal dated August 3, 2011, it was noted in the cover letter that RR RBS-ISI-016 and RBS ISI-17 were submitted beyond the one year time frame specified under 10 CFR 50.55a(g)(5)(iv) and that the omission had been addressed in the Entergy's Correction Action Process. Provide an action number, if one exists and date of the action. What was the reason for the lateness in submitting RRs RBS-ISI-016 and RBS-ISI-017 to the NRC?

Response:

The failure to file the subject Requests for Relief within the one year timeframe specified under 10CFR50.55a(g)(5)(iv) was documented in the River Bend Station (RBS) Corrective Action Process under Condition Report CR-RBS-2011-04519 which was initiated on June 6, 2011.

The need to generate the subject Requests for Relief was inadvertently overlooked during the interval-end review process. The subject Requests should have been included with Relief Requests RBS-ISI-007 through RBS-ISI-011 which were developed for limited examination coverage obtained for various welds. Relief Requests RBS-ISI-007 through RBS-ISI-011 were filed on May 29, 2009.

Question 2

REQUEST FOR RELIEF RBS-ISI-016 ASME CODE, SECTION XI, TABLE IWB-2500-1, EXAMINATION CATEGORY B-O, ITEM B14.10 WELDS IN CONTROL ROD DRIVE (CRD) HOUSINGS

Question 2.a:

Since there has been an improvement in visual examinations over the past few years by remote camera, has the licensee considered visual examinations using a remote camera for future visual examinations of the control rod drive (CRD) housings?

Response:

RBS has not attempted to use remote cameras to perform the alternative VT-1 examinations.

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Question 2.b:

In keeping with "As Low As Reasonable Achievable" (ALARA), what would have been the estimated dosage rate if the ASME Code examinations were performed in the second 10-year ISI interval?

Response:

Radiological surveys were performed during January 2011 in the subpile room under the reactor vessel. Entry into this area is required to access the CRD Housing tube-to-flange Weld #1s. General area dose rates ranged from 30 to 220 mrem/hour. Contact dose rates in the overhead areas (where Weld #1s are located) ranged from 233 to 1500 mrem/hour.

A Survey was performed on January 26, 2011, in the lower annulus area between the reactor vessel and the biological shield wall. Entry into this area is required to access the CRD housing tube-to-tube Weld #2s. General area dose rates ranged from 60 to 120 mrem/hour. No actual contact dose rates for the weld locations were obtained, but the rates should be comparable to the contact rates for the lower portion of the housings.

Question 2.c:

In the staff's evaluation of RR R004 contained in NUREG-0989, "Safety Evaluation Report Related to the Operation of River Bend Station," Supplement 3, Appendix L, dated May 1984 (ADAMS Accession Number ML09138041), it was stated that: "In the event that the CRD Housings are disassembled for inservice repair or maintenance, so that the subject welds and bolting are accessible, the staff will require that the preservice be performed at that time." Were the CRD housings ever disassembled for inservice repair or maintenance and the preservice examination performed? What were the results, if the examinations were performed?

Response:

Relief was requested by RBS in Relief Request R004 and was approved by NRC as documented in SSER 3, Appendix L, dated May 1984, and SER for Inservice Inspection (ISI) plan, Revision 2, dated October 20, 1987.

Inservice VT-1 examinations of the CRD bolting were performed during the first and second ISI Intervals both in place and when bolts were removed for replacement of the associated CRD mechanisms. The examination during the first ISI interval yielded satisfactory results. However, the VT-1 examinations performed during the second ISI interval performed on CRD bolting removed for CRD mechanism replacement recorded minor pitting and corrosion.

During the first and second ISI Intervals, 22 of the 36 peripheral CRD's were removed for replacement. During the first ISI Interval, the alternate VT-1 examination of the minimum number of peripheral CRD housing welds was attempted, but the welds were determined to be inaccessible. Records of attempted inspection in the second ISI Interval could not be located.

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Question 2.d:

Was relief given by the NRC for the ASME Code-required examinations of the CRD Housings in the first 10-year ISI interval? Provide the date of the NRC SE if relief was given.

