

RAC

Radiological Assessments Corporation

Route 2, Box 122

Neeses, South Carolina 29107

(803)536-4883

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Dr. Frank Congel P-712
Radiological Impact Section
Radiological Assessment Branch
Division of Site Safety and
Environmental Analysis
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Frank:

This letter is to support the correspondence you received from Dr. Yook Ng of the Lawrence Livermore Laboratory (LLL) and Owen Hoffman of Oak Ridge National Laboratory (ORNL) regarding funding in the area of environmental pathways analysis. As you are aware, Yook and Owen are members of an International Atomic Energy Agency (IAEA) Advisory Group concerned with this subject. In addition, the National Council on Radiation Protection and Measurements (NCRP) has established Scientific Committee 64 to deal with the same problem and perhaps even more important, to consider other major issues resulting from releases of radionuclides to the environment such as environmental dose commitment, the calculation of population dose, and recommendation of a de-minimus dose. As leader of a task group for Scientific Committee 64, I have had the opportunity to direct an effort to establish the state-of-the-art of environmental pathways analysis.

I am in full agreement with Yook and Owen that additional funding is badly needed to complete their work. In my opinion there are three areas that must be given further attention. First, I strongly recommend the continuation of the study started by Owen Hoffman at ORNL evaluating the imprecision of dose calculational techniques. This type of analysis is essential in order to define the uncertainty associated with environmental dose assessments. In addition, the research of Yook Ng at LLL to determine concentration factors for selected elements in meat and vegetables is equally important and must continue.

The second area needing emphasis is the simplification of dose assessment models. In our report to Scientific Committee 64 we will consider the possibilities of recommending less complex models that can be used as decision-making tools by individuals to give a rapid assessment of dose under routine and accident conditions. We are focusing on a few key radionuclides consistently found to be of importance in the environment around nuclear plants. Obviously our work for NCRP is on a voluntary basis only allowing a limited analysis of this problem and additional in-depth research will be required to complete the study.

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A direct result of this work would be to enable the NRC to consider optimization between current standards and dose calculational techniques. This is the third area needing further attention. Once we establish how accurately we can estimate dose, it is essential to recommend standards so that reasonable assurance is provided that they are not being exceeded.

I hope that this information will be helpful to you. As I mentioned, I strongly support the continuation of this work both at LLL and ORNL. These studies are already providing extremely important data and ideas for both IAEA and NCRP, however, they should be expanded to include both the simplification of models and optimization between calculational techniques and standards.

Sincerely,



John E. Till, Ph.D.

JET:r1s

cc: E. F. Branagan, Jr. (NRC)
F. O. Hoffman (ORNL)
Y. C. Ng (LLL)
W. L. Robison (LLL)
P. S. Rohwer (ORNL)
J. P. Witherspoon (ORNL)