



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

* M E M O R A N D U M

November 7, 1986



To: Curt Eschels, Special Assistant for Policy
Office of the Governor

From: Roger Stanley, Washington Department of Ecology
Tim Nord, Washington Department of Ecology
Nancy Kirner, Washington Department of Social and
Health Services

Subject: Integration of Hazardous and Low Level Radioactive
Waste Regulatory structures - A WASHINGTON STATE
PERSPECTIVE -

This memorandum, and the attached comparative tables, offer a summary of discussions and study conducted over the past year between staff of the departments of Ecology and Social and Health Services. At issue was the regulation of low level radioactive wastes which also exhibit the properties of hazardous wastes. Discussion often focused on this state's privately operated low level waste site (US Ecology). However, it is important to note that at present, US Ecology has opted to cease acceptance of all wastes regulated as hazardous under the EPA's RCRA program or Washington's dangerous waste regulations. Reactivation of the site as an operating hazardous waste facility would have to be preceded by the issuance of a hazardous waste permit approved by both the department of Ecology and the Environmental Protection Agency. US Ecology has recently stated emphatically that they do not intend to be the first firm to submit a hazardous waste Part B application for the disposal of mixed waste.

In spite of this, and in an effort to help resolve the mixed waste problem not only in Washington but nationwide, our activities have had two primary objectives;

- 1) to review radioactive and non radioactive waste regulatory structures for compatibility, and

- 2) to develop and initiate activities aimed at providing guidance to operators of facilities generating, transporting, treating, storing, or disposing of these commercially generated¹ mixed wastes.

For purposes of this memorandum, low level radioactive mixed waste (LLRMW) is defined as hazardous waste meeting the definition of both a) low level radioactive waste under the Low Level Radioactive Waste Policy Amendments Act of 1985, as well as naturally occurring radioactive material and, hazardous waste under b) the Resource Conservation and Recovery Act of 1976, or Washington State's Hazardous Waste Management Act of 1976, (as amended). Wastes exhibiting these characteristics must:

" ... be managed and disposed of in compliance with EPA's RCRA regulations in 40 CFR Parts 124, and 260 through 270, and NRC's regulations in 10 CFR Parts 20, 30, 40, 61, and 70. Management and disposal of mixed LLW must be conducted in compliance with state requirements in states with EPA--or NRC--authorized regulatory programs for hazardous waste and LLW, respectively."²

Comparative review of the above regulations has revealed no areas of inconsistency, i.e., where compliance with one set of regulations automatically forces a non compliance with the other. It is our position that full facility compliance is workable and, in fact, mandated by the dual hazard associated with these wastes. However, our review has led to a wide range of interpretive clarifications and discussion of parallel requirements, and in many instances, straightforward adoption of the more protective stipulation. We have also adopted those requirements not complemented by corresponding requirements.

¹ Wastes and activities of the United States Department of Energy have not been considered in the development of this document.

² GUIDANCE ON THE DEFINITION AND IDENTIFICATION OF MIXED LOW-LEVEL RADIOACTIVE AND HAZARDOUS WASTE - DRAFT-, USEPA and USNRC work group, Washington, D.C., September 10, 1986.

Curt Eschels
Regulation of Commercial Mixed Wastes
November 7, 1986
Page 3

The remainder of this memorandum is consequently offered, not as a discussion of where problems exist, but as a summarization of our consensus, and as guidance to the regulated community. Further refinement of specific requirements over the coming months will focus on

- a) the editing and finalization of a formal Guidance Document for Mixed Waste Management (now in initial draft), and
- b) investigation of the need for amendment of our respective agency laws and regulations.

Areas of Primary Concern

The following text covers those issues and requirements which were initially thought most likely to raise problems of compatibility. Comments are aimed at outlining the extent and manner in which our respective regulations are to be integrated.

WASTE ANALYSIS AND ALARA

Prescriptive EPA and Ecology requirements stipulate that generators and facility owners and operators obtain a detailed chemical and physical analysis of their hazardous wastes, that waste analysis plans be developed and maintained, and that off site facilities provide for the analysis, if necessary, of incoming shipments. These requirements go beyond those of the NRC and DSHS which provide for, but do not require, analysis. The adoption of EPA and Ecology requirements for LLRMW is not expected to be problematic. However in some instances, minimization of radiological exposure during sample collection and analysis may require non standard precautionary techniques. The concept of keeping radiation exposures as low as reasonably achievable (ALARA) and the requirement for performance of inspections and analysis will need to be continually balanced as each situation demands.

