



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

Joseph A Clark  
Manager, Licensing

RBG- 47284

September 20, 2012

U. S. Nuclear Regulatory Commission  
Attn.: Document Control Desk  
Washington, DC 20555-0001

SUBJECT: River Bend Station, Unit 1 - Requests for Relief  
Request for Relief from ASME Boiler & Pressure Vessel Code  
Section III  
Docket No. 50-458  
License No. NPF-47

Dear Sir or Madam:

Pursuant to 10CFR50.55a(3)(i), Entergy requests a hardship relief to the postweld heat treatment exemption of Table ND-4622.7 applicable to fillet and partial penetration welds. Entergy requests this relief until resolution of the condition. Entergy proposes to resolve this issue by replacement of the installed valves using the replacement schedule identified in Attachment 1.

The specific details of the requested relief are enclosed in Attachment 1. Although this request is neither exigent nor emergency, your prompt review is requested.

This letter contains new regulatory commitments identified in Attachment 2.

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MRR

RBG- 47284

Page 2 of 2

If you have any questions concerning this letter, please contact me at  
(225) 381-4177.

Respectfully,



JAC/bmb

RBF1-12-0136

Attachments:

Attachment 1 - Request for Hardship Relief

Attachment 2 - Regulatory Commitments

cc: Regional Administrator  
U. S. Nuclear Regulatory Commission, Region IV  
1600 East 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 O-8B1  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

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

Public Utility Commission of Texas  
Attn: PUC Filing Clerk  
1701 N. Congress Avenue  
P. O. Box 13326  
Austin, TX 78711-3326

**Attachment 1**

**RBG- 47284**

**Request for Hardship Relief**

**RBS-R&R-2011-001**

**ENERGY OPERATIONS, INC.  
RIVER BEND STATION  
REQUEST NO. RBS-R&R-2011-001**

**I. COMPONENTS**

Component Number and Description:	Various Size ASME Class 3 Valves:  E12-MOVF068A, Residual Heat Removal Heat Exchanger Service Water Return  E12-MOVF068B, Residual Heat Removal Heat Exchanger Service Water Return  SWP-MOV506A, High Pressure Core Spray Diesel Generator Engine Water Heat Exchange Service Water Header Isolation  SWP-MOV506B, High Pressure Core Spray Diesel Generator Engine Water Heat Exchange Service Water Header Isolation  SWP-MOV501A, Reactor Closed Cooling Water Heat Exchanger Service Water Supply Header Isolation Valve  SWP-MOV501B, Reactor Closed Cooling Water Heat Exchanger Service Water Supply Header Isolation Valve  SWP-MOV511A, Normal Service Water Return Isolation  SWP-MOV511B, Normal Service Water Return Isolation  SWP-MOV55A, Standby Service Water Cooling Tower 1 Inlet  SWP-MOV55B, Standby Service Water Cooling Tower 1 Inlet
Code Class:	3
References:	1. ASME Section XI, 2001 Edition through 2003 Addenda 2. ASME Section III, 1974 Edition / Summer 1975 Addenda 3. ASME Section III, 1992 Edition / No Addenda 4. ASME Section III, Code Case N-804, <i>Alternative Preheat Temperature for Austenitic Welds in P-No. 1 Material without PWHT</i>
Unit:	River Bend Station (RBS)
Inspection Interval:	Third (3 <sup>rd</sup> ) 10-Year Interval (Ends 12/2017, after RFO19)

## II. CODE REQUIREMENTS

IWA-4221(b)(1) states, "When replacing an existing item, the new item shall meet the Construction Code to which the original item was constructed."

IWA-4221(c) states in part, "As an alternative to (b), the item may meet all or portions of the requirements of different Editions and Addenda of the Construction Code, or Section III when the Construction Code was not Section III... Construction Code Cases may also be used."

ND-4600 of ASME Section III, 1992 Edition contains the following requirements regarding postweld heat treatment of ASME Class 3 welds:

- ND-4622.1 states that all welds, including repair welds, shall be postweld heat treated within the temperature ranges and holding times of Table ND-4622.1-1 except as otherwise permitted in ND-4622.7.
- ND-4622.7 states that postweld heat treatment is not required for nonferrous materials and welds exempted in Table ND-4622.7(b)-1.
- Table ND-4622.7(b)-1, *Exemptions to Mandatory PWHT*, states that all welds in P-Number 1 material over 1 ½ inch thick with a nominal thickness of ¾" or less are exempt from postweld heat treatment provided a minimum preheat of 200°F is applied.

## III. PROPOSED ALTERNATIVE

### Background

River Bend Station (RBS) purchased sixteen (16) ASME Class 3 valves from Weir Valves and Controls Company USA, Inc. The 16 valves, listed in Section I, were stamped and certified to be in compliance with ASME Section III. Ten of these valves have been installed at RBS.

On 8/2/2011, a letter was received from Weir Valves and Controls Company USA. The letter indicated that, during fabrication, the welding process used to install stainless steel (P-Number 8) seats to carbon steel (P-Number 1) bodies of the subject valves did not fully comply with Table ND-4622.7(b)-1 of the ASME Code. The condition noted was that the base material was not preheated to 200°F (minimum) as required by Table ND-4622.7(b)-1 for exemption from post weld heat treatment. The Weir welding procedure required a minimum preheat of 60°F instead of 200°F. These seat rings are attached to the valve body wall by a 3/16 or 1/4 inch fillet weld on both sides of the ring using GTAW or SMAW process.

