



Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61
P.O. Box 220
St. Francisville, LA 70775
Tel 504 336 6225
Fax 504 635 5068

James J. Fisicaro
Director
Nuclear Safety

November 9, 1995

U.S. Nuclear Regulatory Commission
Document Control Desk
Mail Stop P1-37
Washington, D.C. 20555

Subject: Response to Request for Additional Information, Generic Letter 92-08,
"Thermo-Lag 330-1 Fire Barriers" (TAC No. M85596)
River Bend Station - Unit 1
License No. NPF-47
Docket No. 50-458

File Nos.: G9.5, G9.33.4

RBG-42159
RBF1-95-0265

Gentlemen:

The Request for Additional Information (RAI), Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers" (TAC No. M85596) dated September 25, 1995, requested that Entergy Operations, Inc., (EOI) submit ampacity derating evaluations, including any applicable test reports, in order to provide an adequate response to GL 92-08 reporting requirement 2(c). The summary of the requested information incorrectly indicated that no ampacity information was previously provided by River Bend Station (RBS). The RBS response to GL 92-08 reporting requirement 2(c) was provided in a letter dated April 14, 1993 (RBG-38343). An RAI dated December 22, 1993, acknowledged the April 14, 1993, response. The RBS response to the December 22, 1993, RAI was dated February 9, 1994 (RBG-40047), and addressed ampacity issues in Section IV.B., "Ampacity Derating." This response was acknowledged in the Follow-up to the RAI dated September 23, 1994. Attachment 1 provides EOI's response to GL 92-08 reporting requirement 2(c) from the letter dated April 14, 1993.

In addition, EOI was requested to submit the anticipated test procedures or a description of the analytical methodology including typical calculations which will be used to determine the ampacity derating parameters, or to inform your office of the earliest date by which this information will be provided for the Thermo-Lag fire barriers installed at RBS. EOI's

9511170213 951109
PDR ADOCK 05000458
P PDR

A029
111

Response to Request for Additional Information, Generic Letter 92-08, "Thermo-Lag 330-1
Fire Barriers" (TAC No. M85596)

November 9, 1995

RBG-42159

RBF1-95-0265

Page 2 of 2

response is provided in Attachment 2. Note that a supplement to this response will be provided in accordance with the schedule described in the attachment.

Should you have any questions or require additional information, please contact Tim Gates of my staff at (504) 381-4866.

Sincerely,

JJF/kvm

attachments (2)

enclosure (1)

cc: U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

Mr. D. L. Wigginton
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
M/S OWFN 13-H-3
Rockville, MD 20852

NRC Resident Inspector (w/o enclosure)
P.O. Box 1051
St. Francisville, LA 70775

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

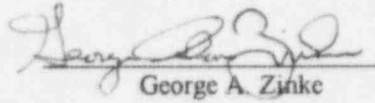
LICENSE NO. NPF-47

DOCKET NO. 50-458

IN THE MATTER OF
GULF STATES UTILITIES COMPANY
CAJUN ELECTRIC POWER COOPERATIVE AND
ENTERGY OPERATIONS, INC.

AFFIRMATION

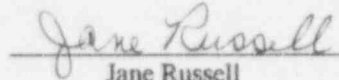
I, George A. Zinke, state that I am acting Director of Nuclear Safety of Entergy Operations, Inc., at River Bend Station; that on behalf of Entergy Operations, Inc., I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this Response to Request for Additional Information, Generic Letter 92-08, "Thermo-Lab 330-1 Fire Barriers" (TAC No. M85596), that I signed this supplement as acting Director-Nuclear Safety at River Bend Station of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information, and belief.


George A. Zinke

STATE OF LOUISIANA
WEST FELICIANA PARISH

SUBSCRIBED AND SWORN TO before me, Notary Public, commissioned in the Parish of East Baton Rouge and qualified in and for the Parish and State above named, this 9th day of November, 1995.

(SEAL)


Jane Russell
Notary Public

My Commission expires with life.

ATTACHMENT 1

Request for Additional Information (RAI) of February 9, 1994

The Request for Additional Information (RAI), Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers" (TAC No. M85596) dated September 25, 1995, requested, in part, that Entergy Operations, Inc., (EOI) submit ampacity derating evaluations, including any applicable test reports, in order to provide an adequate response to GL 92-08 reporting requirement 2(c). GL 92-08 reporting requirement 2(c) states:

State (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection or safe shutdown capability or to achieve physical independence electrical systems) and (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

The RBS response to GL 92-08 dated April 14, 1993, (RBG-38343) states, in part:

The as-built fire barrier configurations at RBS are consistent with fire barrier configurations used in TSI ampacity derating tests. The fire barrier configurations used in the tests were installed in accordance with TSI Technical Note 20684, "Thermo-Lag 330 Fire Barrier System, Installation Procedures Manual." In general, fire barriers at RBS were installed to the same procedure, therefore, for the purposes of ampacity derating, the as-built fire barrier configurations are consistent with those used in the qualifying tests.

