(25)

DOCKET NUMBER
PROPOSED RULE PR 20
(45 FR 67018)

INDIANA UNIVERSITY
Department of Environmental Health and Safety
625 North Jordan Avenue
BLOOMINGTON, INDIANA 47401

TEL. NO. 812—337-6211

October 23, 1980

John R. Cook
Office of Nuclear Material and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Cook,

Re: Proposed Regulations
Standards for Protection Against Radiation
Federal Register Vol. 45, No. 197, page 67018
(October 8, 1980)

I have reviewed and endorse the proposed regulations regarding exemption of certain concentrations of ^{3}H and ^{14}C in liquid scintillation fluid and animal carcasses. It is also suggested that solvents in general, not just scintillation fluid, be included in paragraph 20.306. Some researchers currently combine fluid waste from several sources including scintillation fluids and solvent rinses. The problems of properly disposing of solvent wastes are the same as those for scintillation media.

Treating such low activity material as toxic chemical waste, rather than radioactive wastes, is justifiable by fairly simple comparisons of risk. According to data found in the NIOSH publication "1978 Registry of Toxic Effects of Chemical Substances," the fatal quantity for ingested toluene is 3.5 grams for a 70 kg individual. The cancer risk from the radioactive material in this same volume, 0.175 μCi (0.05 μCi/g x 3.5 g) using ICRP dosimetry data and BEIR III risk estimates, is in the range of 10^{-3}.

Overall benefits can be realized for waste management programs both in research establishments and at commercial burial sites. About half of our radioactive waste volume is for scintillation vials. The resources (steel drums and vermiculite) and transportation risks could be reduced considerably by utilizing incineration or other methods of treating solvent waste.

Early adoption of these rules is urged.

Very Truly Yours,

Henry C. Briggs

Henry C. Briggs
Radiation Safety Officer

Acknowledged by card 10/31/80

L-4, pp. 20

HCB/mgb

8011120 086