



UNITED STATES DEPARTMENT OF COMMERCE  
National Bureau of Standards  
Washington, D.C. 20234

May 1, 1979

Mr. Robert E. Alexander  
Chief, Occupational Health Standards Branch  
Office of Standards Development  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Alexander:

This is in reply to your letter of April 4 addressed to Dr. J. E. Leiss, in which you asked him to express the NBS position regarding questions raised by a personnel dosimetry processor participating in the University of Michigan's pilot testing program.

As you know, a team of five NBS technical experts visited the University of Michigan's facilities in April 1978, prior to the start of the pilot-test irradiations. They performed an on-site inspection of all irradiation facilities involved in the test irradiations and examined all irradiation geometries, calibration procedures, and plans for record keeping. Except for certain improvements suggested in the NBS trip report--improvements which since then have been made by the University of Michigan--NBS found the preparations at the University to be adequate. An added feature ensuring traceability of all calibrations to NBS was provided through an NBS standardization of the beta-particle and neutron sources used by the University of Michigan prior to their installation at the University in an NBS-approved geometry; furthermore, NBS-owned and calibrated ion chambers are being used by the University of Michigan for all photon calibrations. In view of the on-site inspections of the University of Michigan's facilities and procedures and the traceability of all source standardization and instrument calibrations to NBS, the NBS staff is confident that the University of Michigan's team is capable of delivering irradiations to the participating processors' dosimeters with adequate accuracy and reproducibility.

It may further interest you that NBS presently is having the University of Michigan's team perform a measurement-assurance test in which they are to calibrate in their own facility a set of ion chambers whose calibration factors are known only to NBS. A wide range of photon energies will be covered in this test. The results will be made available to the NRC.

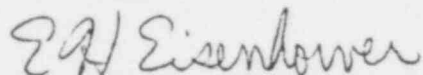
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. Finally, as discussed by M. Ehrlich in her telephone conversation with you on April 18, a member of the staff of Battelle-Northwest, the laboratory that the processor in question claims performed all calibration services for him, also has expressed his confidence in the performance of the test irradiations by the University of Michigan. However, in the source of discussion with the Battelle staff member, it was discovered that the assignment of the neutron-dose equivalent made by them differs in a matter of principle from that made by the University of Michigan and advocated by NBS. We plan to initiate further discussions with Battelle-Northwest staff on this point.

We hope that this information will be useful to you.

Sincerely,



Elmer H. Eisenhower, Chief  
Office of Radiation Measurement

cc: M. Ehrlich

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