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J. O'Brien

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1607 Barkley Av.
Columbia, MO 65203

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RULES & DIR. BRANCH
US NRC

December 16, 1999

Mr. David L. Meyer
Chief, Rules and Directives Branch
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sir:

The purpose of this letter is to provide comments relative to the proposed "Revised Criteria for Post Accident Sampling Systems", published in the Federal Register, Vol. 64, No. 226, November, 24, 1999 (pages 66213- 66214). The below comments are provided as a private citizen, and do not necessarily reflect the opinions of my employer. I have a Masters of Science in Nuclear Engineering and a Bachelor of Science in Chemistry, and have worked in the areas of environmental monitoring, radionuclide analysis, radiation protection, and emergency planning for over 22 years.

I support the proposed revision to the criteria for Post Accident Sampling Systems (PASS) as stated in the referenced Federal Register notice.

The specific information provided by the PASS, including the radionuclide data, is of no value in assessing the impact on the health and safety of the public due to advances in source term research and the intrinsic shortcomings of the PASS itself. Real time instrumentation and field monitoring information is much more desirable:

- Other indicators exist and are more widely used in core damage and offsite dose assessments; the information provided by the PASS is of little value in assessing the consequences of an accident, either by the licensee or by offsite emergency response organizations.
- The PASS does not sample the actual release. Therefore, the samples obtained by the PASS are not representative of the release, and are of no value in assessing the impact of the release.
- Grab samples, by their nature, are *a posteriori* (after the fact). Initial Protective Action Recommendations (PARs) must be *a priori* (before the fact), and therefore must be based on plant conditions. The use of PASS samples to determine initial PARs is akin to boarding up the windows after the hurricane has passed by; it's too late to take protective actions. The assessment of PARs in the intermediate and post- plume phases are based on actual field measurements. Again, the PASS samples are not representative of the release, and provide no useful function in assessing the impact on the public.

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- Installed instrumentation, providing real time information from diverse parameters, is much better than PASS samples for performing offsite dose assessment and core damage assessment.
- The PASS is subject to sampling inaccuracies; sample line deposition, errors in the sample dilution, the presence of rapidly decaying nuclides in the sample, errors introduced by cross contamination and other inaccuracies. The delay in the sample analysis also results in substantial decay of radionuclides with short half-lives. Even when adjusted for decay, the analytical results will be greatly different than the composition of the process stream at the time the sample was taken.
- Operation of the PASS under accident conditions is inconsistent with the requirements of 10 CFR 20.1101. Technicians obtaining the PASS samples and performing the analysis could, within NRC guidelines, receive a radiation dose equal to the annual occupational dose limit for *each sample*. This is contrary to the principles of ALARA and is inconsistent with the requirements of 10 CFR 20.1101 due to the inherent shortcomings of the data derived from the PASS, and the desirability of other indicators.
- There are several different PASS designs in use in US nuclear power plants, but in general, they are difficult and costly to maintain. The benefits provided by the PASS do not justify the cost of ownership.

In summary, the PASS provides no useful information in the assessment of offsite dose and the PARs. Other means provide much more accurate and useful information for assessing the offsite impact of an accident. The continuation of the current PASS requirements is not justifiable based on the protection of the health and safety of the public.

Sincerely,



Christopher C. Graham