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RBG-46510

December 19, 2005

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

SUBJECT: License Amendment Request
Removal of Temporary Note to Loss of Power Instrumentation
Requirements
River Bend Station, Unit 1
Docket No. 50-458
License No. NPF-47

REFERENCES:

1. Letter RBG-46474 from Mr. P. D. Hinnenkamp of Entergy Operations, Inc. to USNRC, "License Amendment Request – Corrections to Loss of Power Instrumentation Requirements," dated August 31, 2005 (ADAMS Accession no. ML052450192)
2. Letter RBG-46479 from Mr. R. J. King of Entergy Operations, Inc. to USNRC, "Supplement to Amendment Request - Corrections to Loss of Power Instrumentation Requirements," dated September 13, 2005 (ADAMS Accession no. ML052790099)
3. Letter from USNRC to Mr. P. D. Hinnenkamp of Entergy Operations, Inc., "River Bend Station, Unit 1 – Issuance of Amendment RE: Corrections to Loss of Power Instrumentation Requirements," dated September 15, 2005 (TAC NO. MC8227; ADAMS Accession no. ML052730189)

Dear Sir or Madam:

By Reference 1 above, Entergy Operations, Inc. (Entergy) proposed an exigent change to the River Bend Station, Unit 1 (RBS) Technical Specifications (TS) to revise certain requirements for the Loss of Power (LOP) instrumentation listed in TS Table 3.3.8.1-1. The NRC staff determined that sufficient information was provided by Reference 1 to approve the proposed changes on a temporary basis for the remaining operating cycle, but additional information was needed to complete the review for a permanent change. Entergy therefore revised the License Amendment Request (LAR) by Reference 2 to request a temporary change to the LOP instrumentation requirements. The NRC staff approved the temporary change as Amendment No. 147 by Reference 3. The temporary change will expire on June 1, 2006.

A001

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests that the changes to TS Table 3.3.8.1-1, approved on a temporary basis by Amendment No. 147, be made permanent. The proposed amendment deletes the temporary note, corrects the number of Required Channels per Division for the LOP time delay functions, and deletes the requirement to perform SR 3.3.8.1.2, the monthly Channel Functional Test, on certain LOP time delay functions. The analysis provided in Attachment 1 includes much of the information previously provided by Reference 1. The analysis has been modified from the original request to provide clarification and additional information to support the NRC staff's review of the proposed permanent changes.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards consideration. The basis for this determination is included in the attached submittal.

The proposed change does not include any new commitments.

Entergy requests approval of this amendment by May 25, 2006 in order to allow for implementation prior to expiration of the temporary change provided by Amendment No. 147.

If you have any questions or require additional information, please contact Ron Byrd at 601-368-5792.

I declare under penalty of perjury that the foregoing is true and correct. Executed on, December 19, 2005.

Sincerely,



Paul D. Hinnenkamp
Vice President, Operations
River Bend Station, Unit 1

PHD/RWB

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)

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Attachment 1

RBG-46510

Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-47 for River Bend Station, Unit 1 (RBS).

The proposed changes revise the Technical Specifications (TS) to make the temporary changes to TS Table 3.3.8.1-1, previously approved by Amendment No. 147, permanent. TS Table 3.3.8.1-1 is revised to delete the temporary note, correct the number of Required Channels per Division for the Loss of Power (LOP) time delay functions, and delete the requirement to perform SR 3.3.8.1.2, the monthly Channel Functional Test, for certain LOP time delay functions.

Entergy requests approval of this amendment by May 25, 2006.

2.0 PROPOSED CHANGE

TS Table 3.3.8.1-1 lists the LOP Instrument functions required to be OPERABLE by LCO 3.3.8.1, LOP Instrumentation. The Table also includes the required number of channels per division for each function, the Surveillance Requirements, and Allowable Values for each instrument function.

