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June 25, 1990

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Corrections to Commitments Involving the Hydrogen Analyzer System
(HAS)

- REFERENCES:
- (a) Letter from Mr. R. A. Clark (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated April 21, 1983, "NUREG-0737 Items II.F.1.4, 5, and 6"
 - (b) Letter from Mr. A. E. Lundvall, Jr. (BG&E) to Mr. R. A. Clark (NRC), dated March 14, 1983, same subject
 - (c) Letter from Comsip, Inc. to Mr. S. Stultz (BG&E), dated February 16, 1983, "System Accuracy"
 - (d) Letter from Mr. R. A. Clark (NRC) to Mr. A. E. Lundvall, Jr. (BG&E), dated January 11, 1983, same subject
 - (e) Letter from Mr. J. A. Tiernan (BG&E) to Mr. A. C. Thadani (NRC), dated April 1, 1986, "NUREG-0737, Item II.B.3, Post Accident Sampling"

Gentlemen:

During a design review of Hydrogen Analyzing System (HAS), the accuracy of the HAS was recalculated to be $\pm 9.40\%$ of span ($\pm 0.94\%$ hydrogen concentration) for the recorder loop and $\pm 10.26\%$ of span ($\pm 1.0\%$ hydrogen concentration-nominal) for the indicator loop.

A review of correspondence with the Nuclear Regulatory Commission (NRC) identified that References (a) and (b) state the indicator loop has a system accuracy of 3.2% of full scale and the recorder loop has an accuracy of 2.5% of full scale under normal operating conditions. These accuracies were based on vendor supplied information Reference (c) and Enclosure 2, "Uncertainty Parameters" of Reference (d).

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The recalculated accuracies include the following:

- a. Revised vendor data which includes instrument drift.
- b. New calibration setting tolerances.

and,

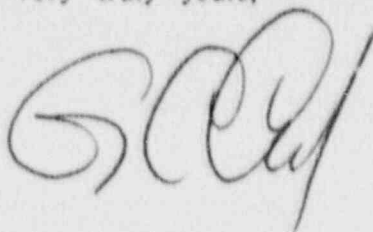
- c. More conservative assumptions including use of linear addition for various uncertainties vice square root sum of the squares (SRSS) for all uncertainties.

A 10 CFR 50.59 safety evaluation was performed. It notes that even under the worst case condition (i.e., the HAS indicating 1% low), the hydrogen recombiners would be started prior to the hydrogen concentration inside containment reaching 3.0% hydrogen. Updated Final Safety Analysis Report (UFSAR) Section 14.21.3.2 states that the hydrogen recombiners will be started prior to 3.0% hydrogen concentration in containment. EOP-5, "Loss of Coolant Accident," Revision 1, Step III.P.2 instructs the operator to start the hydrogen recombiners if hydrogen concentration in containment increases to 1.0% as indicated on the main recorders in the control room. If the recorder indicated 1.0% low, the operators would start the recombiners when the actual hydrogen concentration in containment was 2.0%, which is still 1.0% lower than the UFSAR limit of 3.0%. The safety evaluation concludes that the new accuracies do not constitute an unreviewed safety question.

During the correspondence review, an incorrect sentence was noted in Reference (e), Attachment 1, Item 8. The sentence, "The containment atmosphere samples are analyzed for hydrogen and noble gas activity using a spectrum analyzer" should have been written as, "The containment atmosphere samples are analyzed for hydrogen concentration and noble gas activity using laboratory equipment." Currently, the containment hydrogen sample is analyzed in the laboratory using thermal conductivity methodology. The HAS also utilizes thermal conductivity methodology. Currently, only the activity of the noble gas sample is analyzed by a gamma spectrum analyzer. The new wording accurately reflects our practice and intention for the containment hydrogen grab sample to be analyzed as a backup to the HAS. Additionally, the new wording allows the use of improved laboratory analysis methods for both noble gas activity and hydrogen concentration which may become available.

Should you have any further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



GCC/JMO/dlm

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
L. E. Nicholson, NRC
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