



MIDDLE SOUTH
UTILITIES SYSTEM

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POWER & LIGHT

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July 19, 1985

W3P85-2177
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A4.05

Director of Nuclear Reactor Regulation
Attention: Mr. G.W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission

SUBJECT: Waterford SES 3
Docket No. 50-382
Combustion Engineering Large Break LOCA Evaluation Model

REFERENCE: LP&L Letter W3P85-2501, July 11, 1985

Dear Sir:

In the referenced letter, LP&L informed the NRC of a potential nonconservatism in one element of the CE Large Break LOCA Evaluation Model. The potential non-conservatism concerned the power distribution used in the analysis. LP&L requested CE to finalize the ECCS reevaluation for Waterford 3. This letter provides the results of the reevaluation.

CE has reevaluated the large break LOCA transient using the ECCS models of the analysis of record for Waterford 3, except for the following changes in assumptions and input plant conditions:

1. The axial shape has been changed from a 1.68 top peak to a 1.52 top peak, and the radial peak has been increased to maintain the hot rod peak power at the current 13.4 LOCA KW/FT limit. CE determined that because the Waterford 3 reflood rates are generally lower than the CESSAR reflood rates the sensitivity to changes in axial power distribution is higher for Waterford 3. CE has determined that the 1.52 axial shape and associated radial peak conservatively bound the most adverse power distribution (with respect to the large break LOCA analysis) which may occur during the first cycle of Waterford 3 operation.
2. The influence of containment purge was not included. The Waterford 3 Technical Specifications, LCO 3.6.1.7, limit containment purge to not more than 90 hours per year. The basis for eliminating containment purge from the analysis was provided in the referenced letter.
3. The safety injection tank discharge line K factors were reduced from an average of 32 to 29.5. This change reflects actual measured K factors for

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the three (3) most limiting SITs which would discharge into the RCS during this transient.

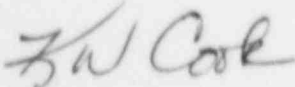
4. The initial containment temperature was raised from 80°F to 100°F. This temperature is the minimum containment temperature expected during full power operation.

The reanalysis of the limiting Large Break LOCA transient, with the changes identified above, results in a Peak Clad Temperature (PCT) of 2170°F. This PCT is below the 2200°F acceptance criteria limit for 10CFR50.46.

The results of these evaluations are submitted pursuant to the reanalysis requirement of 10CFR50, Appendix K. The analysis will be validated by LP&L and incorporated in the FSAR in accordance with 10CFR50.71(e).

Please contact me or Robert J. Murillo if you have any questions.

Yours very truly,



K.W. Cook
Nuclear Support & Licensing Manager

KWC/RJM/pcl

cc: B.W. Churchill, W.M. Stevenson, R.D. Martin, D.M. Crutchfield,
J. Wilson, T.A. Flippo