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CNRO-2004-00012

March 4, 2004

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

SUBJECT: Response to NRC Request for Additional Information Pertaining to
Request for Relief RBS-VRR-008 (TAC No. MC1032)

River Bend Station
Docket No. 50-458
License No. NPR-47

REFERENCE: Letter from Entergy Operations, Inc to the NRC, *Request to Use
Alternate Testing Frequency for Inservice Testing*, dated
October 13, 2003

Dear Sir or Madam:

In the referenced letter, Entergy Operations, Inc. (Entergy) requested the NRC staff to authorize an alternate testing frequency for performing inservice testing (IST) of check valve E51-VF030 as detailed in Relief Request RBS-VRR-008. On December 3, 2003, Entergy received comments from the staff pertaining to this request. Entergy is providing responses to the staff's comments in the enclosure.

Should you have any questions regarding this letter, please contact Guy Davant at (601) 368-5756.

This letter contains no commitments.

Very truly yours,

FGB/GHD/ghd

Enclosure: Response to NRC Request for Additional Information Pertaining to Request for
Relief RBS-VRR-008

cc: (see next page)

A047

cc: Mr. W. A. Eaton (ECH)
Mr. P. D. Hinnenkamp (RBS)

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ENCLOSURE

CNRO-2004-00012

**RESPONSE TO
NRC REQUEST FOR ADDITIONAL INFORMATION
PERTAINING TO REQUEST FOR RELIEF RBS-VRR-008**

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NRC REQUEST FOR ADDITIONAL INFORMATION
PERTAINING TO REQUEST FOR RELIEF RBS-VRR-008**

1. Provide the related P&IDs drawing(s) that contains the relief request's check valve E51-VF030 in the Reactor Core Isolation Cooling System (RCIC) from the Reactor Coolant System (RCS) to the check valve.

Response:

River Bend Station (RBS) FSAR Figure 5.4-8 contains the P&ID showing RCIC and, specifically, E51-VF030 (at coordinate A-11).

2. Relief Request VRR-008 does not address the safety and risk significance of on-line inservice testing (IST) of check valve E51-VF030. Please address (either in a qualitative or quantitative manner) the potential risk of disassembly and inspection of this check valve on-line compared to the risk when the plant is shutdown.

Response:

RBS performs on-line maintenance on the RCIC system, which includes tasks such as pump and turbine inspections/minor maintenance, and inspection of the governor valve and its linkage. The system outage window for the basic inspections conducted on an 18-month frequency lasts approximately 72 hours. For more extensive maintenance activities, which occur on a less frequent basis, the window is longer. Based on review of maintenance history, disassembly, inspection, and reassembly of check valve E51-VF030 takes between 6 and 12 hours. This IST activity would be conducted simultaneously with other maintenance activities scoped into the maintenance window. Based on maintenance history, scheduling experience, and work execution in past on-line maintenance windows on the RCIC system, this additional work will neither extend the maintenance window nor increase the overall system unavailability. Therefore, performing this IST activity on-line would change neither the duration of the on-line maintenance activity nor the core damage probability (CDP) associated with the RCIC on-line maintenance activity. For these reasons, the risk/CDP over the entire operating/shutdown spectrum would remain unchanged with approval of this relief request.

3. Provide sufficient information for NRC staff to reach a safety or risk determination with regards to the leak testing experience and leak tightness reliability of the associated pressure isolation valves and the potential consequences of a loss of isolation capability during disassembly, inspection, and manual exercising of this check valve E51-VF030.

Response:

The valves that are used to establish the isolation boundary for the disassembly and inspection of E51-VF030 have an excellent history of providing adequate isolation.

The pressure upstream of the boundary isolation valve (E51-F031) is a result of the head developed from the water volume in the suppression pool. Because of this head pressure, the upstream pressure at the isolation valve varies only slightly between on-line and shutdown conditions. The piping downstream of E51-VF030 has two check

valves (E51-VF011 and E51-V3004) and two motor operated isolation valves (E51-F013 and E51-F0101) protecting it from system operating pressure. E51-VF011, V3004, and F013 isolate E51-VF030 from system pressure while E51-F010 provides isolation from the condensate storage tank inventory. Check valves VF011 and V3004 are tested for closure capability in accordance with the Inservice Testing program, and have shown to be reliable. E51-F013, until recently, was leakage tested as a pressure isolation valve with excellent success. Although the downstream system pressure varies between on-line and shutdown conditions, the redundancy and reliability of these valves minimizes any risk of loss of isolation capability.

Once adequate isolation is confirmed, it is maintained by passive isolating valves or valves made passive (e.g. de-energized motor operated valve), which are controlled in accordance with Entergy's protective tagging program. A loss of isolation capability under these conditions is not considered credible due to the passive characteristics of the isolating valves.

