



STATE OF NEW YORK DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

[REDACTED], M.D., M.P.H., Dr.P.H.
Commissioner

[REDACTED]
Executive Deputy Commissioner

August 29, 2000

[REDACTED]
Bureau of Radiation and Hazardous Site Management
Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

- Re:
- Seaway Niagara Landfill FUSRAP Site, Areas A, B and C
 - Draft Addendum to the Feasibility Study (June 23, 2000)
 - Draft Proposed Plan (June 23, 2000)
 - Technical Memorandum: Estimates of Air Quality Impacts of Radon in Landfill Gas
 - Technical Memorandum: Modeling of Radiological Risks from Residual Radioactive Materials Following Implementation of Remedial Alternatives
 - Technical Memorandum: Application of 10 CFR Part 40, Appendix A, Criterion 6(6) and Derivation of Benchmark Doses

Dear [REDACTED]:

At your request, the New York State Department of Health has reviewed the above documents and offers the enclosed comments. We believe that the proposed remedy (capping of the waste in the existing landfill) is not protective of public health, and suggest that the Army Corp of Engineers consider other remedial alternatives. We concur with the Environmental Protection Agency's recommendation that the proposed plan be revised before it is released to the public.

Thank you for the opportunity to comment on these documents. If you have any questions please do not hesitate to contact me at [REDACTED].

Sincerely,

[REDACTED]
Assistant Director
Bureau of Environmental
Radiation Protection

Enclosure

Cc: [REDACTED]

**STATE OF NEW YORK — DEPARTMENT OF HEALTH
INTEROFFICE MEMORANDUM**

TO: [REDACTED] Ph.D.
FROM: [REDACTED]
DATE: August 28, 2000
SUBJECT: Comments on Seaway Proposed Plan

General Comments:

The United States Army Corp. of Engineers (USACE) has proposed a closure plan that relies on the concept of institutional control of the Seaway site under the DEC's Part 360 industrial landfill closure requirements, which requires the operator (BFI), to provide monitoring and maintenance of the site for 30 years. The ARARS delineated by USACE however, 40 CFR 192, Subpart B and 10 CFR 40, Appendix A, Criterion 6(6) are promulgated to provide control for at least 200 years to 1,000 years. This then places the responsibility and future costs on local and state government to insure the public health.

USACE's own models predict that the proposed cap for the landfill and MED wastes will entirely erode under natural weathering in 1,000 years at which time the radium concentrations will be at higher levels due to the decay of Th-230 left on site. This plan, however, absolves the federal government from any future responsibility for the waste.

A recently released report by the National Research Council of the National Academy of Sciences commissioned by the US DOE¹ concerning "institutional control" for contaminated sites related to nuclear weapons manufacturing advises that, "... there is no convincing evidence that institutional controls such as surveillance of radioactive and hazardous waste left at sites, security fences and deeds restricting land use will prove reliable in the long run." While this site does not reach the level of contamination as some of DOE's manufacturing sites, the principle of long-term management or stewardship by the federal government is justified by the nature of these legacy wastes.

The containment strategy proposed does not consider the potential impact of industrial chemicals in the landfill on the leachability of radioactive constituents to the surface or ground waters on-site. Characterization of these chemicals within the waste and in the perched water tables has not been performed for radiological or chemical makeup.

¹ "Long-term Institutional Management of US Department of Energy Legacy Waste Sites", National Academy of Sciences, August, 2000.

According to the 1979 (Wehran) report; " It is clear that the vast majority of the landfill impact on the area's water resources will manifest itself as pollution of surface water streams emanating from the landfill." Given that the closure controls only address continuity of maintenance of the leachate collection system for 30 years, it would appear inevitable that radioactive materials from MED would be borne into the surface water streams leaving Seaway.

