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PROPOSED RULE PR 20
(59FR 9146)

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

DU PONT
MERCK

The Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555
Attention: Docketing and Service Branch

Regarding the Advanced notice of proposed rulemaking, RIN 3150-AE90, "Disposal of Radioactive Material by Release into Sanitary Sewer Systems" distributed on 2/5/94, the DuPont Merck Pharmaceutical Company (DMPC) offers the following comments on current regulations, and the proposed changes in regulations.

1. Radionuclide half-life is a significant factor effecting radioactive material reconcentration in sanitary sewer systems, although the current regulations only identify the compound solubility as a factor. The radionuclides involved in the instances of reconcentration all have relatively long (> 100 days) half-lives:

Am-241	432 yrs
Po-210	138 yrs
Cs-137	30 yrs
Cs-134	13 yrs
H-3	12 yrs
Co-60	5 yrs
Mn-54	0.86 yrs

Radionuclides used in radiopharmaceuticals have typical half-lives of 2 to 3 days, making it very unlikely that these would reconcentrate in sanitary sewer systems, since the rate of radioactive decay would exceed the reconcentration rate. Radionuclide half-life must be considered along with solubility when determining limits on the release of radioactive material to sanitary sewerage.

2. Regulations should re-establish concentration and total activity limits for dispersible radionuclides, having half-lives of less than 100 days, or define activity release levels that are below concern based on 10 CFR Part 20 Appendix C quantities.

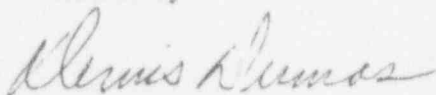
3. Instances of radionuclide reconcentration have resulted in estimated doses to individuals which are well below the current 10 CFR Part 20 annual limit to members of the general public of 100 mrem, and are approximately 100 times lower than the dose of 500 mrem via ingestion, which radionuclide concentration limits in 10 CFR Part 20 Appendix B are based on. A model which predicts actual dose to members of the general public should replace the current unrealistic model which assumes an individual is consuming effluent at the point of discharge.

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4. The need for additional restrictions on the release of radioactive material to sanitary sewerage does not appear to be warranted at this time since the impact the new 10 CFR Part 20 regulations will have on the instances of radionuclide reconcentration in sanitary sewerage have not been evaluated. Licensee effluent releases will be reduced by the implementation of the new 10 CFR Part 20 regulations, in which sewerage radionuclide concentrations limits were reduced by a factor of 10. The ALARA regulation in 10 CFR Part 20, and ALARA program requirements contained in NRC Regulatory Guide 8.37 "ALARA Levels for Effluents from Materials Facilities" should also result in the reduction of radionuclides released from facilities to sanitary sewerage.
5. Radionuclide reconcentration appears to be a very rare occurrence, 6 instances have been identified out of 15,000 (0.04%) sewer treatment plants, and 23,000 (0.02%) licensed users of radioactive materials. Imposing additional restrictions on release to sanitary sewerage do not appear warranted based on the few occurrences of radionuclide reconcentration.
6. Health risks associated with the current limits for radionuclide release to sanitary sewerage should be comparable to health risks of other hazardous materials present in sewer sludge such as heavy metals.
7. The proposed requirement that all NRC licensees provide 24 hour notice prior to the release of radioactive material into sewerage is unnecessary. Radioactive material released to sanitary sewerage typically represents incidental radioactivity resulting from manufacturing processes.

Sincerely,



Dennis Durnas
Manager, Safety and Environmental Engineering