Curt Eschels
Regulation of Commercial Mixed Wastes
November 7, 1986
Page 4

MANIFESTS, RECORD KEEPING, AND REPORTING

Facilities generating, shipping, transporting or receiving LLRMW are to utilize both hazardous and LLW manifests, and comply with corresponding requirements, until formal consolidation under one document (now in draft). Reporting procedures will also require future streamlining. Adherence to a two manifest/shipment system may cause confusion on the part of transporters and emergency responders.

LANDFILL REQUIREMENTS

NRC design, operation, and closure requirements are typically more general in nature, and are adequately met through the application of the more prescriptive EPA and Ecology regulations. However, we have recommended that they be retained in order to avoid facility siting in areas of high rainfall. (Prescriptive hazardous waste design standards and disposal and closure requirements are to be met.) Compliance with these standards is designed to preclude or minimize leachate generation. Handling and disposal of leachate in accordance with the ALARA concept would not pose a major problem (See comments under waste analysis).

GROUNDWATER MONITORING

Prescriptive EPA and Ecology requirements covering monitoring system design, emplacement and operation are to be met. Radioactive regulatory requirements will necessitate isotopic analysis to be incorporated into the monitoring program. Both systems require corrective action in the event of contamination. ALARA consideration are to be incorporated into sampling, analysis and the trigger provisions for clean up. No problems are expected.

Curt Eschels
Regulation of Commercial Mixed Wastes
November 7, 1986
Page 5

INCINERATOR REQUIREMENTS

Permitting and licensing requirements of both the EPA/Ecology and the NRC/DSHS are to be met. Incineration of LLRMW may be permitted on a case by case basis following approval of measures for the control of both radiological exposure and hazardous constituents. Comparative review has resulted in the adoption of typically more prescriptive EPA and Ecology requirements covering waste analysis, exceptions, record keeping, permitting, performance standards, monitoring and inspection, and closure.

In our view, the primary LLRMW impact of the EPA's HSWA amendments will be to force eventual incineration. We support immediate pursuit and rapid siting of such a facility.

CLOSURE AND POST CLOSURE REQUIREMENTS

LLRMW site operators are to meet the EPA/Ecology closure requirements, 30 year post closure care period, and associated regulations. Facilities must also meet the NRC/DSHS 100 year institutional control requirements. Modification of existing leases and laws may be necessary to accomplish this.

LIABILITY

LLRMW sites are to meet EPA/Ecology liability standards. Studies now in progress, reviewing the overall liability provisions under the LLW program, may result in modification of laws, site use permits, license, and generator certification statements.

Curt Eschels
Regulation of Commercial Mixed Wastes
November 7, 1986
Page 6

HSWA REQUIREMENTS

Comparative review of requirements adopted within the 1984 amendments to the EPA's RCRA regulations has not raised any issues of compatibility or major impact. HSWA prohibitions and deadlines covering specific waste types do not pose an immediate problem. US Ecology has ceased acceptance of these wastes at Hanford, has notified the state of their intent to close as a hazardous waste facility, and would need to have an approved permit in hand prior to any additional acceptance of waste. Meeting the HSWA land disposal prohibitions will likely force the siting, at a national level, of an incinerator for mixed waste.

PROHIBITION OF EHW DISPOSAL

State dangerous waste regulations prohibit the disposal of wastes designated as Extremely Hazardous except at an approved site. No such site has been developed within Washington as yet. Any disposal of extremely hazardous LLRMW is thus prohibited. Additional study and possible amendment of the state's dangerous waste regulations in regard to the continued disposal of these wastes on the Hanford site may be necessary.

MANAGEMENT OF LEAD

The issue of the management of lead, both as scrap and as shielding within discarded components, deserves special attention. As LLRMW these wastes are to be subject to EPA/Ecology hazardous waste requirements as well as NRC/DSHS low level radioactive regulations. Additional stipulations requiring the development, submittal for approval, and implementation of waste reduction and recycling techniques will be developed over the coming year. Recycling is to be required except in those instances where its use as shielding of a sealed source, and ALARA considerations, make recycling unwarranted.

RS:aa

cc: Dick Burkhalter, Ecology
Greg Sorlie, Ecology
Tom Eaton, Ecology.
Terry Husseman, Ecology
T.R. Strong, DSHS

WDOE/EPA Requirements

Liability

WDOE/EPA requires waste generators and site owner/operators to be liable for cost recovery in the event site remediation required.

NRC/DSHS Requirements

Liability

Generators not liable, operator liable through active life and 5 year post-closure care period. Costs for clean-up during institutional care period will be borne by trust fund and owner of property.

EPA/NRC Resolution

Liability

Not addressed.

State Resolution

Liability

Adopt state/EPA position on liability.

