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**Joseph E. Venable**
Vice President, Operations

DRAFT

June , 2007

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

SUBJECT: Supplement to Amendment Request
Changes to the Analytical Methods Referenced in Technical Specification 5.6.5, "Core Operating Limits Report (COLR)," TAC No. MD3293
River Bend Station, Unit 1
Docket No. 50-458
License No. NPF-47

REFERENCE: Letter RBG-46583, "License Amendment Request: Changes to the Analytical Methods Referenced in Technical Specification 5.6.5, "Core Operating Limits Report (COLR)" dated October 16, 2006 (ADAMS Accession No. ML062960299)

Dear Sir or Madam:

By the above referenced letter, Entergy Operations, Inc. (Entergy) proposed a change to the River Bend Station, Unit 1 (RBS) Technical Specifications (TS) to add a NRC previously approved topical report to the analytical methods referenced in Technical Specification (TS) section 5.6.5, "Core Operating Limits Report (COLR)."

On May 4, 2006, Entergy and members of your staff held a call to discuss questions concerning the proposed change. As a result of the call, Entergy was asked to provide additional information on five items in a formal response. Entergy provided a draft response by e-mail dated May 10. 2007. After reviewing the draft response, the NRC requested the following additional clarifications on June 14, 2007:

1. Your response to item (3) mentions that the precise PCT impact for each of the changes has not been quantified because a through sensitivity analysis is not

practical. The licensee should know all the impact to this higher PCT results due to each influential parameter with some other's consulting services.

2. Your response to item (4) mentions that since the initial MCPR value of 1.16 remains non-limiting and is conservatively bounding for the current and expected future cycles, the same initial value is used in the EXEM BWR-2000 LOCA analysis. How can a non-limiting MCPR value become conservatively bounding for the current and expected future cycles?

Entergy's response is contained in Attachment 1. The response to items 3 and 4 also address the above request for clarification.

There are no technical changes proposed. The original no significant hazards consideration included in Reference 1 is not affected by any information contained in the supplemental letter.

The proposed change does not include any new commitments.

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 [insert date].

Sincerely,

Joseph E. Venable
Vice President, Operations
River Bend Station, Unit 1

JEV/RWB

Attachments:
1. Analysis of Proposed Technical Specification Change

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

cc: NRC Senior Resident Inspector
P. O. Box 1050
St. Francisville, LA 70775

U.S. Nuclear Regulatory Commission
Attn: Mr. Bhalchandra K. Vaidya MS O-7D1
Washington, DC 20555-0001

Mr. Jeff Meyers
Louisiana Dept. of Environmental Quality
Office of Environmental Compliance
P. O. Box 4312
Baton Rouge, LA. 70821-4312

**Response to Request for Additional Information Related to
Proposed Changes to the Analytical Methods Referenced in TS 5.6.5**

Question:

With respect to the use of the proposed EXEM BWR-2000 model, please provide:

(1) the detailed explanation why the increase in PCT is beyond 50°F using the proposed EXEM BWR-2000 model. Since the 94°F PCT increase is a significant increase above the 50°F, a more detailed explanation is required;

Response:

The change in Peak Clad Temperature (PCT) is the result of the change in methodology as well as more conservative assumptions for two input parameters as stated in Section 4.0 of the RBS License Amendment Request (Reference 1). The input parameters used for both analyses are provided in Tables 1 through 5 of Attachment 1 to Reference 1. Processes in place at RBS ensure that the input parameters bound actual plant performance.

The input parameters changed are the number of Automatic Depressurization System (ADS) valves available and the reactor vessel low pressure Emergency Core Cooling System (ECCS) permissive value. Specifically, the new analyses assume operation of only 4 ADS valves; whereas, the current analyses assume operation of 5 ADS valves. The reactor vessel low pressure ECCS permissive was changed from 450 to 350 psia.

