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September 7, 1984

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Director of Nuclear Reactor Regulation
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U. S. Nuclear Regulatory Commission
Washington, DC 20555

Director of Nuclear Reactor Regulation
ATTN: Mr. James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Units 1 & 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
NUREG 0737, Item II.B.3
Post Accident Sampling System

Gentlemen:

As discussed in our letters dated October 31, 1983 (ØCAN1Ø8314), and June 27, 1984 (ØCANØ68416), we are continuing to experience problems related to the accuracy of the Orion Boron/pH and Chloride analyzers used in the Post Accident Sampling System (PASS). These analyzers were originally purchased in late 1980. At the time Orion was the only vendor able to supply boron analysis equipment designed to perform in the presence of radiation source terms of the magnitude specified by NUREG 0737. Since the original installation of the analyzers Orion has spent a considerable amount of time and effort trying to achieve the required accuracy levels. This effort has included an almost complete redesign of the analyzers. However, in spite of their best efforts the analyzers continue to experience problems with accuracy as well as reliability.

AP&L has evaluated this situation and has determined that these analyzers cannot achieve the required degree of accuracy for determination of boron concentrations in a post accident situation. This conclusion was reached

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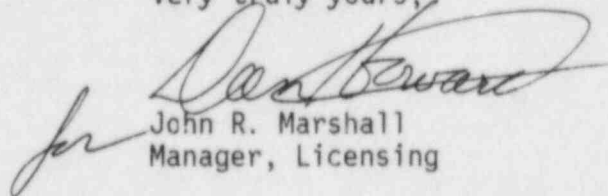
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after reviewing the results of site acceptance testing performed after Orion had completed their best effort to correct the accuracy problem. Consequently, an alternate method of determining boron concentrations has been developed by AP&L. This alternate method involves obtaining a grab sample, diluting a portion of this sample and then analyzing it using manual titration. This sampling operation has been designed to allow sampling and analysis for boron without exceeding GDC-19 radiation exposure limits. Initial training has been completed for personnel who would be expected to conduct this procedure for post accident sampling.

Although the Orion equipment analyzes pH, chloride, and boron, a manual method of analysis has been developed for boron concentrations only. This is due to the fact that NUREG 0737 Item II.B.3 allows off-site analysis for chloride and pH within a four day period following an accident. AP&L has an agreement with Oak Ridge National Laboratory for the off-site analysis of grab samples.

AP&L is continuing to evaluate various possibilities for improved methods of determining post accident boron concentration. Some of the methods under evaluation include manual sampling, automatic titration, and neutron detection. AP&L wishes to use the most reliable and accurate method of boron analysis available that would interface with our existing PASS system. Therefore, the evaluation is being performed in two phases. The first phase has involved review of information available on the various analysis methods and the second phase consists of visiting other facilities which are utilizing the equipment under consideration. Based upon the results of these evaluations, we will make a determination as to which method of analysis and equipment is best suited for use at ANO. As the described manual sampling method meets the requirements of NUREG 0737, AP&L has not established a schedule for completion of this additional evaluation. We will continue to keep you informed as to the status of our efforts relative to this issue.

Very truly yours,


John R. Marshall
Manager, Licensing

JRM/MCS/ac