Entergy

Entergy Nuclear South
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066
Tel 504 739 6440
Fax 504 739 6698
kpeters@entergy.com

Ken Peters
Director, Nuclear Safety Assurance
Waterford 3

W3F1-2003-0077

September 29, 2003

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

SUBJECT: Supplemental Information Regarding Amendment Request
Addition of CEN-372 to Technical Specification 6.9.1.11.1
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

REFERENCES:
1. Entergy letter dated December 16, 2002, *Use of CEN-372-P-A* (W3F1-2002-0104)
2. Entergy letter dated July 30, 2003, *Addition of CEN-372 to Technical Specification 6.9.1.11.1* (W3F1-2003-0056)

Dear Sir or Madam:

In Reference 1, Entergy Operations, Inc. (Entergy) proposed a change to the Waterford Steam Electric Station, Unit 3 (Waterford 3) Technical Specifications (TSs) to add the topical report entitled "Fuel Rod Maximum Allowable Gas Pressure," CEN-372-P-A, to the list of analytical methods in TS 6.9.1.11.1 used to determine the Waterford 3 core operating limits. In a conference call on June 10, 2003, Entergy and members of your staff discussed four questions developed during the technical review of this request. A response to those questions was provided in Reference 2.

On September 10, 2003, the NRC requested additional information regarding cladding oxidation reported for the large break LOCA. Specifically, the NRC questioned whether the oxidation value presented in the RAI response included pre-accident oxidation due to burnup. The information was discussed in a telephone call between Entergy and the NRC on September 16, 2003. The oxidation value presented in Reference 2 was calculated with an NRC-approved methodology, which uses a minimum value for pre-accident oxidation that is based on an estimate of oxidation of the new fuel. A minimum value is used to provide conservative results for the peak cladding temperature and the transient cladding oxidation.

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Pre-accident cladding oxidation as a function of burnup can be derived using an approved methodology provided in ABB Combustion Engineering Nuclear Fuel Topical Report CEN-386-P-A, "Verification of Acceptability of a 1-Pin Burnup Limit of 60 MWD/kgU for Combustion Engineering 16 x 16 Fuel," dated August 1992. The calculation of oxidation using this methodology is outlined in an Arizona Public Service letter dated August 22, 2003. As noted in that letter as an example of the conversion process, assuming a nominal cladding thickness of 25 mils, an average burnup of 40 MWD/kgU, and the oxide thickness derived from the topical report (Figure 4.1.2.a-1), the estimated cladding wastage (i.e., the pre-accident oxidation) is 4.04%.

On September 24, 2003 the NRC requested clarification of Entergy's response to a question provided in Reference 2. The large break LOCA results for W3 are determined using the 1985 Large Break Evaluation Model, "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS", CENPD-132, Supplement 3-P-A, June, 1985. The small break LOCA results for W3 are determined using the S2M Model, "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model", CENPD-137-P, August 1974: Supplement 2-P-A, April, 1998.

There are no new commitments contained in this letter. If you have any questions or require additional information, please contact D. Bryan Miller at 504-739-6692.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 29, 2003.

Sincerely,

K. J. Peters
Director, Nuclear Safety Assurance
Waterford Steam Electric Station, Unit 3

KJP/FGB/cbh

cc: T. P. Gwynn, NRC Region IV
N. Kalyanam, NRC-NRR
J. Smith
N.S. Reynolds
NRC Resident Inspectors Office
Louisiana DEQ/Surveillance Division
American Nuclear Insurers