



**Entergy Operations, Inc.**  
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**Rick J. King**  
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August 11, 2003

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

**SUBJECT:** Entergy Operations, Inc.  
River Bend Station Unit 1  
Docket No. 50-458  
NRC Generic Letter 2003-01, "Control Room Habitability," 60-day response

**References:** 1. NRC Generic Letter 2003-01, "Control Room Habitability," June 12, 2003  
2. NEI 99-03, Revision 1, "Control Room Habitability Guidance," March 2003

RBG-46155  
RBF1-03-0147  
File Code G9.33.4

Dear Sir or Madam:

Entergy Operations, Inc. (Entergy), as the operator of the River Bend Station, hereby submits its 60-day response to NRC Generic Letter 2003-01 (Reference 1).

Entergy has reviewed the actions requested by Generic Letter 2003-01 and has determined that the 180-day schedule for the completion of all the requested actions cannot be met at River Bend Station. Therefore, Entergy is submitting this 60-day response in accordance with the provisions of the Generic Letter. This response has been developed utilizing the guidance provided by the Nuclear Energy Institute (NEI), as detailed in NEI 99-03, revision 1 (reference 2).

Commitments are summarized on the attached "Commitment Identification Form." If you have any questions, please contact Mr. Joe Leavines at 225-381-4642.

Sincerely,

A handwritten signature in cursive script that reads "Rick J. King".

RJK / dhw

Attachment:

1. 60-day Response to NRC Generic Letter 2003-01, "Control Room Habitability."

A102

cc:

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**Attachment 1 to RBG-46155  
Entergy Operations, Inc.  
60-day Response to NRC Generic Letter 2003-01**

## **1. INTRODUCTION**

Entergy Operations, Inc. (Entergy), has reviewed the actions requested by this generic letter and has determined that the 180-day completion schedule cannot be met at River Bend Station.

As requested by the generic letter, this report addresses the proposed alternative course of action Entergy proposes to take. It includes the basis for acceptability of this course of action and a scheduled date for completion.

## **2. PROPOSED ALTERNATIVE COURSE OF ACTION**

Entergy proposes to complete each of the actions described in Section 3 of NEI 99-03, revision 1. The following actions will be part of these assessments, as necessary and appropriate (the corresponding Section of NEI 99-03, Rev. 1 is shown in parenthesis):

- Assemble CRH licensing and design bases (3.1.1)
- Assemble CRH analyses (3.1.2)
- Document CRH licensing and design bases and analyses (3.1.3)
- Assess and evaluate licensing/design bases and operator dose analyses (3.2.1)
- Confirm that limiting DBA has been used to assure adequacy of CRH design (3.2.2)
- Assess and evaluate potential sources of hazardous chemicals. Update hazardous chemicals surveys as necessary (3.2.3)
- Assess and evaluate control room in leakage (3.2.4)
- Assess and evaluate control room during smoke events (3.2.5)
- Assess and evaluate the adequacy of existing control room emergency ventilation system technical specifications (3.2.6)

These initial actions will provide the technical basis for additional actions, such as modifications, tests, or technical specification changes. Following the completion of these actions, Entergy will submit to the NRC a written report summarizing the results. With this summary, Entergy will submit a plan for the resolution of any significant discrepancies or conditions adverse to quality. This plan will include a schedule for completion of each of these items. Entergy will submit this report no later than January 31, 2005.

## **3. BASIS FOR ACCEPTABILITY OF ALTERNATIVE COURSE OF ACTION**

This alternate course of action is acceptable for several reasons, which are detailed below.

### **1. River Bend Design**

All ductwork and HVAC equipment used to support the control room environment post accident is located inside the control room habitability envelope (CRE). The envelope includes the control room air conditioning units, the charcoal filter trains, and the suction and recirculation ductwork. A portion of ductwork for the local (normal) and remote air intakes is located outside the envelope. During the emergency mode of operation, the

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normal intake is isolated by two isolation valves. These isolation valves are identical to some containment isolation valves. Previous testing has demonstrated that any leakage across the normal outside air intake valves would leak into the suction of the charcoal filter trains and thereby be treated by the charcoal and HEPA filters.

River Bend has a positive pressure control room. Control room pressure, when in the emergency mode, is designed to be maintained consistently at approximately 1.0" water gauge (w. g.). These results exceed meet the Technical Specification requirement of .125" w. g. and provide assurance of boundary leak tightness. Additionally, previous testing has demonstrated that adjacent areas are at a lower pressure than the required post accident CRE pressure of 0.125" w. g. and, therefore, cannot infiltrate into the CRE. This testing was performed in 1999 as a revised response to Information Notices 86-76 and 88-61. Maintenance guidelines, as well as Engineering and Operations review of work packages, maintain the CRE integrity.

Work packages that breach the control room boundary are typically scheduled during periods when the boundary is not required. Routine surveillance testing demonstrates continued leak tightness of the envelope boundary by performing a positive pressure test every 18 months. In addition, River Bend has installed permanent plant instrumentation that monitors CRE pressure and provides alarms should that pressure decrease to a preset value.

## **2. Hazardous Material Surveys**

Contingency plans for releases of hazardous materials were recently re-assessed in conjunction with the station's implementation of enhanced security requirements.

