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April 3, 1986

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A4.05
QA

Mr. G.W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing-B
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

SUBJECT: Waterford SES Unit 3
Docket No. 50-382
Response to NRC Request for Additional Information
COLSS Out-of-Service

REFERENCE: (1) NRC letter dated March 29, 1986
(2) W3P85-3174 dated December 2, 1985

Dear Mr. Knighton:

Your Reference (1) letter requested additional information concerning a Technical Specification change request, submitted via Reference (2), dealing with monitoring plant operation when COLSS is out-of-service.

Enclosed please find LP&L's response to your questions. Should you require further information please contact Mike Meisner at (504) 595-2832.

Yours very truly,

K.W. Cook
Nuclear Support & Licensing Manager

KWC/MJM/ch

Enclosure

cc: B.W. Churchill, W.M. Stevenson, R.D. Martin, J. Wilson, J.G. Luehman,
L. Kopp (NRC-NRR)

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1. Question

Provide the amount of margin credited during CPC monitoring for each of the following:

- a) reduced modeling uncertainty over a narrower LCO ASI Band
- b) credit for transient offset terms
- c) credit for additive power measurement uncertainty
- d) credit for conservatism of neutron flux power relative to thermal power
- e) credit for dynamic pressure uncertainty in CPC
- f) credit for the Update penalty factor in CPC

Response

In determining the amount of margin credited during CPC monitoring for items a-f, certain of these items are combined in the calculations and cannot be accurately subdivided. Margin is a function of peak linear heat rate (LHR) and departure from nucleate boiling (DNB). Waterford 3 operation at the beginning of core life is LHR limited and DNB limited at the end of core life. The following table provides the margin credited for CPC monitoring in terms of % power:

<u>Item</u>	<u>LHR Limited Margin</u>	<u>DNB Limited Margin</u>
a	-	2.0
b	{ 10	{ 6.5
c		
d		
e	-	.5
f	-	3.0

It should be noted that the values cited above are for nominal conditions at the most limiting point in core life during Cycle 1. Actual values are strongly dependent on current operating conditions.

2. Question

Explain how the COLSS out-of-service DNBR limit line is derived (Fig. 3.2-2 and Fig. 3.2-3).

Response

The COLSS out-of-service limit lines of Figures 3.2-2 and 3.2-3 are derived by converting the required margins for the limiting transient or transients into DNBR units and adding the result to the DNBR limit. If CPC DNBR values are above the DNBR limit by more than the required margin expressed in DNBR units, it can be concluded that the consequences of any transient are no worse than those shown in the safety analysis. This methodology has been consistent since the inception of the CPCs on CE plants and has previously been reviewed and approved by the NRC.

3. Question

Why is there no difference between Fig. 3.2-2 (for COLSS out-of-service and CEACs operable) and Fig. 3.2-3 (for COLSS out-of-service and CEACs inoperable)?

Response

For the current cycle of operation Figure 3.2-2 (COLSS out-of-service and CEACs operable) and Figure 3.2-3 (COLSS out-of-service and CEACs inoperable) are identical. As previously discussed with the NRC, LP&L plans to implement CPC changes through the CPC Improvement Program for Cycle 2. These changes will result in a divergence of the two figures. Anticipating the future changes (which will likely be submitted as part of the future reload packages) LP&L chose to initiate the correct format for Figures 3.2-2 and 3.2-3 at this time for human factors considerations (i.e. to establish operator familiarity with two figures).

4. Question

The BASES for LHR states that a penalty factor of 57% is applied in CPC when COLSS is out-of-service and both CEACs are inoperable. How is this penalty determined and how is it applied in the CPC? Is the penalty cycle dependent?

Response

This question appears to imply that a separate penalty factor of 57% is applied in the CPCs whenever COLSS is out-of-service with both CEACs inoperable. This is not the case as there is no input by which the CPCs can determine the operability status of COLSS. The 57% penalty, which is cycle dependent, exists in the CPC data base. This penalty is applied to linear heat rate calculations when the CEAC inoperable flag is set, regardless of the state of COLSS. The derivation and application of this penalty factor has been previously reviewed and approved by the NRC.

To avoid confusion, the proposed Bases have been changed (see attached) to more clearly reflect their applicability to the Technical Specification change.

5. Question

Should Surveillance Requirement 4.2.1.2 refer to Figure 3.2-1a rather than 3.2-1?

Response

Surveillance Requirement 4.2.1.2 should refer to Figure 3.2-1a rather than 3.2-1 for the case of COLSS out-of-service. This was a typographical error in the submittal.

PROPOSED CHANGE NPF-38-12

1. Question

Please comment on whether present or future cycles may contain MTC values which are not necessarily most positive at BOL. If so, the surveillance requirement should be worded so as to perform a confirmatory measurement near the cycle time of maximum positive MTC.

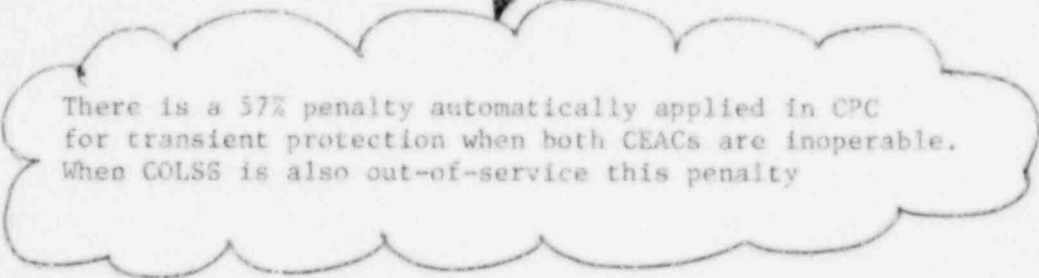
Response

Combustion Engineering is unaware of any case where MTC increased with core burnup for a reload core; nor are there any plans to design such a reload core in the future. Therefore, there is no need to provide additional changes to Technical Specification 3.1.1.3 beyond those proposed in NPF-38-12.

BASES

The additional uncertainty terms included in the CPC's for transient protection are credited in Figure 3.2-1a since this curve is intended to monitor the LCO only during steady state operation.

~~In addition, when COLSS is out of service and both CEAC's are inoperable, the 57% penalty applied automatically in CPC can be credited in the CPC linear heat rate calculation since it is required only for transient protection. In this case, Figure 3.2-1 is automatically maintained by the CPC trip limit.~~



There is a 57% penalty automatically applied in CPC for transient protection when both CEACs are inoperable. When COLSS is also out-of-service this penalty