Additionally, when breaching a pressure boundary, standard maintenance practice is to monitor the component being disassembled to ensure there is no unexpected leakage during disassembly. This practice verifies integrity of the isolation boundary and allows for recovery of safe conditions should evidence of unexpected leakage become apparent.

4. Based on the risk significance discussed in RAI 3 above, discuss what preventive or compensatory measures are necessary to maintain safety and minimize risk while performing on-line IST.

Response:

Risk associated with on-line maintenance activities is controlled through the RBS work control process. This process includes preventive measures for maintaining safety and minimizing risk while performing on-line maintenance such as:

- a. Assessing work activities by multiple independent personnel to ensure work activities in one system do not affect the ability of redundant systems or trains to perform their safety functions.
- b. Establishing redundant systems or trains as "protected", so that these systems are less likely to be inadvertently made INOPERABLE while they are being credited to operate during the period that another safety system is out of service.
- c. Providing additional management oversight for significant maintenance activities being conducted while in Technical Specification (TS) Limiting Condition for Operation (LCO) REQUIRED ACTION statements.
- d. Conducting shift briefings to ensure that personnel are aware of active TS LCO REQUIRED ACTION statements.
- e. Using human performance tools including pre-job briefings, self-checking, and peer-checking to reduce or eliminate human errors.

5. Under the section entitled Basis for Relief, the licensee states that the maintenance rule 10 CFR 50.65(a)(4) requires licensees to assess and manage the increase of risk that may result from proposed maintenance activities. However, in order for the staff to evaluate whether the proposed IST alternative is acceptable, the licensee must demonstrate that the alternative provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i). Performing a risk assessment of the proposed on-line testing at the time of IST does not address why on-line testing provides an acceptable level of quality and safety at this time. Meeting the maintenance rule is a separate regulatory requirement. Nonetheless, discuss how risk insights, as well as other factors, will be used to establish when IST should be performed either on-line or during refueling outages.

Response:

The level of quality associated with IST activities is independent of whether the activity is performed on-line or during an outage. The same personnel, procedures, and acceptance criteria are used in either case; the safe conduct of maintenance and IST activities is built into the work control process. The inspection activities are planned ensuring adequate isolation boundaries are established to protect both maintenance personnel involved in the activity and plant equipment.

Entergy manages work windows on a recurring cycle. Risk insight is used to ensure that proposed work or inspection activities balance reliability with unavailability. The work selection process provides the means to ensure, through the oversight of knowledgeable personnel, that when system unavailability is to be incurred, the preventive maintenance, corrective maintenance, and other inspections required to maximize the system's reliability are included in the maintenance window. In this manner, each window is scoped to maximize the reliability benefit from taking system unavailability while minimizing the unavailability such that it is maintained at a level that minimizes overall risk. Entergy is confident that this rigorous work selection, scoping, and risk management system will identify all work that is more appropriately placed in outages, and schedule such work accordingly.

6. Explain how TS requirements for the RCIC system will be satisfied while performing on-line IST of this check valve E51-VF030 in the system. Specifically, address the LCO and describe the actions the licensee will take to ensure that on-line IST will be accomplished within the allowed outage time. Discuss the typical amount of time needed to complete the IST of this check valve based on previous testing experience. Similarly, describe any contingency plans that will be in effect to provide reasonable confidence that the TS allowed outage time (AOT) will not be exceeded if the check valve is found to be in a significantly degraded or unacceptable condition.

Response:

Work on check valve E51-VF030 and the other periodic work planned for the RCIC system will cause RCIC to become INOPERABLE in accordance with TS. In accordance with TS 3.5.3, operation with RCIC INOPERABLE is permitted for up to 14 days; the REQUIRED ACTION entered as the work window begins. As described in the response to Question 2, disassembly, inspection, and reassembly of E51-VF030 takes between 6 and 12 hours, which would typically be accomplished within a 72-hour work window. Work that requires entry into a TS LCO REQUIRED ACTION statement is planned and

scheduled in accordance with the RBS work control process previously described in Response to Item #4, above. The work control process includes establishing the scope of work such that only 50% of the TS AOT is required to perform the scheduled work. In addition, LCO Coordinators provide continuous coverage for resolving problems. Additionally, spare parts that may be necessary for rework are identified and made available in case rework becomes necessary. As discussed in the Response to Item #2, above, the inspection activities for E51-VF030 typically take from 6 to 12 hours. Based on the historical performance of E51-VF030, including this activity in the LCO window would not affect the duration of the time spent in the LCO REQUIRED ACTION.