Offsite transportation sources include truck shipments along US Highway 61 and barge shipments on the Mississippi River. Stationary offsite sources include storage containers located at a paper mill 3.4 miles south-southeast of the plant and at a coal-fired electric generating facility located across the Mississippi River from the site. There are no rail lines transporting hazardous chemicals within 5 miles of the site.

In a postulated accident, the entire contents of the largest single storage container are assumed to be released, resulting in a toxic vapor cloud and/or plume which are conservatively assumed to be transported by the wind directly toward the main control room air intakes. Conservative meteorological conditions of atmospheric stability, wind speed and temperature were assumed. Potential accidents with offsite chemicals do not jeopardize main control room habitability.

The River Bend Chemical Control Program regulates the use storage and disposal of chemicals present on site. New chemicals are required to be evaluated under this program for toxic characteristics and to have a control room habitability evaluation performed if applicable.

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**3. Available Operator Protection**

Emergency Implementing Procedure (EIP)-02-002, "Classification Actions," provides procedural guidance for mitigating the effects of toxic gas releases originating from either offsite or onsite sources. The main control room crew has access to self-contained breathing equipment and are qualified in its use. A dedicated smoke removal system is provided to purge the CRE in the event of a fire or smoke emergency.

**4. Alternative Source Term Implementation**

Entergy received NRC approval for implementation of the Alternative Source Term license amendment at River Bend on March 14, 2003. During the review phase of that application, Entergy made a commitment to perform a control room envelope (CRE) in-leakage tracer gas test by the end of Operating Cycle 12 (concurrent with the beginning of Refueling Outage no. 12, which is scheduled to begin October 17, 2004). The performance of that test and the analysis of its results will fulfill the confirmation that the control room meets the applicable habitability requirements.

The NRC staff also asked Entergy to perform a sensitivity analysis to determine the amount of unfiltered inleakage for which the resulting dose would still be within 10CFR50 Appendix A, General Design Criterion (GDC) 19 limits. The CRE and supporting ventilation systems were evaluated using NEI guidance for determining susceptibility to large amounts of unfiltered inleakage, and were found to be not susceptible. The results of the evaluation provided reasonable assurance that any unfiltered inleakage would be small, and that the resulting operator dose would be less than GDC 19 limits.

The sensitivity analysis identified one potential source of small amounts of unfiltered in-leakage. The control room smoke removal fan is part of the CRE ventilation system, and has ductwork that penetrates the CRE, and connects to the suction of the control room air handling units. This pathway contains two redundant, low-leakage isolation dampers that are automatically closed (if open) upon receipt of a design basis accident signal. A test was performed in February 2003 which confirmed there was no measurable leakage through these dampers.

**5. Smoke Event Evaluation**

In development of the post-fire safe shutdown analysis, fire damage is assumed to result from heat, smoke or ignition. Based on Reg. Guide 1.189, Section B, "Fire Protection Program Goals / Objectives" fire damage need only be assessed on the basis of a single fire. At River Bend, only two fire areas require Operator to evacuate the main control room and shut down the plant from the Division I remote shutdown panel due to a fire event. Those fire areas are the main control room (Fire Area C-25) and the main control room ventilation room (Fire Area C-17). The remote shutdown panel used for post-fire safe shutdown activities is located in a fire area that is physically separated from fire areas C-17 and C-25. The Division I remote shutdown room is located in Fire Area C-16. The physical separation between the various fire areas is composed of three hour rated fire barriers. These fire barriers consist of concrete walls and floors, fire dampers, and

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fire rated doors. All penetrations (pipe sleeves, electrical block-outs, etc.) through the concrete walls and floors separating fire areas contain a sealant material that has been tested, or has been evaluated, to be capable of withstanding the fire hazard (including the prevention of smoke propagation) for the area. All fire areas at River Bend are designed to completely contain any postulated fire and products of combustion that are likely to occur in the area. The egress pathway from the main control room to the Division I remote shutdown panel does not require traversing an area in which the fire is assumed to be occurring.

**4. GL 2003-01 ITEM 2, COMPENSATORY MEASURES**

Based on the sensitivity evaluation and damper leak testing discussed above, no compensatory measures are necessary to demonstrate control room habitability at River Bend.

**5. GL 2003-01 ITEM 3, APPLICABILITY OF GENERAL DESIGN CRITERIA (GDC)**

The control room fresh air system at River Bend is designed to maintain the control room environment for a 30 day continuous occupancy after a design basis accident, per the requirements of GDC 19 and 10CFR50.67. The operation of that system in maintaining the CRE habitability is discussed in the River Bend Updated Safety Analysis Report, Sections 6.4.1 and 9.4.1.

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**Commitment Identification Form**

<b>Commitment</b>	<b>Scheduled completion date</b>
Entergy proposes to complete each of the actions described in Section 3 of NEI 99-03, revision 1. These initial actions will provide the technical basis for additional actions, such as modifications, tests, or technical specification changes. Following the completion of these actions, Entergy will prepare and submit to the NRC, a written report summarizing the results. With this summary, Entergy will submit a plan for the resolution of any significant discrepancies or conditions adverse to quality. This plan will include a schedule for completion of each of these items. Entergy will submit this report no later than January 31, 2005.	January 31, 2005