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STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH
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Roy Romer
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Thomas M. Vernon, M.I
Executive Director

16 October 1988

Rocky Flats Area Office
U.S. Department of Energy
P.O. Box 928
Golden, Colorado 80402

Attn: Mr. Albert E. Whiteman, DOE Area Manager
Mr. Dominick J. Sanchini, President & General Manager
Rockwell International

Dear Messers Whiteman & Sanchini:

The Colorado Department of Health ("the Department") has reviewed the Container Storage Facilities closure plan of April 5, 1988. The Department has some questions on various aspects of the Closure Plan and feels that many of these can be best addressed at an informal meeting. Ideally, this meeting can be held along with the meeting for the Building 443, No. 4, Fuel Oil Tank Closure Plan, scheduled for Wednesday, October 19, 1988 at 1:00 P.M. Please contact George Dancik at 331-4842, should you have any questions on either the meeting or the attached comments.

Sincerely,

Gary W. Baughman

Gary W. Baughman, Unit Leader
Hazardous Facilties Unit
Hazardous Materials & Waste Management Division

cc: Nat Miullo, EPA
Martin Hestmark, EPA

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Rocky Flats Plant Container Storage Facility Closure Plan Comments

1. The vicinity map (Figure 1 on page 2) should include the location of the cities of Broomfield and Arvada. These communities are cited in the Closure Plan Section 1.1.1 as being 9 to 12 miles from the Rocky Flats Plant (RFP), along with the cities of Boulder and Golden, which are included on the map.

2. The geologic cross sections presented with the closure plan contain only superficial information and do not provide details of the geologic setting present beneath each of the units undergoing closure. The lack of detailed knowledge about the specific geology underlying the closing units may hinder the determination of potential contamination extent. If evidence of contamination is revealed, the post-closure plan must include a detailed geologic setting for any regulated units which cannot be clean closed and are subject to closure as a landfill under 6 CCR 1007-3, Section 265 Subpart N.

3. Section 1.3.3 indicates a total of 460 drums stored at the Property Utilization and Disposal (PU&D) Drum Storage Area over its operating life. However, with 20 drums accumulating each year from 1974 - 1977, and 50 drums yearly from 1978-1985, the total number of drums present over the life of the storage area is 480. This increase in the number of drums consequently raises the total container storage capacity, shown in Section 1.3.4, from 25,300 to 26,400 gallons. Estimated storage capacity is probably also too low for the Swinerton and Walberg (S&W) Contractor Storage Yard. This unit had the potential to contain much more than the 1,965 gallons of waste which were estimated for 1985.

4. Explain the "administrative controls" which would be expected to prevent any radioactive contamination from occurring in the PU&D yards and at the other container storage units. Describe the quality assurance program for insuring the absence of radioactivity in the container storage areas.

5. 6 CCR 1007-3, Section 265.112(b)(3) requires "an estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility." For the S&W Building 980 Container Storage Facility, Section 1.4.3 indicates that "the maximum number of containers stored at any given time was ten". However, Section 1.4.7 states that "as of March 1988, the area contained approximately 35 drums". Explain the discrepancy, and provide an updated storage capacity for the unit.

6. Avoid words like "should" or "might". For example, Section 1.4.6 indicates that wastes stored in the drums "Should not have contained radioactive contamination". 6 CCR 1007-3, Section 265.13 requires "a detailed chemical and physical analysis of a representative sample of the waste". The May 1985 analysis obtained from the drums stored in both the S&W Building 980 Container Storage Facility and the PU&D Drum Storage Area indicates that a gamma scan was performed, but not an alpha or beta scan. Explain how the composite sample was adequately characterized given the absence of these scans.

7. The maximum container storage capacity for the Building 885 Drum Storage Area should be 20 drums for each of the two sides of the storage area, or 2,200 gallons. The maximum storage capacity for the other container storage facilities is also potentially much different than the amount of wastes cumulatively stored at the individual units at any given time. This is due to the drums being cycled in and out over the operational lifetime of the closing units.

8. Explain whether drums in the Building 885 Drum Storage Area were at one time stored on pallets directly on the ground before the ground surface in the east and west sections was covered over with concrete. Sections 1.6.5 and 3.1.1 are contradictory and the long-term storage history is unclear. If drums were at any time stored directly on the ground surface, then soil samples from under the concreted slab must be obtained. In this instance the sampling procedure for Building 885, as described in Appendix 2, page 20, is inadequate. This unit is also identified as SWMU 177 in the 881 Hillside RI/FS, and is not considered a potential source of ground-water or surface-water contamination. However, Section 1.6.7 notes evidence of "staining on the ground surface", and Section 1.6.5 indicates the lack of containing berms around the storage area. Explain the contradiction in these two reports.

9. Explain your source for the review of 90 day accumulation storage in the Building 865 Drum Storage Area. Section 1.8.1 references J. Norris, 1988, while Section 1.8.7 references J. Norris, 1986 and the U.S. DOE, 1987A. Section 1.12 references 40 CFR as the source for identifying the maximum extent of operation for a closure plan. As the Rocky Flats Plant falls under the jurisdiction of the Colorado Code of Regulations, the corresponding section of 6 CCR 1007-3, should be the reference cited.