Item 1 of Table 3.3.8.1-1 pertains to the requirements for Division 1 and Division 2 emergency bus undervoltage protection functions. There are three time delay functions included:

<u>Function</u>	<u>Required Channels per Division</u>	<u>Surveillance Requirements</u>
b. Loss of Voltage - Time Delay	3	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4
d. Degraded Voltage – Time Delay, No LOCA	3	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4
e. Degraded Voltage – Time Delay, LOCA	3	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4

The required number of channels for these functions are incorrect. While the Loss of Voltage and Degraded Voltage functions consist of three channels per division, the circuitry is designed such that all three channels for each function send signals to a single time delay relay in each division. Thus, the required channels for the above time delay functions should be changed from three per division to one per division to be consistent with the current RBS design.

In addition, the Surveillance Requirements for the time delay functions include a Channel Functional Test, SR 3.3.8.1.2, to be performed at least once every 31 days. While this SR is applicable to the Loss of Voltage and Degraded Voltage channel functions, it should not have

been applied to the time delay functions because the time delay relay is not part of a channel (i.e., the channels lose their identity upstream of the time delay relays). This amendment request proposes to permanently delete the requirement to perform SR 3.3.8.1.2 for Functions 1.b, 1.d, and 1.e.

Item 2 of Table 3.3.8.1-1 pertains to similar requirements for the Division 3 emergency bus undervoltage protection functions. Similar to Divisions 1 and 2, there are three time delay functions included:

<u>Function</u>	<u>Required Channels per Division</u>	<u>Surveillance Requirements</u>
b. Loss of Voltage - Time Delay	2	SR 3.3.8.1.3 SR 3.3.8.1.4
d. Degraded Voltage – Time Delay, No LOCA	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4
e. Degraded Voltage – Time Delay, LOCA	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4

The above Division 3 table is correct except for the requirement to perform SR 3.3.8.1.2 for function 2.d. Function 2.e, the Division 3 Degraded Voltage Time Delay, LOCA, should continue to be tested per the Channel Functional Test (CFT) requirements of TS 3.3.8.1.2 but Function 2.d, the Division 3 Degraded Voltage Time Delay, no-LOCA, should not.

The Degraded Voltage Time Delay, LOCA (Function 2.e) instrumentation logic uses time delays that are an integral part of each of the two monitoring channels. Both time delay devices must actuate to provide the Loss of Power (LOP) trip function. Therefore, these time delays may be tested one at a time as part of the CFT without causing the LOP trip to occur.

The Degraded Voltage Time Delay, no-LOCA (Function 2.d) instrumentation logic uses two time delays. One is an integral part of each of the two monitoring channels (same monitoring channel used in the Degraded Voltage Time Delay, LOCA function). The other is a separate relay actuated by both monitoring channels. There are two sets of this logic and either set will cause the LOP trip function to occur. Therefore, while the monitoring channels may be tested one at a time without causing the LOP trip, the separate no-LOCA time delays cannot be tested without taking special measures to prevent an actuation of the LOP trip function. Preventing the LOP trip would involve the temporary lifting of circuit leads that creates the potential for an inadvertent transient.

In summary, Entergy proposes that the changes to TS Table 3.3.8.1-1, approved on a temporary basis by Amendment No. 147, be made permanent. The proposed amendment revises TS Table 3.3.8.1-1, to delete the temporary note, correct the number of Required Channels per Division for the LOP time delay functions, and delete the requirement to perform SR 3.3.8.1.2, the monthly Channel Functional Test, on certain LOP time delay functions.

3.0 BACKGROUND

3.1 System Functional Description

The Loss of Power (LOP) instrumentation is installed to monitor the normal power supply to the 4.16 kV emergency buses. Successful operation of the Emergency Core Cooling Systems (ECCS) is dependent upon the availability of adequate power sources. Offsite power is the preferred source of power for the 4.16 kV emergency buses. If the monitors determine that sufficient power is not available, the buses are disconnected from the offsite power sources and connected to the onsite diesel generator (DG) power sources. Each 4.16 kV emergency bus has its own independent LOP instrumentation and associated trip logic. The voltage on each bus is monitored at two undervoltage protection levels: loss of voltage and degraded voltage.

