



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

April 27, 1988

SAB-RAC-88-026

OFFICE OF  
THE ADMINISTRATOR

Honorable Lee M. Thomas  
Administrator  
U. S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460

Dear Mr. Thomas:

The purpose of this letter is to reiterate the Science Advisory Board Radiation Advisory Committee's position on the use of the effective dose equivalent concept of the International Commission on Radiological Protection in deriving risk estimates and establishing regulations related to exposures to humans from radionuclides in the environment. Although the Committee has recommended adoption of the effective dose equivalent methodology during its review of EPA reports, the Agency has not been consistent in its use of the effective dose equivalent concept or the weighting factors applied in quantifying dose. More importantly, the Radiation Advisory Committee is uncertain regarding the Agency's intentions for implementation of effective dose equivalent in the future.

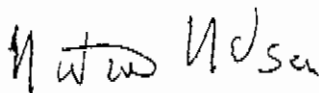
As a specific example, the Radiation Advisory Committee undertook a review of the Office of Drinking Water's Assessment of Radionuclides in Drinking Water during 1987. One recommendation was "the documents should include a clearer exposition of the basis for the risk estimates used, the concept of effective dose equivalent and the weighting factors employed." Although your letter of August 21, 1987 in response to our review indicated the Agency would improve this aspect of the report, it did not definitively outline how this would be carried out. A briefing by a staff member from the Office of Drinking Water also left the Committee wondering what the Agency intended to do about this critical issue.

The Committee believes that effective dose equivalent, rather than dose equivalent to specific organs, should be applied as the basis for regulations dealing with radiation exposure. The Radiation Advisory Committee strongly encourages the Agency to examine carefully its position on the effective dose equivalent concept, the numerical value of organ-specific weighting factors, and the application of effective dose

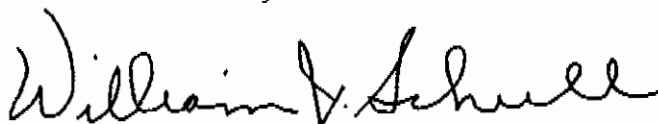
equivalent in establishing regulations, with particular emphasis on insuring consistency within the EPA, and between the Agency and other government, national, and international organizations. Weighting factors recommended by the International Commission on Radiological Protection should be applied. This recommendation is entirely consistent with your Memorandum for the President titled "Federal Radiation Protection Guidance for Occupational Exposure" of January 27, 1987.

The Radiation Advisory Committee requests a formal response to this letter and a summary of the Agency's findings and intentions regarding the use of effective dose equivalent in developing background information documents and in setting radiation standards.

Sincerely,



Norton Nelson, Chairman  
Executive Committee  
Science Advisory Board



William J. Schull, Chairman  
Radiation Advisory Committee  
Science Advisory Board

cc: Richard Guimond, Director, Office of Radiation Programs  
J. Craig Potter, Assistant Administrator for Air and Radiation  
Michael B. Cook, Director, Office of Drinking Water  
Rebecca Hammer, Acting Assistant Administrator for Water  
Donald G. Barnes, Director, Science Advisory Board