The ampacity derating of cables inside Thermo-Lag wrapped raceways is addressed in RBS Calculation E-218, "Ampacity Verification of Cables Within Raceways Wrapped with Appendix R Fire Protection Barrier." The basis for the ampacity derating was a letter from TSI to SWEC dated July 5, 1985. The test report numbers and ampacity derating values are shown in the following table:

TEST REPORT	DESCRIPTION	TSI DERATING VALUE	UL DERATING VALUE
I.T.L. No. 82-355-F-1	One Hour Cable Tray Test	12.5%	
I.T.L. No. 84-3-275A	Three Hour Cable Tray Test	20.55%	
Technical Note No. 111781	One Hour Conduit Test	7.2%	
I.T.L. No. 84-10-5	Three Hour Conduit Test	9.72%	
UL 86NK23826, File R6802	One Hour Cable Tray Test		28.0%
UL 86NK23826, File R6802	Three Hour Cable Tray Test		31.2%
UL 86NK23826, File R6802	Three Hour Conduit Test		9.4%

A letter from Underwriter's Laboratories (UL) to TSI dated January 21, 1987, provides the results of a test performed by UL to determine the ampacity derating of Thermo-Lag 330 fire

wrap enclosures. The RBS review of the UL Report concerning ampacity derating of Thermo-Lag 330 fire wrap enclosures noted that the UL test configurations vary from the TSI report and the RBS installed configurations. Calculation E-218 was reviewed using the more conservative ampacity derating factors from the UL test shown in the table above. The review and resulting modifications confirmed that all wrapped cables are adequately sized.

Although GL 92-08 reporting requirement 2(c) contains no specific request to submit ampacity derating evaluations, a copy of Calculation E-218 is enclosed.

ATTACHMENT 2

Request For Additional Information of December 28, 1994

The RAI dated September 25, 1995, requested, in part, that EOI submit the anticipated test procedures or a description of the analytical methodology including typical calculations which will be used to determine the ampacity derating parameters, or to inform your office of the earliest date by which this information will be provided for the Thermo-Lag fire barriers installed at RBS. As explained in previous RAI responses (most recently, RBG-42029 dated October 26, 1995) RBS is pursuing a comprehensive program to evaluate applications of Thermo-Lag in the plant. The project consists of two sections. The first is a re-analysis of the Safe Shutdown Methodology. This effort is expected to result in a significant reduction in the amount of fire wrap material required. The second will review the Thermo-Lag installations that remain and determine if the Thermo-Lag can be qualified as-is through additional testing, if the Thermo-Lag can be upgraded economically using methods similar to those tested by the Nuclear Energy Institute, or if the Thermo-Lag must be replaced with a different material.

The Project Instruction for evaluating ampacity is currently under development. Based upon the current project schedule, ampacity testing and/or model development will occur during the second quarter of 1996. A supplement to this response will be provided at that time with the anticipated test procedures or a description of the analytical methodology including typical calculations which will be used to determine the ampacity derating parameters. A summary of the process which is expected to be used is provided below.

1. Identify all required and abandoned Thermo-Lag wrapped raceways and the associated cables.
2. Sort cables by function:
 - 120 VAC or 125 VDC Control and Power Cables
 - Small Power Cables
 - Large Power Cables (480V)
 - Instrumentation Cables
 - 4 kV Power Cables
 - 13.8 kV Power Cables
3. Evaluate instrumentation cables for generic elimination from the analysis.
4. Evaluate 120 VAC and 125 VDC control cables for generic elimination from the analysis.
5. For all power cables, determine the component it supplies and load current.
 - For AC loads, use electrical transient analysis program (ETAP)
 - For DC loads, use calculated values for full load current at rated voltage and rated hp/kW
6. Develop ampacity adjustment factor (value greater than one).

7. Apply ampacity adjustment factor to determine minimum required ampacity.

Minimum Required Ampacity = Full Load Current X Ampacity Adjustment Factor

8. For each cable in a wrapped raceway, identify the cable diameter. Use this value to determine the base ampacity of the cable based upon 40° C in air.
9. Identify the maximum ambient design temperature for each room in which a wrapped raceway exists. Use this value to determine the ampacity derating adjustment for temperature.
10. Calculate the depth of cables in each wrapped tray (other than control cables). Use this value to determine an ampacity derating adjustment for cable depth.
11. Identify the wrap detail and determine if it is bounded by a Texas Utilities (TU) Electric Company test case. If yes, then use TU derating factor. If no, then develop additional analysis.
12. Calculate the derated cable ampacity with fire wrap using the TU ampacity derating value.
13. Knowing the cable ampacity with firewrap and the minimum required ampacity, calculate the margin. If margin is less than zero, perform additional analysis.