Loss of Voltage

A loss of voltage on a 4.16 kV emergency bus indicates that offsite power may be completely lost to the respective emergency bus and is unable to supply sufficient power for proper operation of the applicable equipment. Therefore, the power supply to the bus is transferred from offsite power to DG power when the voltage on the bus drops below the preset values with a short time delay of approximately 3 seconds. This ensures that adequate power will be available to the required equipment. The time delay is long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Degraded Voltage

A reduced voltage condition on a 4.16 kV emergency bus indicates that while offsite power may not be completely lost to the respective emergency bus, power may be insufficient for starting large motors without risking damage to the motors that could disable the ECCS function. Therefore, power supply to the bus is transferred from offsite power to onsite DG power when the voltage on the bus drops below the preset values with a time delay. The time delay is set long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that sufficient power is available to the required equipment.

The degraded voltage protection instrumentation is set at approximately 90 percent and utilizes two separate time delays based on the following conditions:

1. Degraded Voltage Time Delay - LOCA

One time delay is approximately 5 seconds, which accounts for a sustained degraded voltage condition (i.e., something longer than a motor starting transient). Following this delay, an alarm in the main control room alerts the operator to the degraded condition.

For Division 1 and 2, the subsequent occurrence of a LOCA signal immediately separates the Class 1E distribution system from the offsite power system, starts load shed logic and load sequence timers, starts the DG, and permits auto-close of the DG breaker.

For Division 3, the subsequent occurrence of a LOCA signal immediately separates the Division 3 bus from the offsite power system. The Division 3 bus will experience a loss of voltage and the primary undervoltage relays and control circuit will start load shed logic, start the diesel generator, and permit auto-close of the diesel generator breaker when the diesel generator attains its rated speed, voltage, and frequency.

2. Degraded Voltage Time Delay – no LOCA

The second time delay is approximately 60 seconds, which ensures that permanently connected Class 1E loads will not be damaged.

For Division 1 and 2, if the operator has failed to restore adequate voltages within this time delay, the Class 1E system is automatically separated from the offsite power system, the load shed logic and load sequence timers start, and the DG starts and permits auto-close of the DG breaker.

For Division 3, if the operator has failed to restore adequate voltages within the time delay, the Division 3 bus is automatically separated from the offsite power system. The Division 3 bus will experience a loss of voltage and the primary undervoltage relays and control circuit will start the load shed logic, start the diesel generator, and permit auto-close of the diesel generator breaker when the diesel generator attains its rated speed, voltage, and frequency.

The normal power supply to the Division 1 and 2 emergency buses are each monitored by six undervoltage relays. Three of the relays monitor the bus for a loss of voltage and three monitor the bus for degraded voltage conditions. The channels include electronic trip units that compare measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates and outputs a LOP trip signal to the trip circuit. The trip circuit is arranged in a two-out-of-three logic configuration. The trip circuit includes a time delay to avoid unnecessary trips.

The normal power supply to the Division 3 emergency bus is monitored by four undervoltage trip units, two for a loss of voltage and two for degraded voltage. The loss of voltage trip circuit is arranged in a one-out-of-two logic configuration with a time delay of approximately 3 seconds.

The Division 3 degraded voltage trip circuit is arranged in a two-out-of-two logic configuration. Both Division 3 degraded voltage monitors contain an integrated time delay of approximately 5 seconds. The output from the two monitors combine signals for a two-out-of-two logic and output to two redundant "no-LOCA" time delay relays. Actuating either time delay relay will provide the LOP trip function. The time delays provide a total delay of approximately 60 seconds for the "no-LOCA" condition.

3.2 Licensing Basis Background:

The RBS LOP circuitry logic design and on-line test capability was reviewed by the NRC staff as documented in section 8.4.1 of the RBS Safety Evaluation Report, NUREG-989. The NRC staff concluded that the design of the first level of undervoltage protection (i.e., loss of

voltage) was acceptable. However, the staff found that the original design of the second level of undervoltage protection (i.e., degraded voltage) was not in compliance with Branch Technical Position (BTP) PSB-1, "Adequacy of Station Electric Distribution System Voltages," because the automatic separation of the safety buses on degraded voltage was limited to only the LOCA condition. RBS subsequently modified the logic to include the use of two time delays, one for LOCA and one for no-LOCA conditions. The NRC concluded that the modified logic was acceptable.

