



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JAN 15 1985

The Honorable David Axelrod, M.D.
Commissioner of Health
State of New York
Department of Health
Albany, NY 12237

Dear Commissioner Axelrod:

I am responding to your letter of December 11, 1984, to Chairman Palladino regarding the two recent incidents in New York where sewers, sewage treatment plants, and sewage sludge were contaminated by a radionuclide. We agree that these incidents strongly suggest a need to reexamine the bases for our regulations governing disposal of radionuclides via discharge into sanitary sewer systems.

Over the past several years, we have been developing a complete revision to our radiation protection regulations in 10 CFR Part 20, including modifications to the requirements for disposal into sewer systems. The proposed changes include concentration limits based upon the 0.5 rem per year dose limit to the general public rather than using the occupational concentration limits in Table I of Appendix B to 10 CFR Part 20, which are also the current sewer disposal limits and are based upon annual whole body dose limits of 5 rem per year. This change would reduce the allowable concentration limits by about a factor of 30 (a factor of 10 for the reduction in allowable dose limits and a factor of 3 for going from an 8-hour working day to a 24-hour exposure day). A second change which has been incorporated into the current draft of the revised 10 CFR Part 20 is to make more restrictive the allowable physiochemical form of radioactive materials for sewer disposal. The present requirement for a "dispersible" form would be replaced by a requirement that the materials be "soluble" in water. These changes were developed prior to the two recent incidents in New York State and, therefore, are not directly responsive to the presence of possible biophysical concentration processes in the sewage, at the sewage treatment plants, or sludge disposal processes. Nevertheless, the indicated changes, if adopted, would act to reduce both the possibility and magnitude of any recurrences of the Tonowanda and Grand Island incidents.

We have initiated a study of possible reconcentration mechanisms and exposure pathways to man for radionuclides released into sanitary sewers. This study was initiated in response to concerns expressed to us by Donald Nussbaumer, Assistant Director for State Agreements Programs in our Office of State Programs, and by Dr. Thomas Murley, Regional Administrator for NRC Region I. Their concerns in large part reflected the Tonowanda and Grand Island

8506180403 850417
PDR FOIA
WELDON85-210 PDR

A/9

- 2 -

contamination incidents. I am enclosing a copy of the outline for that study which is in its initial data-gathering phase. Any comments or suggestions you or your staff might wish to make regarding this study would be appreciated. We will be pleased to provide you with a copy of the final report from this study when it is completed. We expect that this study will be completed in about 6 months.

I hope that I have been responsive to your concerns and I welcome any comments or assistance from you or your staff regarding the pathway study.

Sincerely,

Original signed by:

ROBERT B. MINOGUE

Robert B. Minogue, Director
Office of Nuclear Regulatory Research

Enclosure: Study Outline

DISTRIBUTION: EDO-000227
RES-84-2798

EDO-000227
SECY-84-2064
JDavis
WKerr
GCunningham
TMurley, RI
Plohaus, RI
DNussbaumer, OSP
MBridgers
DManson
RMinogue
DRoss
KGoller
EConti
WAMills
HPeterson
Subj. (C.7.20)
Rdg.
Cir.
Chron.

*See previous concurrence

OFC: HEB:dm*	:HEB*	:DRPES: D	:RES:DD	:RES:DD	:	:
NAME:HPeterson	:WAMills	:KGoller	:DRoss	:RMinogue	:	:
DATE: / /	: / /	: 1/10/85	: 1/12/85	: 1/14/85	:	:

Outline of Scoping Study
for Evaluating Potential Hazards
of Releases of Radioactive Wastes
to Sanitary Sewer Systems

I. Introduction

- A. Current Practice and Regulations
- B. Impact of Revisions to 10 CFR Part 20
- C. Incidents
 - 1. Description
 - 2. Impact
 - 3. Remedies

II. Sewage Treatment and Disposal

- A. Characteristics
- B. Sedimentation Processes
- C. Digestion Processes
- D. Treatment
- E. Disposal Options

III. Radiological Impact of Sewage Sludge Incineration

- A. Process and Magnitude
- B. Effluents and Control Measures
- C. Potential Pathways to Man
- D. Disposal Restrictions Required (on licensee)

IV. Radiological Impact of Sewage Sludge by Land Application and in Landfills

- A. Processes and Magnitude
- B. Soil-Plant Uptake
- C. Drinking Water Contamination
- D. Disposal Restrictions Required (on licensee)

V. Radiological Impact of Sewage Sludge by Other Methods

- A. Ocean Disposal (subject to EPA Permit - not treated in detail)
- B. Marketed Sludge Products
- C. Other
- D. Possible Disposal Restrictions on Licensees

VI. Summary and Conclusions