



United States Department of the Interior

GEOLOGICAL SURVEY  
RESTON, VA. 22092

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PROPOSED RULE PR-Mischotic

OFFICE OF THE DIRECTOR

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6 JUN 1979

Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Attention: Docketing Service Branch

Dear Sir:

We have reviewed the draft regulatory guide on calculation models for estimating radiation doses to man from airborne radioactive materials resulting from uranium milling operations.

Effects of airborne radionuclides on surface water are not considered in the evaluation of concentrations in environmental media. This radiation could affect the calculation of concentrations in milk and meat (p. 14-15), where the radionuclide contribution from the animal's drinking water has not been taken into account.

The calculation of  $C_{aip}(t)$ , the total air concentration of radionuclide  $i$ , particle size  $p$ , at time  $t$ , in  $pCi/m^3$ , is dependent on the value  $C_{adip}$ , the direct air concentration of radionuclide  $i$ , particle size  $p$ , in  $pCi/m^3$  (p. 11, sec. 1.2). Is  $C_{adip}$  a measured value or is it determined through diffusion modeling? If modeling is used, there appear to be difficulties in differentiating  $C_{adip}$  from the resuspended value  $C_{rip}(t)$ . Also,  $C_{rip}$  should be dependent on pile size, geometry, and orientation, as well as meteorological parameters.

It is stated that liquid pathways need to be included if significant (p. 3, par. 3). This determination should be made more explicit by defining "significant" or giving a worst-case example.

It is acknowledged that general population averages of physiological and metabolic parameters are assumed for exposed individuals (p. 5, par. 1).

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- It would appear that the worst-case analysis has been overlooked in that the youngest, oldest, or least healthy population segments could represent the most susceptible to acute and chronic doses.

Thank you for the opportunity to comment.

Sincerely yours

  
J. R. Balsley  
Acting Director

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