BTP PSB-1 states that the TS shall include limiting conditions for operations, surveillance requirements, trip setpoints with minimum and maximum limits, and allowable values for the second-level voltage protection sensors and associated time delay devices. Requirements for LOP instrumentation were included in the RBS TS. Prior to conversion to the Improved Technical Specifications (ITS), the RBS TS included the following requirements for LOP Instrumentation:

<u>Trip Function</u>	<u>Total Channels</u>	<u>Surveillance Requirements</u>
<u>1. Div. 1 & 2</u>		
a. 4.16 kV Sustained Undervoltage	3/bus	Channel Check once per 12 hours, Channel Functional Test once per 31 days, and Channel Calibration once per 18 months.
b. 4.16 kV Degraded Voltage	3/bus	Same as above
<u>2. Div. 3</u>		
a. 4.16 kV Sustained Undervoltage	2/bus	Same as above
b. 4.16 kV Degraded Voltage	2/bus	Same as above.

Note that the time delay functions were not listed as separate functions prior to converting the RBS TS to the ITS format. The RBS TS was converted to the ITS format by Amendment 81 dated July 20, 1995. NUREG-1434, *Standard Technical Specifications, General Electric Plants, BWR/6*, included the LOP time delays as separate functions in Table 3.3.8.1-1, Loss of Power Instrumentation.

The RBS amendment request for the ITS conversion incorrectly listed the time delay functions for Divisions 1 and 2 as having three channels per division when in fact the RBS design uses only one single relay for each function in each division. The trip signal from the three channel trip logic is combined prior to the common time delay relay. This proposed amendment seeks to correct this error by identifying that the time delay functions are only one per division.

In addition, the ITS NUREG, Rev. 0 provided Surveillance Requirements (SR) for the time delay functions. SR 3.3.8.1.2, the monthly Channel Functional Test, was bracketed in the ITS NUREG as it applied to the time delay functions. The ITS NUREG uses brackets for SRs that are optional. RBS incorrectly wrote the TS to apply the requirements of SR 3.3.8.1.2 to some of the LOP time delay functions. SRs that were required (i.e., not optional) for the time delay

functions were SR 3.3.8.1.3, the Channel Calibration, and SR 3.3.8.1.4, the Logic System Functional Test. RBS correctly incorporated these SRs on an 18 month frequency.

SR 3.3.8.1.2, the optional monthly Channel Functional Test, should not have been incorporated into the RBS TS for most of the time delay functions because the time delay relays are not identified as part of the channel. The LOP channel trip signals for each function are combined to provide a single action signal to a single time delay relay. IEEE 279-1971 defines "Channel" as follows:

An arrangement of components and modules as required to generate a single protection action signal when required by a generating station condition. A channel loses its identity where single action signals are combined.

NRC Inspection Manual (IM) Part 9900, STD10D.TG, "Standard Technical Specification Section 1.0 Definitions," endorses the IEEE definition. The IM states,

A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions and channel failure trips.
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

THE CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is tested.

This definition is based on industry standards (IEEE-279 and 380) which define a "channel" as: "An arrangement of components and modules as required to generate a single protective action signal when required by a generating station condition. A channel loses its identity where single-action signals are combined."

Therefore, CFT must test to the point where single-action signals are combined. An entire channel includes all contacts, relays, indications, and alarms which precede the point where the single signals are combined.

Since the channels in the RBS circuitry lose their identity upstream of the timers associated with the "Loss of Voltage" and "Degraded Voltage" functions, the time delay functions should not have been included in the monthly Channel Functional Test. Furthermore, the NRC Safety Evaluation for Amendment 81 stated that separating the time delays in improved TS 3.3.8.1, was for presentation preference only and did not change any requirements due to this separation (see section 3.3.A.7 of Reference 1).

The changes proposed by this application for amendment seek to correct TS Table 3.3.8.1-1 to achieve conformity with the RBS design and the above regulatory position.

