



DEPARTMENT OF ENERGY
 CHICAGO OPERATIONS OFFICE
 NEW BRUNSWICK LABORATORY, D-350
 9800 SOUTH CASS AVENUE
 ARGONNE, ILLINOIS 60439

DOCKETED
 USNRC

'82 AGD 26 AIO:34

OFFICE OF SECRETARY
 DOCKETING & SERVICE
 BRANCH

August 18, 1982

Secretary of the Commission
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

DOCKET NUMBER
 PROPOSED RULE *PR-Misc. Notice
 (Reg Guide)*

Attn: Docketing and Service Branch

Dear Sir/Madam:

The following comments are submitted regarding the proposed revision to Regulatory Guide 5.53 - Qualification, Calibration, and Error Estimation Methods for Nondestructive Assay (NDA).

1. C.1 - Method Selection - The accuracy of results is not an inherent criterion of a given NDA method; rather it is a function of the calibration standard(s) used for a measurement system and the degree to which standards and materials to be assayed are similar in physical and/or chemical properties. It is necessary, however, that selection of a method provide compatibility with plant material balance requirements.
2. C.2 - Instrument Specifications - It is not clear that "item-to-item" sources of error are addressed by instrumental specifications. "Item-to-item" is interpreted to mean the inherent variation of a given property in a population of items, resulting, for example, from variations in the fabrication process. If instrument specifications must address a required level of sensitivity to item-to-item variability, that distinction should be clarified.
3. C.3 - Operators - Line 7 should read "...background..." not "...background rounds...". What are the criteria or performance requirements to be met by a "qualified operator"? Is this question addressed elsewhere within Reg Guides?
4. C.4 - Stability Testing - p. 4, para. 3, line 2 - What is "extreme instability"? Depending upon magnitude of the instability the averaged response to a before-and-after-sample measurement of a working standard may introduce an unacceptably large and unknown systematic error. As is indicated, excessive instability should be remedied rather than tolerated. Whenever repairs are effected, the system must be recalibrated.

*DSO9
 add: Ed Hill
 5650 NL*

8208300272 20818
 PDR REGGD
 05.053 C B PDR

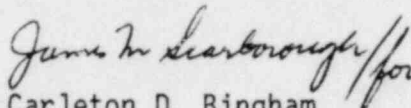
Acknowledged by card... *8/27/82 emp*

August 18, 1982

5. C.5 - Calibration - The nuclear material content of a calibration standard cannot, a priori, be characterized by calorimetry without additional knowledge of the nuclidic composition of the standard.
6. C.6 - Calibration Standards - p. 8, para. 3 - Suggest adding after "(Ref. 3)" (line 4) the following caveat: "Calibration standards prepared by mixing powders of different particle sizes and/or densities tend to stratify or segregate. The containers should be tumbled periodically to reblend the constituents."
7. C.7.2 - Analytical Estimation - What are acceptable criteria for "adequate representativeness"?

If questions arise from the above comments, NBL would be pleased to supply additional information if requested.

Sincerely,


Carleton D. Bingham
Director

cc: S. McDowell, OSS, HQ