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

SEP 9 1980

Mr. James H. Taylor, Manager
Licensing
Babcock & Wilcox
P. O. Box 1260
Lynchburg, Virginia 24505

Dear Mr. Taylor:

The lessons learned short-term requirement 2.1.3.b "INSTRUMENTATION FOR DETECTION OF INADEQUATE CORE COOLING" requirement which has been incorporated in the Action Plan as Item II.F.2 is the subject of this letter.

In the past six to nine months the NRC staff has dealt individually and collectively, with B&W, members of the B&W owners group, and with individual licensees and applicants for CPs and OLs regarding this requirement.

The objective of this letter is to clearly reaffirm the staff's position regarding this matter so that you can properly counsel your customers. It is our intent to formally make this same position clear to the B&W reactor owners by direct correspondence from our Division of Licensing, and such a letter has been prepared for transmittal to licensees.

It is our position that instrumentation and guidelines for existing reactors do not satisfy the long-term requirement for unambiguous easy-to-interpret indication of inadequate core cooling as envisioned in the TMI Action Plan. Particularly, the B&W position that a reactor vessel water level measurement would not contribute to the operator's accident mitigation or termination decision-making process is unacceptable. We believe that explicit and confirmatory knowledge of vessel water level would provide additional diagnostic information to the operator, particularly with respect to advanced warning of the approach to inadequate core cooling and in monitoring the recovery progress from unidentified situations.

We further believe that an appropriate approach to the problem would be to consider, in the formulation of analyses and guidelines, reactor level information obtained from such instruments with a view to deriving the maximum amount of support to aid an operator to coping with core uncover.

Further, the staff believes that the development, installation and use of such instrumentation is feasible. In this latter regard, we recognize a need to participate in this effort. The Office of Research is sponsoring tests and analyses of a variety of reactor vessel water level measuring systems and strategies such as those based on differential pressure measurement, heated junction thermocouples, ultrasonic sensors, neutron

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detectors and electrical conductivity probes.

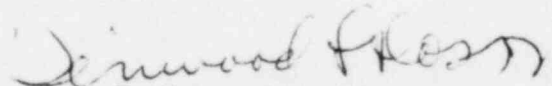
In October, in Idaho Falls, we shall sponsor a Technology Transfer Meeting dealing with this subject. At that time we will discuss the use of NRC facilities (LOFT, Semiscale, etc.) for proof-testing and experimental verification of any instrumentation you may wish to supply for this purpose. You will be invited to participate.

In September we shall publish a detailed clarification letter regarding the approved applicants Action Plan (NUREG-0660) requirements for operating reactors and operating license. This publication will be augmented by NRC sponsored regional meetings so that clarifying discussions may improve the intended communications. This document and the discussion shall include the most recent NRC dates for implementation of the Action Plan requirements. As you know the date for implementation of the subject requirement to operating reactors was scheduled for 1/1/81. The clarification letter will direct licensees to submit a detailed report of the proposed instrumentation system for monitoring inadequate core cooling by January 1, 1981 with installation and operation of the system scheduled for January 1, 1982. At this time we believe that you can and should do considerably more toward the development of instrumentation to detect inadequate core cooling to assist your customers in compliance with the pending implementation dates and in demonstration of good faith effort.

I believe it would be useful to confer with the appropriate management representatives of B&W to explore the decision process that has persuaded B&W not to pursue an aggressive development program of a reactor vessel level system. If you agree, please arrange for a suitable time and place. If it is the B&W position that B&W will have no technical position on whether a vessel level is necessary, then it would be helpful to know that. We would then deal directly and exclusively with each utility.

If any utility chooses to take an independent position (and it is free to do so, in the same manner that Alabama Power has, for example in the case of Farley 2) it may respond directly to the NRC through normal lines of communication.

Sincerely,



Denwood F. Ross, Jr., Director
Division of Systems Integration
Office of Nuclear Reactor Regulation