

SYNTEX RESEARCH  
DIVISION OF SYNTEX (USA) INC.  
3401 HILLVIEW AVENUE  
PALO ALTO, CALIFORNIA 94304  
INSTITUTE OF BIOLOGICAL SCIENCES

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DOCKET NUMBER PR 20  
PROPOSED RULE 45FR67018

November 14, 1980



Docketing and Service Branch  
Nuclear Regulatory Commission  
Washington, DC 20555

Dear Sir:

We, at Syntex Research, support the proposed amendments to the National Regulatory Commission (NRC) as presented in the Federal Register of October 8, 1980 (45 FR 67018).

As a biomedical and pharmaceutical research facility, the use of trace amounts of hydrogen-3 and carbon-14 is essential to our work. The largest portion of our radiological waste, i.e., 65%, is liquid scintillation fluid and animal carcasses representing \$32,000 of our disposal cost for 1980-81. All of our liquid scintillation fluid waste and approximately 75% of our animal carcass waste is below 0.05 microcuries per gram activity level with respect to hydrogen-3 and carbon-14. Approval of these proposed new regulations would reduce our cost of disposal of these wastes to \$2,000 for 1980-81, a saving of \$30,000 per year.

Other disposal methods have been studied to reduce our \$50,000 per year (and growing) disposal costs. We do not see the present method of packaging and transporting all waste to a dump site as a viable method in the future due to rocketing labor costs and the availability of dump sites. The non-radiological disposal of animal carcasses would not significantly increase the background level of naturally-occurring radiation and would significantly decrease our disposal costs.

The proposed amendment to the NRC regulation with respect to liquid scintillation fluids would allow for the focusing of attention on the chemical toxicity of these substances. As a practical matter, the chemical toxicity of these fluids has always been a bigger health problem than the potential for exposure to the added ionizing radiations. Incineration is the best method for the disposal of liquid scintillation fluids. Chemical toxicity would be completely eliminated by combustion of the fluid to carbon dioxide and water. Radioactive hydrogen and carbon containing compounds are degradable and their release into the atmosphere would not alter in any measurable or significant way the naturally-occurring background radiation level. The cost of incineration is capital intensive due to modification of or construction of a suitable incinerator system. These costs are increased by the cost of monitoring the emissions and disposal of any ash by conventional disposal methods. Amending

Acknowledged by card

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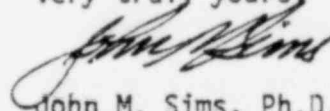
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the NRC regulations with respect to the disposal of liquid scintillation fluid would decrease the cost of incineration of these chemically toxic substances, thus increasing the overall utility of incineration to truly dispose of these substances.

Very truly yours,



John M. Sims, Ph.D.  
Staff Researcher  
Member, Radiation Safety Committee

JMS/ebv

cc - Dr. J. Moffatt  
Dr. E. Forchielli