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June 12, 1986

Mr. Robert M. Bernero, Director
Division of BWR Licensing
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

*Decided as result of
meetings w/ staff
1987 February*

Subject: NRC Review of EPRI Hydrogen Water Chemistry Installation Guidelines

- Reference:
- 1) Letter, Robert M. Bernero to G. H. Neils, dated February 7, 1986
 - 2) "Guidelines for Permanent BWR Hydrogen Water Chemistry - Installations", EPRI NP-4500-SR-LD, March 1986
 - 3) Letter, F. Witt to L. G. Hulman, "Meeting with BWR Owners Group Regarding Guidelines for Permanent BWR Hydrogen Water Chemistry Installations, April 16, 1986", May 1, 1986
 - 4) Letter, L. G. Hulman to G. H. Neils, "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations - Request for Additional Information", dated May 8, 1986

Dear Mr. Bernero:

This letter is a response to your Reference 1 letter and requests that the formal NRC review of the EPRI Hydrogen Water Chemistry Installation (HWC) Guidelines (Reference 2) be expanded to include the liquid oxygen and compressed gaseous hydrogen storage options.

On April 16, 1986 the Hydrogen Water Chemistry Installation Guidelines Subcommittee of the BWR Owners' Group for IGSCC Research met with your staff to discuss the technical and licensing issues associated with a review of Reference 2. As noted in Reference 3, the original staff approach was to officially review only the liquid hydrogen storage option and issue a Safety Evaluation Report (SER). The other hydrogen and oxygen supply options would be informally reviewed with comments provided to improve the guidelines.

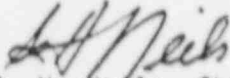
At the April 16 meeting, the Subcommittee requested that the staff's formal review and SER include all hydrogen and oxygen storage options (i.e., liquid hydrogen, liquid oxygen and gaseous hydrogen). The electrolytic option generates hydrogen and oxygen as needed and is not considered a storage option. Thus, a formal review of the electrolytic option is not requested.

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On May 22 the Subcommittee again met with the NRC staff to provide preliminary responses to the NRC Request for Additional Information (Reference 4). Formal responses to these questions will be submitted in the near future in the form of revisions or additions to Reference 2. To help expedite the review, the subcommittee would be pleased to meet with the staff to address any additional questions that may arise as a consequence of the expanded scope.

Regards,



G. H. Neils, Chairman
Regulatory Advisory Committee
BWR Owners Group for IGSCC Research

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cc: L. G. Hulman
F. J. Witt



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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FEB 07 1986

Mr. G. H. Neils
Chairman, Regulatory Advisory Committee
BWR Owner's Group II for Intergranular
Stress Corrosion Cracking Research
414 Nicollet Mall
Minneapolis, Minnesota 55401

Dear Mr. Neils:

We have received the draft of "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations", you sent to Mr. Harold Denton on October 12, 1985 for staff review. The staff has supplied informal comments on this Draft which were given to the Owner's Group on October 9, 1985. On February 5, 1986, we received the Final Guide and intend to provide comments on its content. However, the staff will not conduct a formal review of the Guide since its intended applications are to support plant specific modifications to be performed assuming there are no unreviewed safety questions under the provisions of 10 CFR 50.59. Any specific modifications performed at a facility under the provisions of 10 CFR 50.59, including Hydrogen Water Chemistry modifications would be subject to the regular inspection process and 10 CFR 50.59 review.

The following comments are relevant to potential plant specific Hydrogen Chemistry Modifications. Many aspects of potential Hydrogen Water Chemistry Modifications appear to be of the type of modifications that will be able to be carried out without license amendment under the criteria of 10 CFR 50.59. Suitable comprehensive evaluation of whether or not the modifications constitutes an unreviewed safety question for the specific facility should be included as a part of the Safety Evaluation supporting the modification. Some aspects of potential hydrogen water chemistry modifications, in particular the permanent installation storage and use of relatively large quantities of liquid hydrogen on site at a specific facility, appear to raise the concern of potentially new and different accidents from those previously considered and evaluated as a part of the facility licensing process. The determination of whether or not the hazards associated with the potential explosion and fire hazards from the storage and use of relatively large quantities of liquid hydrogen and/or oxygen at a specific facility require careful consideration by a licensee when reaching a determination as to whether a proposed modification involves any of the three criteria for "an unreviewed safety question" defined in 10 CFR 50.59(a)(2).

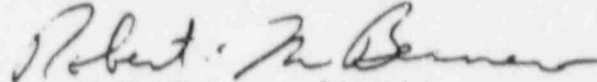
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Mr. G. H. Neils

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Mr. Robert A. Hermann of my staff will remain as the staff contact for this work and will be available to work with the Owner's Group on this subject.



Robert M. Bernero, Director
Division of BWR Licensing