Entergy

River Bend Station
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Tel 225-381-4157

David N. Lorfing
Manager, Licensing

RBG-47040

June 22, 2010

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

SUBJECT: Supplement to Request for Alternative RBS- ISI-014
Proposed Alternative to 10 CFR 50.55a Examination Requirements for Reactor Pressure Vessel Weld Inspections
Docket No. 50-458
License No. NPF-47

REFERENCES:
1. Entergy Letter to NRC dated November 30, 2009, Request for Alternative RBS- ISI-014, Proposed Alternative to 10 CFR 50.55a Examination Requirements for Reactor Pressure Vessel Weld Inspections (RBS- ISI-014 / RBG-46978)
2. NRC Email dated May 25, 2010, River Bend Station Request for Additional Information regarding Relief Request RBS-ISI-014 (ML101450309)

Dear Sir or Madam:

In Reference 1, Entergy Operations, Inc. (Entergy) submitted a request to implement the proposed alternative to American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Sub Article IWB-2500 to implement the requirements of BWRVIP-75A, in lieu of the ASME Code, Section XI requirements and other augmented requirements, for the examination of Category B-F, Item Number B5.10 Nozzle-to-Safe End Butt Welds.

On May 25, 2010, the NRC Staff requested additional information (Reference 2) concerning this request. Attachment 1 contains the information requested.

This information does not contain any new commitments.

A047
NRR

If you have any questions or require additional information, please contact me at (225) 381-4157.

Sincerely,

FOR

Manager, Licensing
River Bend Station - Unit 1

DNL/bmb

Attachments:

1. Supplement to Request for Alternative RBS-ISI-014, Response to Questions

cc: Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125

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

U. S. Nuclear Regulatory Commission
Attn: Mr. Alan B. Wang
MS O-7 D1
Washington, DC 20555-0001

Mr. Jeffrey P. Meyers
Louisiana Department of Environmental Quality
Office of Environmental Compliance
Attn. OEC - ERSD
P. O. Box 4312
Baton Rouge, LA 70821-4312

ATTACHMENT 1 TO

RBG-47040

SUPPLEMENT TO REQUEST FOR ALTERNATIVE

RBS-ISI-014

SUPPLEMENT TO REQUEST FOR ALTERNATIVE

ENTERGY OPERATIONS, INC.
RIVER BEND STATION – UNIT 1

RBS-ISI-014

Response TO NRC Request for Additional Information Regarding Relief Request RBS-ISI-014

From NRC Email dated May 25, 2010:

By letter dated November 30, 2009, Entergy Nuclear Operations, Inc. (the licensee) submitted Request for Alternative RBS-ISI-014, for the third 10-year inservice inspection (ISI) interval at River Bend Station, Unit 1 (River Bend 1), pursuant to paragraph 50.55a(a)(3)(i) of Title 10 of *The Code of Federal Regulations* (10 CFR). Request RBS-ISI-014 proposes an alternative to ISI requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, and the augmented inspection requirements of NRC Generic Letter (GL) 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel," January 25, 1988, including Supplement 1 to GL 88-01, in order to implement the alternative inspection guidance of BWRVIP-75-A, "BWRVIP-75-A: BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules," October 2005, for several ASME Code Examination Category B-F components.

BWRVIP-75-A, Section 3, "Revised Inspection Criteria" states, in part, that "[I]n some cases, the [inspection] sample size required to be examined by this report is smaller than that required by ASME Section XI. For those cases, it is recognized that when this report is approved for use by the NRC, each licensee will need to pursue an alternative to 10 CFR 50.55a requirements for Category B-J and B-F welds pursuant to 10 CFR 50.55a(a)(3)(i) to use the sample sizes specified in this report. In that request, each licensee will describe how the conditions contained in [the BWRVIP-75-A] report are applicable to their plant."

In accordance with the above BWRVIP-75-A criteria for requests for alternatives, pursuant to 10 CFR 50.55a(a)(3)(i), the NRC staff requests that the licensee provide the following additional information:

1. State the weld category (e.g., Category "A", "B", "C", "D", etc.), based on the NUREG-0313, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping," Revision 2, January 1988, and GL 88-01 weld categorization criteria, for each of subject welds for which this alternative is requested at River Bend 1, based on the nozzle materials, safe end materials, weld metal materials, and weld buildup material; and the performance of mechanical stress improvement (prior to or after two cycles of operation).