The ADS consists of 7 of the 16 Main Steam Safety Relief Valves. The ADS is designed to provide depressurization of the reactor pressure vessel (RPV) during a small break Loss of Coolant Accident (LOCA) if the High Pressure Core Spray (HPCS) fails or is unable to maintain required water level in the RPV. ADS operation reduces the RPV pressure to within the operating pressure range of the low pressure ECCS systems (Low Pressure Core Spray (LPCS) and Low Pressure Coolant Injection (LPCI) systems), so that these systems can provide core cooling. The Technical Specifications require 7 ADS valves to be operable. Assuming that only 4 ADS valves operate is conservative but does not have a significant impact on PCT because the RBS limiting analysis for PCT is a large break LOCA. The RPV depressurization rate during a large break is not significantly affected by whether 4 or 5 ADS valves are assumed to function.

The reactor vessel low pressure permissive signals ensure that, prior to opening the LPCI and LPCS injection valves, the reactor pressure has fallen to a value below these systems' maximum design pressure. The Technical Specifications require the permissive setpoint to be at or above 472 psig. Using a pressure permissive value of less than 472 psig for the analysis is conservative because the ECCS injection is delayed until the reactor vessel pressure falls to the low pressure value.

Both of these changes represent more conservative conditions. As such, the input parameters for the new analyses continue to bound actual plant performance.

With respect to the change in PCT, the impact associated with the operation of one less ADS valve is not significant since the limiting break for RBS is the large break. Thus, the observed increase in PCT is due primarily to the conservative lower reactor pressure ECCS permissive assumptions.

(2) which parameter such as reactor pressure permissive for operating valves or number of valves available contributes the most increase in PCT of 94 °F due to changing the old EXEM BWR model to EXEM BWR-2000 model in the River Bend LOCA analysis;

Response

As discussed above, the lower reactor pressure permissive signal assumed for the LPCI and LPCS injection valves is the most significant contributor to the increase in PCT.

(3) the results of the calculation based on the same assumptions used for EXEM BWR model

Response

As explained in responses (1) and (2) above, the primary contributor to the increased PCT is the conservative assumption of a lower reactor pressure permissive parameter (from 450 psia to 350 psia). It is expected that without any changes to the analysis inputs, the EXEM BWR-2000 methodology would have produced a slightly lower PCT than the current EXEM BWR methodology used (i.e., the resulting PCT would be less than 1875° F). The precise PCT impact for each of the changes has not been quantified because a thorough sensitivity analysis is not practical. However, it is estimated that the increase in PCT due to the conservative assumption of a lower reactor pressure permissive parameter is more than 100° F. It should be noted that since the TS limit on the reactor pressure permissive is unchanged, actual low pressure ECCS performance during a LOCA would continue to be as currently designed resulting in no increase in PCT.

(4) the rational for not using the lower initial MCPR input value in the EXEM BWR-2000 model

Response

The initial hot assembly MCPR input selected for the new analysis is consistent with the current analysis. For AREVA LOCA analyses, the initial MCPR chosen for the analyses is a value that is above the MCPR safety limit (SLMCPR), but is below the expected MCPR Operating Limit (OLMCPR) as determined from the limiting analyzed Anticipated Operational Occurrences (AOO's). This is done to add conservatism to the LOCA calculation and to ensure that the LOCA analyses are performed at a

conservative MCPR that is below the actual OLMCPR. The lower the initial MCPR, the higher the power in the hot channel which in turn results in higher PCT.

If the assumed MCPR was above the AOO OLMCPR, then the actual OLMCPR would be set by the MCPR assumed in the LOCA analysis and would be overly conservative. The assumed MCPR of the RBS LOCA analyses of 1.16 does not result in reduced operating margins, since the actual OLMCPR is set by AOOs which are higher. If the AREVA LOCA analyses were re-analyzed at the AOO OLMCPR, the PCT would decrease. Therefore, it is concluded that the LOCA MCPR of 1.16 is conservative for evaluating 10CFR50.46 criteria, and does not impact OLMCPR margins.

(5) consistent common assumptions used for the analysis to support APLHGR.

Response

The LOCA analysis to support APLHGR uses the NRC approved EXEM BWR-2000 LOCA methodology and the plant –specific input parameters such as reactor power, core flow, and ECCS parameters. The plant –specific input parameters used in the LOCA analysis are selected to be bounding for actual plant performance within the RBS licensing basis.

References :

1. Letter RBG-46583 , “License Amendment Request: Changes to the Analytical Methods Referenced in Technical Specification 5.6.5, “Core Operating Limits Report (COLR)” dated October 16, 2006 (ADAMS Accession No. ML062960299)