It is also estimated that it would take about 1,500 years for the leachate from the landfill to reach the Camillus Shale bedrock aquifer where wells have yielded 1,500 to 3,000 gallons of water per minute. Ra-226 levels from Th-230 decay would be at much higher levels and be much more soluble. Combining the increased solubility of Ra-226 with the as yet unknown effects of the landfill solvents on the clay ion exchange capabilities, there is no assurance that groundwater will not be adversely affected much sooner than anticipated.

Based on the uncertainties mentioned and the fact that the proposed plan does not, in USACE's own words, meet the objectives of reducing toxicity, mobility, or volume through treatment, to provide long term effectiveness and permanence and the reliance on short term institutional controls for only 30 years rather than the required 200 to 1,000 years the plan does not meet CERCLA requirements and cannot be considered protective of the public health.

Specific Comments:

Page 7, Paragraph 2.1.5 - The statement that residues transported to the landfill are highly insoluble and not subject to leaching may have been true at the time of disposal but at the present time may be debatable since it is unknown what actions or reactions may have or could occur as a result of the quantity of solvents and other chemicals deposited in the landfill. Since no characterization of these chemicals has taken place and the leachate collection system can only be relied on for 30 years, the potential for adverse impacts on the surface and groundwater is unknown.

Addendum to the Feasibility Study Page 23 & 24 addresses releases to the leachate collection system and subsequently to the Town of Tonawanda sanitary sewer system. While the MED waste is not licensed by the NRC and DEC Part 380 regulations do not directly apply, it is not known what the isotopic mix of the leachate is and therefore the sum of fractions rule cannot be utilized. Also, Part 380 allows, through Section 380- 4.2 (4c)(2) that restrictions on release may be imposed to minimize or avoid adverse environmental impacts if the material is found to concentrate in the ash or sludge. (At this time the Tonawanda Sewage Treatment plant incinerates sludge) It is also unknown, if after 30 years the leachate will be monitored or released directly to the environment.

Figure 2.3 does not show the locations of monitoring wells, that is found in Figure 2.4. The NYSDOH drinking water standards are 15 pCi/l gross alpha and 50 pCi/l gross beta not 1,000 pCi/l.

It is also stated in Section 2.3.4.2, paragraph 4, that the 16.44 pCi/l gross alpha result for MW-10 was not corrected for uranium and radon and thus not comparable to the standard. In order to correct for uranium either the sample needs to be analyzed for uranium or at a minimum a known background quantity has to be subtracted. As to the reference for correcting for radon, the process of conducting a gross alpha/beta analysis using standard techniques and counting in a gas flow proportional counter precludes any contribution from radon directly. Radon progeny may be present but not radon. We also would point out that the MDA's stated by the laboratory listed in Table 2-5 for gross alpha are much too high and in many instances greater than the standard. This is not an acceptable practice.

Page 27, paragraph 2- states that the analysis was conducted for gross alpha, not radon dissolved in water. Therefore, unless a separate sample was analyzed through liquid scintillation techniques for radon in water, the statement that the result variability is due to radon is incorrect.

Technical Memo-Modeling Radiological Risks Page 5&6, paragraph 1 - In attempting to create a surrogate for Ac-227 based on the concentration of Ra-226 and assuming equilibrium with uranium the result may have been inadvertently underestimated. Historical documents indicate that most if not all of the domestic ore processed at Linde were preprocessed to remove Vanadium. In so doing, most of the radium in the ore was removed, thus the ore processed and removed to the Haist property was already depleted in radium and thus the ratio may not be applicable. According to a report prepared for the USDOE by the Aerospace Corp. in 1981 entitled, "Evaluation of the 1943-1946 Liquid Effluent Discharge from the Linde Air Products Ceramic Plant", page 1-6, the domestic ore tailings contained less than 20 percent uranium oxide and the sludges from other Manhattan Engineering District operations up to 70 percent U_3O_8 and that this material contained little or no radium. African Ores were treated separately with the waste forwarded to NFSS or other locations, not the Haist property.

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