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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
Supplemental Information RE: Response to Generic Letter 96-06 for the Waterford Steam Electric Station, Unit 3 (TAC NO. M96883)

Gentlemen:

Based on discussions with the NRC Staff, Entergy is submitting supplemental information to clarify the response to Item 4 in the attachment to Letter W3F1-98-0184 dated October 30, 1998. Letter W3F1-98-0184 was submitted in response to a request for additional information issued by the NRC Staff related to Entergy's response to Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design Basis Accident Conditions."

A portion of the response to Item 4 discussed the restoration of an out of service containment fan cooler (CFC). The following statement was made as part of this response.

> The restoration of an out of service CFC sometime after the accident initiation was considered. In this case, a longer time is available for the stagnant CCW water temperature to increase to containment temperature.

This statement was not intended to imply normal operating practices relative to an out of service CFC. Instead it was intended to conservatively address the hypothetical worst case which could result in the highest component cooling water (CCW) temperature in an out of service CFC.

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During normal power operations, the CCW supply to an out of service CFC will typically be maintained in one of two configurations.

Configuration 1: The CCW supply and return valves to the out of service CFC would be in their closed position capable of opening on a safety injection actuation signal (SIAS). On an SIAS the CCW valves open and CCW flow would be established to the out of service CFC in 17 seconds, assuming a loss of offsite power (LOOP) condition. Therefore, the post-accident CCW temperature in the out of service CFC tubes would be bounded by the analysis performed for the CCW temperature in the operating CFC tubes.

Configuration 2: The CCW supply and return valves to the out of service CFC would be gagged closed such that they would be incapable of opening on an SIAS or control switch manipulation. (The CCW supply and return valves to the CFCs are containment isolation valves and when declared inoperable are required to be secured in the closed position in accordance with technical specifications.) Emergency operating procedures do not call for the restoration of an out of service CFC. Typically Operations would not attempt to restore an out of service CFC post accident without first consulting with the technical support center (TSC) staff following the activation of the TSC. As discussed in W3F1-98-0184, restoration of flow to an out of service CFC post accident is not expected to result in a waterhammer or two-phase flow concern.

The second item discussed with the NRC staff related to the fact that the containment temperature following a main steam line break (MSLB) would exceed the CCW saturation temperature in the CFC coils for a short time prior to establishing flow through the tubes. Letter W3F1-98-0184 stated that CCW was not expected to reach saturation conditions during a MSLB because the short time period limits the amount of heat that can be transferred. An informal and conservative calculation was performed to show that the water in the CFC tubes would not reach saturation. The informal heat transfer calculation was performed with the following conservative assumptions.

- an initial CCW temperature of 126° F (CCW temperature is normally well below 126° F),
- the outside tube wall temperature was assumed to equal the transient containment atmosphere temperature during the MSLB, and

- a conservatively high film boiling heat transfer coefficient on the inside (CCW side) of the tubes was used.

The informal calculation showed the CCW temperature inside the tubes would be less than 150° F at the time CCW flow is established 17 seconds after the initiation of the event. This is well below the CCW saturation temperature of 269° F.

If you have any questions concerning this supplemental information please contact D. Bryan Miller at (504) 739-6692.

There are no new commitments generated by this correspondence.

Pursuant to 28 U.S.C.A. Section 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed on the 15th of November 2000.

Very truly yours,

E.P. Perkins, Jr.
Director
Nuclear Safety Assurance

EPP/DBM/rtk

cc: E.W. Merschoff, NRC Region IV
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