Response:

Relief for the first ISI Interval was requested by RBS in Relief Request RR004, Revision 2, and approved by NRC as documented in the NRC SER dated October 20, 1987.

Question 3.a:

Provide materials specifications for the welds and associated components (e.g., pumps and valves) for which relief is requested. Discuss which piping systems these welds belong to.

Response:

The Materials for the three (3) pumps containing the subject welds were supplied per ASME Code, Section II. The pumps were constructed to the requirements of the ASME Code, Section III, Class 2. Welding operations were controlled, performed and documented to the requirements of ASME Code, Section IX.

The following Table indicates the specific systems the subject pumps serve along with the associated weld and pump part material specifications:

PUMP	SYSTEM	MATERIAL
E12-PC002A	Residual Heat Removal System	DH-1 Weld – Tack/root – E7018 Final – F72-EM12K Head Shell - SA 516 Gr 70 Head Flange - SA 105
E21-PC001	Low Pressure Core Spray System	DH-1 Weld – Tack/root – E7018 Final – F72-EM12K Head Shell - SA 516 Gr 70 Head Flange - SA 105
E22-PC001	High Pressure Core Spray System	DH-1 Weld – Tack/root – E7018 Final – F72-EM12K Head Shell - SA 516 Gr 70 Head Flange - SA 105

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Question 3.b:

Clarify whether these welds were inspected during fabrication. Provide the date of fabrication and pre-service (PSI) inspection, and inspection methods. Discuss any fabrication flaws detected and repaired.

Response:

The following Table provides when each pump was fabricated, the method of inspection used for the subject DH-1 welds, and the results of the inspections.

PUMP	FABRICATION DATE	EXAM METHOD	EXAM RESULTS
E12-PC002A	1977	Radiography Hydrostatic	One linear indication was identified and repaired
E21-PC001	1977	Radiography Hydrostatic	No indications
E22-PC001	1977	Radiography Hydrostatic	Three linear indications were identified and repaired

The subject DH-1 welds did not receive preservice examination. Relief from preservice inspection was requested by RBS in Relief Request R003 and approved by NRC in NUREG-0989, "Safety Evaluation Report Related to the Operation of River Bend Station" Supplement 3, Appendix L, dated May 1984 (ADAMS Accession Number ML09138041).

Question 3.c:

Clarify whether these welds have ever been inspected in service in accordance with the requirements of the ASME Code, Section XI, since commercial operation. If yes, discuss the inspection results. If no, provide technical justification for the assurance of the integrity of these welds until the next scheduled inspection.

Response:

The subject welds were not inspected in service in accordance with the requirements of the ASME Code, Section XI, during the first ISI Interval. Relief was requested for the first ISI Interval by RBS in Relief Request RR1-0003 and approved by NRC as documented in the NRC SER dated March 9, 2000.

Assurance of integrity of the subject welds is provided by the performance of System Leakage Tests of the associated components per ASME Code, Section XI, Examination Category B-P. Further assurance is provided by the satisfactory results of examinations performed on other welds in the same pumps made of the same materials and weld filler materials.

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Question 3.d:

NRC Information Notice (IN) 2011-04, "Contaminants and Stagnant Conditions Affecting Stress Corrosion Cracking in Stainless Steel Piping in Pressurized Water Reactors" discusses potential stress corrosion cracking (SCC) in stainless steel piping.

- 1. Provide operating pressure and temperature that these welds are exposed to.
- 2. Discuss the potential for SCC in these welds.

Response:

1. The subject DH-1 welds are located in the part of the pump that experiences suction pressure. The operating pressures and temperatures for the subject pumps at the suction piping connections are shown in the following table:

PUMP	PRESSURE	TEMPERATURE
E12-PC002A	160 psig	344 degrees F
E21-PC001	37 psig	185 degrees F
E22-PC001	40 psig	185 degrees F

2. The subject DH-1 welds consist of carbon steel pump base materials with carbon steel weld filler material and are therefore not considered to be susceptible to Stress Corrosion Cracking as discussed in NRC Information Notice 2011-04.

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