



NEW YORK STATE ENERGY OFFICE

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DOCKETING & SERVICE
BRANCH

Mr. Samuel J. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ATTN: Docketing and Service Branch

Dear Secretary Chilk:

This letter is submitted in response to the Federal Register notice of February 25, 1994 (59 FR 9146) regarding 10 CFR Part 20: Disposal of Radioactive Material by Release into Sanitary Sewer Systems.

New York State believes a rulemaking in this area is necessary and we support it. We have experience with sanitary sewer and treatment plant contamination and, therefore, feel the approach to regulating discharges should be re-evaluated in light of changes in the treatment technologies.

However, New York also feels there is a need for further examination of the various issues involved in this area. More information should be collected and offered for public review and comment. Furthermore, we feel that when a rulemaking is undertaken, an Environmental Impact Statement (EIS) should be done in support of it, pursuant to the National Environmental Policy Act of 1969 (NEPA).

More detailed comments on the NRC's advance notice of the proposed rulemaking are attached. The comments represent the effort and views of the New York State Departments of Environmental Conservation and Labor.

Sincerely,

Eugene J. Gleason
Deputy Commissioner for Operations

/ta
Enclosure



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New York State Department of Environmental Conservation
Division of Hazardous Substances
Bureau of Radiation
Comments on the U.S. Nuclear Regulatory Commission's
February 25, 1994 Advance Notice of Proposed Rulemaking on
Disposal of Radioactive Material by Release into
Sanitary Sewer Systems
May 5, 1994

General Comments

1. In the summary to the Advance Notice of Proposed Rulemaking (ANPR), the NRC asks for information to determine whether or not the regulations governing the release of radioactive material to sanitary sewers should be amended. The Department of Environmental Conservation recommends that the NRC revise the regulations. We also urge the NRC to prepare a full environmental impact statement (EIS), pursuant to the National Environmental Protection Act (NEPA), on the rulemaking. The current regulations on sewer releases, even the provisions adopted as recently as 1991, have never had the benefit of a full environmental review. The NEPA environmental impact statement process provides the mechanism for a complete evaluation of reasonable alternatives, full public participation, and documentation of the rationale behind the final regulations adopted.
2. If the NRC decides to amend the sewer disposal regulations, the Notice of Proposed Rulemaking should announce, for public comment, the compatibility category the NRC intends to apply to each provision. Agreement States are still in the position of being required to have in place regulations compatible with the new 10 CFR Part 20 without the NRC having determined the compatibility requirements. This must not happen again. In addition, publishing the proposed compatibility category for comment will allow Agreement States and other interested parties to participate in the decision on compatibility.
3. NRC should address (either in the rulemaking or in a regulatory guide) the issue of monitoring for materials prohibited from discharge to sanitary sewers. In some situations, it may be impossible to prevent the introduction of traces of insoluble radioactive material into wastewater. In that case, a lower limit of detection for the monitoring system must be determined. Guidance on setting the LLD is needed. (DEC has requested technical assistance from NRC on this issue.)

The following are our responses to the items under Request for Information and Comment in the ANPR:

1. Form of the Material for Disposal

The regulations should definitely take into account the new sewage treatment technologies being developed. DEC agrees that the effect of these technologies on radionuclide solubilities should be investigated. Another question that should be investigated is how the solubility of radioactive material may change in the sewer itself. Wastewater that enters a sewer downstream from the point of discharge of radioactive material can change the pH or other characteristics of the sewage, which can then affect the solubility of the radioactive material in the sewage. Such changes within the sewer can lead to deposition of radioactive material in the sewer itself, before the radioactive material reaches the sewage treatment plant.

2. Total Quantity of Material

The total quantity (or activity) limits should be re-examined. Limits specific to each radionuclide would be more complicated, but could be more effective in preventing contamination and exposures. Any new limits on total activity should be based, in part, on the biokinetics and health risk for each radionuclide. However, expressing the activity limit in terms of the ALI (or some other quantity based on dose assessments) would not necessarily account for the effects of the sewage treatment process. After sewage treatment, the chemical form and concentration of a radionuclide may be significantly different than what was originally discharged to the sewer. The ingestion pathway may no longer be the most significant source of radiation dose. Or, if ingestion is still the primary pathway, changes in radionuclide concentration or chemical changes could affect the fate of the radionuclides in the body.

The NRC invites comments on the option of setting a total activity limit based on the specific sewage treatment processes involved and the other discharges of radioactive material to the same STP. This could be a more effective approach; however, it would be a major change in the way discharges to sewers are regulated. Such a regulatory scheme may require that a regulatory agency determine the maximum annual quantity that a particular STP could receive. There may then need to be a system for allocating that total activity among all the licensees discharging to that sewer system. This is similar to allocating the waste assimilative capacity of a waterway, which raises many questions of fairness, priority, and grandfathering.

Setting system-specific activity limits would probably require that licensees obtain approval in advance for the discharges of radioactivity, increasing costs for both licensees and regulatory agencies. Agencies would have to keep track of the total discharges to the STP and any changes in the treatment process.

An alternative to this approach is to set activity limits so low that no matter what the treatment process or the number of dischargers, the limits or ALARA goals for doses to the public are not exceeded. This would not require as much regulatory oversight. These and other reasonable alternatives should be evaluated in the EIS for this rulemaking.

The petition for rulemaking by the Northeast Ohio Regional Sewer District (NORS) requests that licensees provide notice 24 hours in advance of discharging radioactive material to the sewer. This request should be evaluated after new limits are set for sewer discharges, because only then can the usefulness of such a notice be assessed. For example, if sewer discharge limits are to be lowered to a point where the chance for reconcentration in any STP is remote, there would be little justification for advance notice. On the other hand, if the total quantity limit is to be set based on the specific treatment plant, its processes, and its capacity, then notice to the STP may be justified to keep track of the total quantities discharged.