4.0 TECHNICAL ANALYSIS

The proposed changes regarding the number of required channels per division for the time delay functions are administrative in nature. The changes do not alter the instrumentation design or their physical configuration, and will not affect their operation or manner of control. The proposed changes correct an inconsistency with the RBS design basis. The required number of voltage sensors per division and associated channel components that monitor voltage conditions and provide the 4.16 kV bus undervoltage protection are unchanged.

The proposed change to exclude the time delay functions from the requirements of SR 3.3.8.1.2, the monthly Channel Functional Test, is consistent with the option provided by the ITS NUREG and is consistent with the definition of a channel provided by IEEE 279 as endorsed by NRC IM Part 9900.

Performing the Channel Functional Test of the time delay functions during power operations is undesirable. While testing an individual channel does not create a loss of function for the LOP instrumentation, performing a functional test of the common time delay relay would create a loss of function for that division. The tests could also create the potential for an unintended plant transient. Such an incidence occurred during a plant refueling outage in October 2004 when a technician caused an inadvertent trip of the Division 1 ESF bus. The technician unintentionally contacted an adjacent terminal while attempting to install test jumpers for a scheduled surveillance. That event was reported in LER 50-458/ 04-003.

Entergy reviewed the testing and maintenance history for the RBS LOP time delay relays since 1994 and identified only one failure. The contacts of the Division 1 degraded voltage - LOCA time delay had failed during testing in 1997. With the failed short time delay, the long time delay circuitry would have separated the bus from the normal power supply and connected the DG to the bus after approximately 60 seconds if operators had not taken manual action sooner. The time delay relay was replaced.

During the same 1997 refueling outage, the Division 2 degraded voltage – no LOCA time delay relay was found to be out of calibration tolerances, but would still have performed its degraded voltage equipment protection function. The as-found value was 66.7 seconds which is only slightly above the TS Allowable Value of ≤ 66.6 seconds.

There have been four challenges to the LOP instrument functions within the last five years which are documented in the following Licensee Event Reports (LERs)

LER 50-458/ 01-004 involved a loss of power to the Division 2 ESF bus that occurred on October 17, 2001 when the normal feeder breaker unexpectedly opened due to a failed optical isolator card.

LER 50-458/ 04-002 involved a loss of power to the Division 1 ESF bus that occurred on October 1, 2004 when a flashover on the insulators in the transformer yard caused a loss of the Reserve Station Service feed to the bus.

LER 50-458/ 04-003 involved a loss of power to the Division 1 ESF bus that occurred on October 31, 2004 when the normal feeder breaker unexpectedly tripped due to

inadvertent contact with an adjacent terminal during the installation of test jumpers for a planned surveillance test.

LER 50-458/ 04-004 involved a loss of power to the Division 2 ESF bus that occurred on November 1, 2004 when an inadvertent trip signal was generated during scheduled testing of the sudden overpressure relay on a preferred station service transformer.

In each case the LOP instrumentation responded as designed by automatically restoring power to the bus with its respective Emergency Diesel Generator.

Given the reliable history of the LOP time delay relays, a monthly test is unwarranted and would be inappropriate to perform during power operations since the test causes a loss of the trip function and creates the potential for a plant transient.

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met.

Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any General Design Criterion (GDC) differently than described in the Updated Safety Analysis Report (USAR.)

GDC Criterion 18, "Inspection and Testing of Electric Power Systems," requires that electric power systems important to safety be designed to permit periodic inspection and testing of such systems for operability and functional performance. Compliance with GDC Criterion 18 is discussed in the RBS USAR section 3.1.2.18. This section notes that the transfer of power between the offsite power system and the onsite power system can be demonstrated during refueling outages. The 18-month LOP instrument calibrations and logic system functional tests comply with GDC 18 to provide assurance that the time delay relays are functioning properly.

Branch Technical Position (BTP) PSB-1, "Adequacy of Station Electric Distribution System Voltages," was written to ensure that voltage protection features adequately protected against the effects of sustained low grid voltage conditions. The current RBS undervoltage protection logic meets the design requirements of BTP PSB-1 (i.e., the sensors are independent for each division, includes two separate time delays for the second level of undervoltage protection, and the coincident logic is on a per bus basis). The BTP-PSB-1 also requires the design to include the capability for test and calibration of the voltage sensors during power operation. The proposed change reflects the RBS design and does not alter compliance with the BTP.

