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Waterford 3

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April 29, 1997

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Special Test/Experimental High Burnup Fuel Assembly for Cycle 9

Gentlemen:

The purpose of this letter is to communicate Waterford 3's plans to support the development of an ABB CENO topical report verifying the acceptability of burnups greater than 60,000 MWd/MTU for ABB CENO 16 x 16 fuel.

In this regard, Waterford 3 will conduct a special test/experiment on a single Batch J fuel assembly during Cycle 9, which is scheduled to commence on May 21, 1997. The purpose of this special test/experiment will be to demonstrate acceptable performance including corrosion resistance of the current standard ABB CENO low-tin Zircaloy-4 fuel pin cladding, for fuel assembly one-pin (axially integrated) burnups up to 66,200 MWd/MTU. After careful inspection for integrity, the fuel assembly will be placed back in the core to experience burnup exceeding 60,000 MWd/MTU. The inspection will be consistent with UFSAR Section 4.2 surveillance requirements. This visual inspection will consist of viewing the top and sides of the assembly using an underwater TV camera. The inspection will include special attention to problems involving cladding defects, spacer grid damage and any other structural abnormalities as directed by the UFSAR. The special test/experiment will not be conducted if an acceptable Batch J fuel assembly cannot be identified.

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Since the Batch J fuel assembly pins (220 total) will operate with one-pin fuel burnups in excess of the current Waterford 3 limit of 60,000 MWd/MTU, which is specified in Appendix 4.3A, 3.1.3 of the UFSAR, a 10CFR50.59 safety evaluation was performed. The results of the safety evaluation determined that this test/experiment does not involve an unreviewed safety question and a change to the Technical Specifications is not required. Fuel design and performance analyses were conducted specifically to support extending the burnup of the Batch J fuel assembly. These analyses provided acceptable results with all design criteria being met Therefore, Waterford 3 has determined that NRC approval is not required to conduct this test/experiment on the Batch J fuel assembly. However, a copy of the 10CFR50.59 safety evaluation is enclosed for information purposes.

It should be noted that Waterford 3 is very sensitive to the violation (No. 9403-02) received in 1994 pertaining to exceeding burnup limits. In that case, the violation pertained to exceeding the approved burnup limit during normal operation based on projected results for standard cycle fuel. This case is different in that it is a special test/experiment which involves its distinctive safety analyses, fuel design and performance analyses, and special inspection. The performance of this fuel assembly has been specifically examined to ensure that all design limits are not exceeded. The assembly will be visually examined prior to insertion in the core. This is a limited scope test/experiment with a single fuel assembly for the purpose of gathering data to support future higher burnups rather than an intent to operate the core above the burnup limit.

Waterford 3 is aware that another utility has also submitted the associated 10CFR50.59 safety evaluation to the NRC for information purposes in a similar special situation. This similar situation also involved the docketed burnup limit being exceeded.

At the end of Cycle 9, the information gained from this special test/experiment on the Batch J assembly will provide actual in-reactor test data to support the development of an ABB CENO topical report demonstrating the acceptability of higher burnup fuel for this type of cladding. This report will be ultimately submitted to the NRC for generic approval.

Should you have any questions on this matter, please contact Tim Gaudet at (504) 739-6666 or Roy Prados at (504) 739-6632.

Very truly yours,

E.C. Ewing
Director
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ECE/RWP/tjs
Enclosure:

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