The NORS requested that the incineration of radioactive material discharged to sanitary sewers be exempt from NRC regulations on incineration of radioactive material. This raises important questions about the regulatory status of radioactive material disposed of to the sewer. In the contamination of the STP in Tonawanda, New York, the State of New York did not pursue an enforcement action against the Town of Tonawanda for incinerating radioactive material without the approval of the Department of Environmental Conservation. If release to the sanitary sewer system is to be considered disposal, the limits should be set so that after the release to the sanitary sewer, no further regulation of the radioactive material is needed. Otherwise, STPs would be forced to handle regulated material when, it could be argued, they have no authority (under the Atomic Energy Act) to limit or restrict discharge of the material to their system.

3. Type of Limits

NRC should reconsider the approach of limiting the discharge of radioactive material based on the dose to a person who ingests the STP effluent. Instead, all exposure pathways should be evaluated, and the pathway(s) most likely to deliver the highest dose should govern the dose considerations. If more realistic

scenarios were used for the pathway analyses and dose assessments, the reference dose should be reduced from 500 mrem to a more realistic number. The new reference dose should take into account the possibility of other exposures to the same individual.

While all reasonable dose scenarios should be evaluated, the potential dose should not be the only factor considered in setting sewer discharge limits. The contamination of a sewer or sewage treatment plant may actually result in an insignificant dose to workers and the public, but it may have tremendous costs in time and expense spent for decontamination. The goal of the limits should be twofold: to keep doses ALARA and prevent the contamination of sewers, STPs, receiving waters, and sludge and ash disposal sites. These two goals and the alternatives for achieving them should be evaluated in an EIS.

The NRC requests comments on the alternative of expressing the discharge limit in terms of a dose limit (instead of in activities and/or concentrations). This would be more complicated to implement. It would require more regulatory oversight and perhaps require licensees to obtain prior approval for sewer discharges. These alternatives should be evaluated in the EIS for the rulemaking.

4. Exemption of Patient Excreta

At this time, we do not support rescinding the exemption for patient excreta. These wastes present not only biohazards, but also a real risk of contamination and exposure to workers and the public if the wastes must be collected and monitored before disposal. However, this exemption has been in effect for many years, without reevaluation. In this ANPR, the NRC has identified changing the exemption as a rulemaking alternative. Therefore, the issue should be fully evaluated in an EIS. The EIS should not address only the question of whether or not the exemption should be retained. Rather, a range of reasonable alternatives for modifying the exemption should be assessed. If the final decision is to retain the exemption, the EIS will provide a long-needed record of the rationale for the decision and the expected environmental and public health impacts.

NYS DOL COMMENTS ON THE USNRC'S ADVANCED NOTICE OF
PROPOSED RULEMAKING REGARDING DISCHARGE OF
RADIOACTIVE MATERIALS TO SANITARY SEWER SYSTEMS

The longstanding practice of allowing discharge of radioactive materials to sanitary sewer systems, under regulations that established both concentration limits and annual activity caps, counted on dilution and dispersion to further reduce concentrations. However, these regulations pre-dated modern sewage treatment processes, and incidents involving re-concentration of nuclides began to occur regularly. The changes to 10 CFR Part 20, which took effect in 1991, reduced concentration limits and limited sewage discharge almost exclusively to soluble materials. The solubility requirement was a logical "quick fix" since insoluble materials were the cause of most incidents, but no basic changes were made in the analytical approach used. A NUREG which was issued after the Part 20 revision, modeled individual exposures based on reasonable scenarios but started with the Part 20 limits and used very conservative assumptions. It would have been more logical to reverse this process (derive concentration and total activity limits starting with individual dose goals) and to have used the results as the revised Part 20 limits.

The NRC "notice" states that NRC has now contracted for a study to evaluate the effects of sewage treatment methods on the solubility of radioactive materials. It is further stated that the outcome of the study could result in rule changes regarding the forms of radioactive material suitable for sewage disposal.

NRC raises a number of other issues in this notice, such as: whether it should continue to use an annual activity limit, or specify annual limits for each nuclide; whether it should continue the analytical approach of assuming individuals ingest water at the sewage outfall; whether it should evaluate exposure from sewage sludge; and whether excreta from patients undergoing diagnosis or treatment with radiopharmaceuticals should continue to be excluded from regulation.

Except for the patient excreta exclusion, all of these issues require more technical data on which to base a decision. Collecting the excreta of patients undergoing diagnosis would involve an expense and worker biohazard out of all proportion to the radioactivity involved. It would also be impossible to accomplish for outpatients, who make up a large proportion of this patient population. Collecting excreta from therapy patients presents both a biohazard and radiation hazard to workers, that dwarfs any individual exposure scenario that could be applied to sewage discharge.

NRC should await the results of the current study it has contracted for, and should consider what further data is needed to support decision-making on these issues. It should then publish

this information for review and comment. The types of regulatory changes being proposed would greatly complicate procedures and recordkeeping for licensees, and the review of these procedures and records by regulatory agencies. They should not be undertaken without a firm data base.

It would have been preferable for NRC to undertake this review before it revised the sewage discharge limits in 1991. Apart from the additional burdens that are imposed in almost all rulemakings, making sequential changes in the same regulation is in itself a burden for regulated parties. NRC should ensure that any changes eventually judged to be necessary based on data obtained, are made in a consolidated fashion and not piecemeal.