The RBS LOP circuitry logic design and on-line test capability was reviewed by the NRC staff as documented in section 8.4.1 of the RBS Safety Evaluation, NUREG-989. The staff concluded that the design of the first level of undervoltage protection (i.e., loss of voltage) was

acceptable. However, the staff also found that the original design of the second level of undervoltage protection (i.e., degraded voltage) was not in compliance with BTP PSB-1 because the automatic separation of the safety buses on degraded voltage was limited to only the LOCA condition. RBS subsequently modified the logic to include the use of two time delays, one for LOCA and one for no-LOCA conditions. The NRC concluded that the modified logic was acceptable. The proposed TS changes do not affect compliance with BTP PSB-1 as previously reviewed and approved by the NRC staff during the original licensing process.

Excluding the time delay functions from the Channel Functional Test is consistent with the standards of IEEE 279 as endorsed by NRC IM Part 9900.

10 CFR 50.36 (c)(3) requires the TS to include Surveillance Requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The Channel Functional Test will continue to be performed every 31 days for the sensor channels that input signals to the time delays. In addition, the LOP time delay functions will continue to be functionally tested and calibrated every 18 months as required by SR 3.3.8.1.3 and SR 3.3.8.1.4. Therefore, the required LOP instrumentation continues to be tested in a manner and at a frequency necessary to provide confidence that the instrumentation can perform its intended safety function.

5.2 No Significant Hazards Consideration

Entergy Operations, Inc. (Entergy) proposes to revise the River Bend Station Technical Specifications (TS) to make the temporary changes to TS Table 3.3.8.1-1, previously approved by Amendment No. 147, permanent. TS Table 3.3.8.1-1 is revised to delete the temporary note, correct the number of Required Channels per Division for the Loss of Power (LOP) time delay functions, and delete the requirement to perform SR 3.3.8.1.2, the monthly Channel Functional Test, for certain LOP time delay functions. The proposed changes will achieve conformity with the current RBS design basis and regulatory standards.

Entergy Operations, Inc. has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes regarding the number of required channels per division for the LOP time delay functions are administrative in nature. The changes do not alter the instrumentation design or their physical configuration, and will not affect their operation or manner of control. The proposed changes correct an inconsistency between a TS Table and the RBS design basis. The TS required number of voltage sensors per division and associated channel components that monitor voltage conditions and provide the 4.16 kV bus undervoltage protection are unchanged.

The exclusion of the time delay functions from the monthly Channel Functional Test is proposed because the test creates a loss of function for the LOP instrumentation and is therefore undesirable during unit operations. The test also introduces the potential for an unintended plant transient, so the elimination of the requirement reduces the potential for such transients.

The channel functional test will continue to be performed every 31 days for the sensor channels. In addition, the LOP time delay functions will continue to be functionally tested and calibrated every 18 months as required by SR 3.3.8.1.3 and SR 3.3.8.1.4. Therefore, the required LOP instrumentation will continue to be tested in a manner and at a frequency necessary to provide confidence that the instrumentation can perform its intended safety function.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The changes do not alter the instrumentation design or their physical configuration, and will not affect their operation or manner of control. The proposed TS changes do not introduce any new failure mechanisms, malfunctions, or accident initiators not considered in the design and licensing bases.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed changes have no affect on any safety analysis assumptions or methods of performing safety analyses. The changes do not adversely affect system OPERABILITY or design requirements and the equipment continues to be tested in a manner and at a frequency necessary to provide confidence that the equipment can perform its intended safety functions. 10 CFR 50.36 (c)(3) requires the TS to include Surveillance Requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will

be within safety limits, and that the limiting conditions for operation will be met. The channel functional test will continue to be performed every 31 days for the sensor channels. In addition, the LOP time delay functions will continue to be functionally tested and calibrated every 18 months as required by SR 3.3.8.1.3 and SR 3.3.8.1.4.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Entergy concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.3 Environmental Considerations