10. 6 CCR 1007-3, Section 265.113(b)(2) indicates that in order for the Department (CDH) to approve an extension of the 180 day closure period, the owner/operator must have taken and continue to take "all steps to prevent threats to human health and the environment". The inclusion of the general monitoring and security procedures at the plant, taken from the 1986 "Annual Environmental Monitoring Report" does not specifically address the protection of human health and the environment at the unit(s) that are not operating that are undergoing closure. Explain the unit-specific procedures RFP will use in order to prevent threats to human health and the environment.

11. The floor screening survey for removable beta-gamma radiation, from Section 3.2.2.2, must be stated as 1000 kpm/100 square centimeters, and not "less than the activities defined in Table XII". The beta-gamma screening level for fixed contamination must also be explicitly stated and not referred to as "less than those defined in Table XII" where various values are given. Radioactive Contamination levels are based on ALARA, or "as low as reasonably achievable". The values presented in Table XII are the <u>maximum</u> acceptable, and efforts must be made to reduce values further.

12. The sampling methods presented in Appendix 4, "Rinsate Sampling Methods", do not specifically address the sampling and analysis of rinsate. Likewise, the soil sampling method presented in Appendix 7 does not address the sampling of soils found within the areas of potential contamination. Generic methods are not appropriate in these cases and sampling methods specific to the investigation must be included.

13. Section 5.1 states that ground-water monitoring will be provided if contaminated soils are encountered all the way to the water table. Ground-water monitoring will also be required under a Part 264 Post-Closure Care Permit if the container storage units cannot be "clean-closed" but must be closed as a landfill. 6 CCR 1007-3, Part 264, Subpart F indicates that a ground-water monitoring system must consist of at least "a sufficient number of wells installed at appropriate locations and depths to yield ground-water samples from the uppermost aquifer". Section 5.1 of the closure plan states that "three downgradient monitoring wells and one upgradient well will be located at each container storage facility requiring ground-water monitoring". These numbers from Part 265, are not absolute standards, and will be subject to refinement by CDH, dependent on the extent of the contaminant plume and the site-specific geology and hydrogeology of the individual container storage area.

14. 6 CCR 1007-3, Section 264.94 Table 1 provides a ground-water protection standard for certain constituents. If the constituent of concern is not presented in this table, then the performance standard is background according to Section 264.94(a)(1). However, an alternate concentration limit can be granted by CDH. RFP has proposed that the ground-water protection standard be the highest of: background, drinking water standards, proposed drinking water standards, maximum contaminant levels (MCLs) or Colorado Pollution Discharge Elimination System (COPDES) permit discharge limits. If ground-water monitoring is deemed necessary at any of the container storage sites, RFP will select a ground-water protection standard, subject to approval by CDH. This standard will be included in the post-closure permit.

15. 6 CCR 1007-3, Section 265.115 requires the certification of closure by an independent registered professional engineer. This engineer must be present during operations which are essential to the closure of each individual unit. Soil sampling operations, as well as contaminated soil removal and concrete decontamination, are key operations to closure certification and must be monitored by the certifying engineer.

16. The list of sampling indicator parameters, presented as Table II in Appendix 2, may be sufficient to characterize the soils. However, if the photo ionization detection (PID) or organic vapor analysis (OVA) screening of the sample material registers positive, and none of the indicator organics can be identified in concentrations high enough to account for the PID or OVA levels, then analysis for the volatile and semi-volatile organics on the Hazardous Substance List (HSL) must be performed.

17. State your rationale in deciding whether to conduct gross alpha and/or gross beta radiation surveys in conjunction with FIDLER surveys for gamma radiation. The surveys to be used must be explicitly stated within the closure plan. As mixed waste was potentially stored at these units, alpha, beta and gamma assessments may be necessary in order to independently identify the presence of radiation.

18. 6 CCR 1007-3, Section 265.112(b)(4) requires a detailed description of the procedures for testing and sampling surrounding soils, and the criteria for determining the extent of decontamination necessary to satisfy the post-closure standard. RFP has proposed a 70% probability of locating contaminated areas under the random systematic sampling program. This value does not necessarily represent a high enough probability for finding potential contamination sources, especially since the radius of contamination is based on the total number of drums estimated to be added per year. This approach can easily miss small areas (1 or 2 drums) of contamination particularly in the soil sampling grid locations for the Building 444/453 Drum Storage Area.

19. The "rule of thumb" soil sampling method which consists of 16 samples, does not provide an adequate program for locating and identifying potential contaminated areas in the S&W Storage Yard, an area of almost 75,000 square feet. Several large areas of the storage yard, most of which are located in historical locations of material storage (Figure 8, page 36), are without sampling locations. The sampling plan for the S&W Storage Yard must address all areas of the yard, particularly areas of known storage. This sampling program should be in conjunction with the sampling of both the soil-stained area and the sites of known material storage during 1985.

20. The background soil sampling section of Appendix 2 (page 13) indicates that "nine soil borings within one background soil plot will be made". The location of the background soil plot as well as the placement of the borings must be indicated within the closure plan.

21. The determination of the vertical extent of contamination must not be limited by the ground-water table, as is stated in Appendix 2, Section 4.5. Borings should be extended until uncontaminated materials are reached, and not just until the ground-water table is encountered.

22. If RFP "reserves the right to send samples off site for analysis or to substitute equivalent methods", as is stated in Appendix 3, the alternate methods must be submitted to CDH for approval prior to their use by the facility. Trip and field blanks should always be taken in order to assure the accuracy of reported results. Explain how the Quality Assurance/Quality Control Procedures for the taking of trip or field blanks, found in Appendix 6, "will increase personnel chemical or radioactive exposure above ALARA levels".

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