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Vice President, Operations  
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W3F1-97-0179  
A4.05  
PR

July 7, 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  
Supplement to Technical Specification Change Request  
NPF-38-179

Gentlemen:

This letter submits a supplement to Technical Specification Change Request NPF-38-179. This supplement modifies the value previously submitted to prevent vortexing (with air ingestion) and the value for the short term requirements of the Component Cooling Water Makeup System. In addition, this supplement proposes to expand the applicability of Technical Specification 3.7.1.3 to include Mode 4 operational requirements and maintains the 91 percent minimum Condensate Storage Pool (CSP) level previously requested for Modes 1, 2, and 3.

Technical Specification Change Request NPF-38-179 was submitted under letter W3F1-96-0045 on July 17, 1996 and supplemented by letter W3F1-97-0111 on June 3, 1997. Technical Specification Change Request NPF-38-179 requests that the minimum CSP level be raised from 82 percent to 91 percent.

The calculated vortexing level used in Technical Specification Change Request NPF-38-179 was questioned by the Staff during teleconferences on June 10, 1997 and June 17, 1997. Following these discussions a "scaled model", of CSP dimensions critical to vortexing, was constructed and testing was performed to validate the analytical technique used to determine the vortexing level. The "scaled model" test results showed that vortexing began at a level higher than that used in

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the submittal and therefore invalidated the proposed vortexing critical height. The calculation used to determine the vortexing critical height did not account for minimum recirculation flow to the pool which perturbs the pool causing a vortex to form sooner than predicted. Condition Report 97-1596 was initiated to document the omission of the minimum recirculation flow in the calculation.

The decision was made to install vortex suppression devices in the CSP for the two Emergency Feedwater (EFW) suction and for the Component Cooling Water Makeup suction. The installation of cruciform vortex suppression devices in the CSP was completed on July 2, 1997. Testing of the cruciform vortex suppression device in the "scaled model" demonstrated good agreement with the  $H/D=Fr$  correlation as is shown in Figure 1 of Attachment A. This correlation with additional margin added (based on "scaled model" test results) predicts that no vortexing more severe than type 2 (no air ingestion) will occur at levels at or above 3.57 percent CSP level at flow conditions representative of those expected at the time when the CSP approaches this level following an accident. Attachment A contains the CSP vortexing calculation (EC-M97-025) which includes a report on the "scaled model" testing. Since the "scaled model" test results demonstrated good agreement with the methodology employed, post modification testing will credit the "scaled model" test results and therefore, no "full scale" testing to verify vortex suppression will be conducted on the cruciform vortex suppression devices installed in the CSP.

In the previous supplement, the short term requirement for Component Cooling Water (CCW) Makeup was stated to be less than 3.8 percent CSP level. This supplement conservatively sets the short term CCW Makeup requirement at 1.66 percent (3,500 gallons). The short term CCW Makeup requirement, as set forth in this supplement, is used in the justification of the proposed changes as described below.

This supplement also requests that Technical Specification 3.7.1.3 be applicable in Mode 4 and the Limiting Condition for Operation be footnoted to indicate that a minimum CSP level of 11 percent be required in Mode 4. Short term requirements for CCW Makeup have been included in the design basis of the CSP to provide makeup for CCW, Essential Chilled Water, and Emergency Diesel Generator Jacket Water systems following a tornado, LOCA, or seismic event. These systems are required to be operable in Mode 4. In Mode 4, EFW is not required to be operable and therefore the requirement to maintain 170,000 gallons (80.71 percent CSP level)

for EFW is not applicable. In Mode 4, only 11 percent will be required to be available in the CSP to assure an adequate short term source for the CCW Makeup system. This level is based on having at least 3,500 gallons available (1.66 percent as stated above) while accounting for the required level to suppress vortexing (3.57 percent with vortex suppression device installed) and instrumentation measurement uncertainties (4.96 percent). If the CSP becomes inoperable while in Mode 4, an action has been proposed to place the unit in Cold Shutdown within 24 hours. This Action is modeled after the Cold Shutdown action statement contained in Technical Specification 3.0.3.

Proposed Technical Specification 3/4.7.1.3 and the associated Bases are provided in Attachment B. Please replace the previously submitted proposed Technical Specification 3/4.7.1.3 and Bases pages with those in Attachment B. Please note that pending Technical Specification Change Request NPF-38-190, submitted via letter W3F1-97-0051 on April 11, 1997, makes additional changes to Technical Specification 3/4.7.1.3.

The 91 percent minimum CSP level requested for Modes 1, 2, and 3 in the previous submittals remains valid. This level is based on having at least 170,000 gallons available (80.71 percent) while accounting for the required level to suppress vortexing (3.57 percent with vortex suppression device installed), instrumentation measurement uncertainties (4.96 percent), and 3,500 gallons for short term requirements for the CCW makeup system (1.66 percent). Attachment C provides a visual representation of the differences between the original submittal, the June 3, 1997 supplement, and this latest supplement.

This proposed change has been evaluated in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and it has been determined that this request involves no significant hazards consideration. The no significant hazards analysis is provided in Attachment D.

The circumstances surrounding this change do not meet the NRC's criteria for exigent or emergency review. However, due to the significant impact on plant operations, we respectfully request an expeditious review. Entergy Operations requests the effective date for this change be within 60 days of approval.

Supplement to Technical Specification Change Request NPF-38-179

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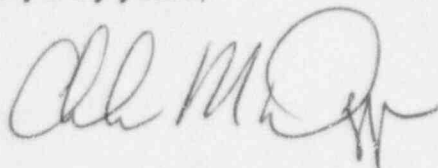
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Appropriate controls have been instituted to insure the CSP remains Operable in Modes 1, 2, and 3 with at least 91 percent indicated level and in Mode 4 with at least 11 percent indicated level while this Technical Specification Change Request is being reviewed.

Should you have any questions or comments concerning this request, please contact Mr. Early Ewing at (504)739-6242.

Very truly yours,



C.M. Dugger  
Vice President, Operations  
Waterford 3

CMD/DBM/ssf

Attachment: Affidavit  
Attachment A  
Attachment B  
Attachment C  
Attachment D

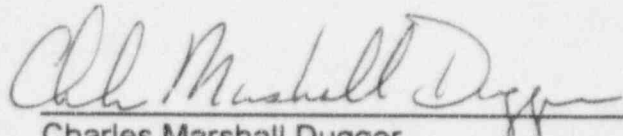
cc: E.W. Merschoff, NRC Region IV  
C.P. Patel, NRC-NRR  
J. Smith  
N.S. Reynolds  
NRC Resident Inspectors Office  
Administrator Radiation Protection Division  
(State of Louisiana)  
American Nuclear Insurers

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the matter of )  
 )  
Entergy Operations, Incorporated ) Docket No. 50-382  
Waterford 3 Steam Electric Station )


AFFIDAVIT

Charles Marshall Dugger, being duly sworn, hereby deposes and says that he is Vice President Operations - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached supplement to Technical Specification Change Request NPF-38-179; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

  
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Charles Marshall Dugger  
Vice President Operations - Waterford 3

STATE OF LOUISIANA )  
 ) ss  
PARISH OF ST. CHARLES )

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 21 day of July, 1997.

  
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Notary Public

My Commission expires at death.

NPF-38-179

ATTACHMENT A

Calculator, EC-M97-025