RESPONSE

All of the ASME Examination Category B-F welds included in Request for Relief RBS-ISI-014 are classified as Category "C" under Generic Letter 88-01. Additional information is included in the response to question 2.

2. State the specific BWRVIP-75-A revised inspection criteria (e.g., inspection sample size and frequency, and sample expansion criteria) that will be applied to the subject welds at River Bend 1, for each of the applicable weld categorizations provided above, based on criteria such as whether or not River Bend 1 is assuming credit for a Hydrogen Water Chemistry Program, and whether or not qualified Intergranular Stress Corrosion Cracking examinations have been conducted.

RESPONSE
See following pages.

RESPONSE

All of the ASME Examination Category B-F welds included in Request for Relief RBS-ISI-014 are classified as Category "C" under Generic 88-01. The Category "C" welds included in the request have been examined to the appropriate requirements at least once.

River Bend takes credit for IGSCC examinations, Hydrogen Water Chemistry and Online Noble Metals Injection Programs. Consequently, the proposed inspection frequency and requirements, as excerpted from BWRVIP-75-A, pages 3.2 and 3.3, Table 3-1, is applicable to this request:

BWRVIP-75-A

Category	Weld Description	Existing Inspection Frequency of GL 88-01	Proposed Inspection Frequency (Note 1, 2, 3(b))		Scope Expansion
C	Non-Resistant Materials Stress Improved after 2 years of Operation	All within 2 cycles of SI, then all within 10 years, at least 50% within 1st 6 years	25% every 10 years (Note 5)	10% every 10 years (Note 5)	Section 3.3.1

Notes:

1. For the examination sample percentages that are less than required by ASME Section XI, a licensee will need to pursue an alternative to 10 CFR 50.55a requirements for Category B-J and B-F welds pursuant to 10 CFR 50.55a(a)(3)(i). These inspections may be credited toward ASME Section XI ultrasonic examination requirements and the Code required surface examinations may be limited to those welds selected. However, if a licensee has an existing NRC approved alternative, a second request for an alternative to 10 CFR 50.55a may not be required if the scope of the second request is covered by the existing NRC-approved alternative.
2. Where examination sample is less than 100%, approximately 50% of the sample is required to be inspected during the first 6 years of the interval.
3. a. Category B-J welds can be inspected with a scope of 10 percent every 10 years when a second mitigator is applied. The acceptable second mitigator is heat sink welding (HSW), mechanical stress improvement process (MSIP), induction heating stress improvement (IHSI), solution annealing or hydrogen water chemistry (HWC).

   b. During the selection of locations for inspection, consideration should be given regarding locations where IGSCC could be accelerated by crevice corrosion or thermal fatigue. In addition, locations having attributes that would promote IGSCC should have higher priority for inspection. The attributes that may be considered include: high carbon or low ferrite content, crevice or stagnant flow condition, evidence of weld repair, surface cold work, and high fit-up, residual and operating stresses.
4. If qualified IGSCC examinations have not been conducted, the inspection frequency for Category B welds will be 25 percent of the population every 6 years under NWC conditions, or 25 percent every 10 years under HWC conditions.
5. The licensee must ensure that an effective stress improvement was achieved. Additionally, there must have been either: a. a preservice (post-stress improvement) and inservice examination with a qualified procedure with no cracking identified, or b. for welds that were stress-improved prior to publication of BWRVIP-75-A but did not receive a preservice examination, at least one examination performed with a qualified procedure after more than two operating cycles and no cracking detected.

6. If a flawed weld is stress improved and becomes Category E, a preservice examination must be performed followed by two successive inservice examinations, using qualified procedures, to be performed every second refueling outage (i.e., a repeat inspection after two cycles and another inspection after two more cycles).

CONCLUSION:

Based on the guidance of BWRVIP-75-A and the information provided herein, River Bend proposes to inspect 10% of the Category "C" welds, per table 3-1 of BWRVIP-75A included in Request RBS-ISI-014 once every 10 years, with scope expansion addressed by Section 3.3.1 of the referenced BWRVIP-75-A.