Unresolved Issue

Liability

Will require a change in law and rewriting of site use permit/license/generator certification statement.

HSWA Impacts/Resolution

* State currently undertaking liability study. Results of study may change state resolution.

WDOE/EPA Requirements

NRC/DSHS Requirements

EPA/NRC Resolution

State Resolution

Unresolved Issue

HSWA Impacts/Resolution

Waste AnalysisWaste AnalysisWaste AnalysisWaste Analysis

WDOE WAC 173-303-300
EPA 40 CFR 264.13

DSHS WAC 402-62
NRC 10 CFR 61

Requires detailed chemical and physical analysis prior to treatment or disposal. Disposal site required to analyze incoming wastes if discrepancies found in manifest or insufficient information supplied by generator.

Radiological analysis necessary for radioactive classification and suitability for land disposal. Disposal site not required to undertake detailed analysis of incoming wastes (only one of all package per week). Responsibility on waste generators.

Evaluate radiological hazards due to sampling and analysis to assure worker protection requirements of 10 CFR 20 are met.

Retain Ecology/EPA/NRC/DSHS regulations in their entirety. Require generators to satisfy waste designation requirements per WAC 173-303-070 and 40 CFR 261. Develop on-site procedures at disposal site for waste verification, if necessary. Ensure on-site verification procedures satisfy 10 CFR 20. The concept of keeping radiation exposures as low as reasonably achievable (ALARA) and requirements for performance of inspections and analysis will need to be continually balanced as each situation demands.

ManifestsManifestsManifestsManifests

WDOE WAC 173-303-180
173-303-240
173-303-665

DSHS WAC 402-62
NRC 10 CFR 20

EPA 40 CFR 262, 263, 264

Requires use of uniform manifest. Manifest requires: generator's, transporter's, designated facility's name; special handling instructions, if necessary; use of same manifest throughout shipment. Waste identification focuses on chemical and physical characteristics.

Transporter must sign manifest prior to leaving site.

Same manifest throughout transport lite.

No specific manifest required. Must satisfy NRC and DOT transportation requirements. Designated disposal site does not need to be identified by generator. Waste identification focuses on physical characteristics and radiological hazards.

Transporter must notify receipt of waste within one week of acceptance.

New manifest upon exchange of waste between parties allowed.

None provided.

Utilize two manifest systems until consolidated manifest is developed. Where requirements are more restrictive, those apply.

A separate manifest tracking system should be developed for mixed wastes.

WDOE/EPA Requirements

NRC/DSHS Requirements

EPA/NRC Resolution

State Resolution

Unresolved Issue

HSWA Impacts/Resolution

Ground Water MonitoringGround Water MonitoringGround Water MonitoringGround Water Monitoring

WDOE WAC 173-303-645
EPA 40 CFR 264.90

DSHS WAC 402-61
NRC 10 CFR 61

Ground water monitoring must be conducted before, during, and after site operation to assess ground water quality. Three phases of monitoring possible: detection; compliance; and corrective action. Emphasis is on chemical hazards to human health and environment.

Monitoring requirements detailed and specific.

Ground water monitoring must be conducted before, during, and after site operation. Monitoring conducted to assess radiological impacts on human health and environment. Corrective action possible

Monitoring requirements performance based.

Non provided. Further evaluation necessary.

The main issue focuses on possible corrective action in instances where ground water has been contaminated to unacceptable levels. Corrective action programs are currently possible under all regulations. Concern is ALARA.

Analysis of corrective action programs has as its basis, protection of human health and environment. Corrective action options will consider all hazards, i.e., chemical and radiological. Therefore adoption of current hazardous waste ground water requirements are acceptable.

Language pertaining to radiological health effects should be incorporated into corrective action decision making process.

Attachment 2: Other Items

Throughout the two sets of regulations, minor differences have been noted. Resolution of these differences has not been a source of conflict, but may represent opportunities for innovation and streamlining as the requirements for mixed waste are refined. These include:

- 1) Notification and identification numbers of generators and facilities vs. licensing/site use permit system of generators and facilities.
- 2) Use of Pollution Control Hearings Board by WDOE vs. use of an Administrative Law Judge by DSHS.
- 3) Public may challenge a facility at any time during its lifetime; public notice portions of SEPA may limit this public challenge to 30 days.
- 4) Timing of permitting and licensing requirements are different.
- 5) Notification of one or both agencies?
- 6) Importation of mixed waste shipments?
- 7) Manifest tracking requirements are different.
- 8) The use of high integrity containers and stable waste forms for containment of mixed wastes should be considered as a means of further environmental protection.