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Vice President Nuclear Operations

April 25, 1983

W3P83-1008
3-A1.01.04
3-B1

Director of Nuclear Reactor Regulation
Attention: Mr. G. W. Knighton, Chief
Licensing Branch Number 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Waterford SES Unit 3
Docket No. 50-382
NUREG 0737, Item II.E.4.2
Containment Pressure Setpoint

Reference: W3P83-430, dated February 7, 1983

Dear Sir:

In response to the Waterford S.R. and NUREG 0737, Item II.E.4.2 LP&L provided, in the referenced letter, the containment pressure setpoint of 18.0 psia. During a subsequent conversation your Mr. J. Huang of the Containment Systems Branch requested additional information concerning the setpoint calculation in order to complete his review. Following please find the requested information.

A. Safety Analysis Setpoint - 19.7 psia

This setpoint is based on the value required for the initiation of protective system actions resulting in acceptable consequences for design basis events. The Main Steam Line Break (MSLB) condition is the most mitigating event in this case.

- B. In order to insure that the required protective actions are initiated before the containment pressure exceeds the safety analysis setpoint of 19.7 psia, the trip setpoint must take into consideration the uncertainties associated with the equipment. The uncertainties considered in calculating the high containment pressure setpoint are:

a. Transmitter accuracy	± 0.075 psi
b. I/E converter accuracy	± 0.01 psi
c. Calibration uncertainty	± 0.019 psi
d. Ambient temp. effect	± 0.27 psi
e. Transmitter drift	± 0.85 psi
f. Radiation effect	± 1.00 psi
g. Worst case normal	± 0.93 psi
h. Seismic effect	± 0.50 psi
i. MSLB effect	± 0.2 psi

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The "root mean square" method is used to combine random error terms into a total error term. Since the MSLB effect error is non-random, it will be added to the resultant value of the "root mean square" calculation.

$$\begin{aligned} \text{Total channel error} &= \sqrt{0.075^2 + 0.01^2 + 0.019^2 + 0.85^2 + 1.0^2 + 0.50^2} + 0.2 \\ &= \sqrt{1.978586 \text{ psi}^2} + 0.2 \text{ psi} \\ &= \pm 1.406622 \text{ psi} + 0.2 \text{ psi} \end{aligned}$$

Total channel error: + 1.606622 psi
 - 1.206622 psi

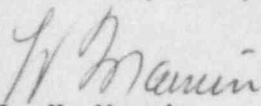
Because containment pressure high is an increasing trip, the positive channel error will be used in determining the final setpoint.

Safety Analysis Setpoint	19.700 psia
Total Channel Error	-1.607 psi
Trip Setpoint	18.093 psia \approx 18.0 psia

The above information, coupled with the inclusion of the containment pressure setpoint in Amendment 31 of the Waterford FSAR, should now be sufficient to close out this open item.

Should you have any questions or comments in this matter please contact me or Mike Meisner at (504) 363-8938.

Yours very truly,


L. V. Maurin

LVM/MJM/ssd

cc: W. M. Stevenson, E. L. Blake, J. Wilson, J. Huang