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 PRECEDENCE

By Reference 7.2 below Entergy proposed an exigent change to the RBS Technical Specifications to revise certain requirements for the LOP instrumentation listed in TS Table 3.3.8.1-1. The NRC staff determined that additional information was needed to complete the review and that the review could not be completed as requested on an exigent basis. However, it was also concluded that sufficient information was available in the original request to review the proposed changes for a limited application to the remaining operating cycle. The NRC staff approved the temporary change as Amendment No. 147 by Reference 7.4. This LAR requests that the changes to TS Table 3.3.8.1-1, approved on a temporary basis by Amendment No. 147, be made permanent.

The analysis of the proposed permanent TS changes provided in this request includes much of the information previously provided by Reference 7.2. The analysis has been modified from the original request to provide clarification and additional information. Changes to the original analysis are:

- Information was revised in Section 2.0 to better explain why Function 2.e, the Division 3 Degraded Voltage Time Delay, LOCA, will continue to be tested per the CFT requirements of TS 3.3.8.1.2 but Function 2.d, the Division 3 Degraded Voltage Time Delay, no-LOCA, will not.
- Additional licensing background information was added to Sections 3.2 and 5.1.
- Additional Information on the testing, maintenance, and operating history of the time delay relays was added to section 4.0.

7.0 REFERENCES

- 7.1 Letter RBC-46160 from USNRC to Mr. John R, McGaha of Entergy Operations, Inc., "Amendment No. 81 to Facility Operating License No. NPF-47 (TAC No. M88314) dated July 20, 1995.
- 7.2 Letter RBG-46474 from Mr. P. D. Hinnenkamp of Entergy Operations, Inc. to USNRC, "License Amendment Request – Corrections to Loss of Power Instrumentation Requirements," dated August 31, 2005 (ADAMS Accession no. ML052450192).
- 7.3 Letter RBG-46479 from Mr. R. J. King of Entergy Operations, Inc. to USNRC, "Supplement to Amendment Request - Corrections to Loss of Power Instrumentation Requirements," dated September 13, 2005 (ADAMS Accession no. ML052790099).
- 7.4 Letter from USNRC to Mr. P. D. Hinnenkamp of Entergy Operations, Inc., "River Bend Station, Unit 1 – Issuance of Amendment RE: Corrections to Loss of Power Instrumentation Requirements," dated September 15, 2005 (TAC NO. MC8227; ADAMS Accession no. ML052730189)

Attachment 2

RBG-46510

Proposed Technical Specification Changes (mark-up)

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER DIVISION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Divisions 1 and 2 - 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage - 4.16 kV basis	3	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2850 V and ≤ 3090 V
b. Loss of Voltage - Time Delay	1	SR 3.3.8.1.1 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2.67 seconds and ≤ 3.33 seconds
c. Degraded Voltage - 4.16 kV basis	3	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3689.0 V and ≤ 3735.2 V
d. Degraded Voltage - Time Delay, No LOCA	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 53.4 seconds and ≤ 66.6 seconds
e. Degraded Voltage - Time Delay, LOCA	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 4.5 seconds and ≤ 5.7 seconds
2. Division 3 - 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage - 4.16 kV basis	2	SR 3.3.8.1.1 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2831 V and ≤ 3259 V
b. Loss of Voltage - Time Delay	2	SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2.67 seconds and ≤ 3.33 seconds
c. Degraded Voltage - 4.16 kV basis	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3674.0 V and ≤ 3721.2 V
d. Degraded Voltage - Time Delay, No LOCA	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 53.4 seconds and ≤ 66.6 seconds
e. Degraded Voltage - Time Delay, LOCA	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 4.5 seconds and ≤ 5.7 seconds

* On a one-time basis, the Required Channels Per Division is changed from "3" to "1" for Functions 1.b, 1.d, and 1.e. Also on a one-time basis, the requirements of SR 3.3.8.1.2 are not applicable to Functions 1.b, 1.d, 1.e, and 2.d. These one-time changes expire on June 1, 2006.