### Proposed Alternative

Entergy considered several options to address the above condition on-line. However to replace the Standby Service Water (SSW) valves, the affected piping section would require the divisional loop of SSW to be secured and drained. While the RBS Technical

Specifications (TS) provides 72 hours to effect repairs to the system, doing so would result in the loss of an entire train of emergency core cooling components during the repair window. In addition, isolation and draining of a SSW loop during power operation is complex. There is no plan to drain either division of Standby Service Water (SSW) during the upcoming refueling outage (RF17) and the lead time required for the replacement valves makes it impossible.

Pursuant to 10CFR50.55a(3)(i), Entergy requests a hardship relief to the postweld heat treatment exemption of Table ND-4622.7 applicable to fillet and partial penetration welds in base materials over 1-1/2" and with nominal thicknesses 3/4" or less. Entergy proposes to replace the installed valves using the replacement schedule defined below.

Due to outage impact, Entergy proposes the replacement of the inservice valves will be performed during future outages. The Division "2" valves identified in this submittal will be replaced during RF-18 currently scheduled for early 2015. The Division "1" valves identified in this submittal will be replaced during RF-19 currently scheduled for early 2017.

#### **IV. BASIS FOR ALTERNATIVE**

##### **Background**

RBS submitted a relief request based upon the ASME approved code case N-804 on December 22, 2011. This request was withdrawn due to NRC technical concerns on June 8, 2012.

Entergy reviewed various options to resolve this issue as described below. Without the ability to resolve the issue permanently through code case N-804, Entergy has decided to replace all of the valves in question.

As described above, the valves are installed in the Standby Service Water (SSW) system. The system configuration will not allow isolation of the valves without the use of freeze seals or other alternative isolation methods, isolation during power operations involves significant risk.

An evaluation of the risk to replace the valves while in power operation was performed. This evaluation determined the risk to replace any one or multiple valves will place the plant at high risk per the RBS procedure for on-line maintenance risk assessment.

The valve locations are at low elevations in the plant, at or below the grade level of about 95 ft elevation. Therefore, the each division (subsystem) will need to be essentially or completely drained to facilitate the removal of the valves. As a result, replacement of the valves will require a significant outage to allow the draining of the system.

To drain the system has taken approximately 2 days in past outages and the refill operation was a similar period. As a result, replacement of a single or multiple valves will require a division of the safety related SSW system to be out of service for more than 4 days.

Risk assessments of this activity were conducted for both on-line and shutdown conditions per plant risk assessment procedures. The on-line risk was discussed previously. Replacement of single or multiple valves in one division during shutdown is expected to be acceptable.

### **Bases Of Relief**

The option of on-line replacement is impractical, the next planned outage is refueling outage 17 (RF-17), scheduled for early 2013. This outage does not currently schedule the drainage of either division.

Attempts to obtain replacement valves prior to RF-17 were not successful. The expected delivery of replacement valves is 52 weeks. At this time, no outage is planned until RF-18, currently scheduled for early 2015.

The dose effect of replacing these valves has been reviewed. With the valves being in a relatively clean system and areas of the plant does rates should not inhibit replacement activities.

The possibility of draining both divisions in RF-18 was reviewed. Draining a divisional loop of SSW during an outage typically extends the system outage window making emergency core cooling system components unavailable for longer periods of time. It also removes a source of cooling for the spent fuel pool heat exchangers. Entergy is not planning to extend the system outage window for these reasons, and proposes to replace one division's valves in RF-18 and the remaining division's valves in RF-19.

### **Inspection Of Valves**

Entergy considered using Non-Destructive Testing to justify extended use until code case N-804 was approved. However, inspections would require the same dose and schedule time. Inspections would also require the system be drained. Thus, replacement to bring the valves up to code was selected rather than the reliance of code case N-804.

The inspection of valves prior to replacement was also reviewed. As noted above, inspections require the same system configurations as replacement, resulting in similar risk and outage restrictions. At this time River Bend Station is not scheduled to drain either division of the SSW system during RF-17.

Other In-Service testing will be maintained. This includes stroke time testing and position indication verification testing.

### **Conclusion**

As discussed above, Entergy has determined replacement of the subject valves during upcoming outages is a reasonable path to resolve this issue.

The addition of inspections of the valves during the upcoming refueling outage would have a significant impact on the current outage duration. These inspections are considered a hardship due to the impact on the outage. The valves are in compliance with the ASME

approved code case (N-804) and continue to receive all other required inspections and surveillances per Technical Specifications and ASME code.

Replacement of the subject valves will be the final resolution of this issue.

**Attachment 2**

**RBG- 47284**

**Regulatory Commitments**

**List of Regulatory Commitments**

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE
	ONE- TIME ACTION	CONTINUING COMPLIANCE	
The Division "2" valves identified in this submittal will be replaced during RF-18 currently scheduled for early 2015	X		RF-18
The Division "1" valves identified in this submittal will be replaced during RF-19 currently scheduled for early 2017	X		RF-19