File: Quadrex Permit

draft rm/jk 09-17-87

TO: Ashwin Patel

THROUGH: Satish Kastury

FROM: Roger Menendez

DATE: September 10, 1987

SUBJECT: Quadrex HPS Inc. TOP Application - DHRS Review Comments

Attached please find the review comments from Michael N. Stephens of the Department of Health and Rehabilitative Services (DHRS) on the Quadrex TOP application. Mr. Stephens divided his comments in two parts. Attachment 1 deals with radiation issues that are being addressed by DHRS. Attachment 2 addresses general discrepancies found in the permit application that need additional clarification.

Bill Stelz, John Griffin and I have reviewed DHRS' comments. We beleive they will be helpful in your review of the permit application. If you need further assistance or guidance in the review of these issues, please contact me at SC 278-0911. Thank you.

RM/jk

Attachments

cc: James H. Scarborough
Robert V. McVety
John Griffin
Bill Stelz

DOCKET # 12

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ATTACHMENT 1

1. Item 3.2, HM-1993-12 indicates that absorbent material is analyzed for gamma emitters and contamination detected above the Minimum Detectable Activity (MDA) is kept for decay or disposed.

   Quadrex does receive gamma emitters but, the majority of the radioactive materials received are tritium (H-3) and Carbon 14 (C-14). These isotopes are beta emitters only and will not be seen on a gamma ray detection system. Quadrex is also currently performing beta analysis although it is not indicated in their TOP application. DHRS is determining the adequacy of their radiation detection instrumentation in the renewal of their license.

2. Item 3.3, HM-1993-12 indicates potential reuse of absorbent material.

   DHRS will alow the reuse of non-contaminated absorbent material only. The reuse of contaminated absorbent material is not allowed. This is being addressed in Quadrex's renewal application.

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3. Items 6.1 and 6.2, HM-1993-12 indicates that drums which contained regulated vials are surveyed and swiped to assure that they are not contaminated prior to release. The swipe is counted using a Ludlum 177 "pancake" probe with a contamination action level of 1000 dpm/100 square centimeters.

   Pancake probes have a window thickness of at least 1.7 milligrams per square centimeter. This is the thinnest commercially available. This thickness is only 10% efficient for C-14 and does not detect H-3. This issue has been addressed in their renewal application and DHRS will evaluate alternative beta detection instrumentation. Currently they are performing liquid scintillation counting which is acceptable instrumentation.

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4. The efficiency of HEPA filters may be reduced by exposure to organic vapors such as those present at Quadrex. DHRS will consider this issue during renewal. Mr. Stephens does not know of how drastically the efficiency is reduced since it would depend on the type of organic vapor. Further investigation on this issue will be done. It is suggested that the HEPA filter efficiency is checked at some specified frequency. Another possibility is to stage the filters so that the organic vapors are removed before they get to the HEPA filter. Consideration needs to be given to the fact that, although Quadrex must satisfy our regulations as to the concentration of radioactive materials, exposure to these organic vapors which contain radioactive materials, exposure to these organic vapors which contain radioactive materials is probably more of a chemical health and safety hazard than a radiation hazard.

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ATTACHMENT 2

1. Possible discrepancy in the frequency drums awaiting processing are inspected.

   a) Part I page 17, indicates drums are inspected daily.
   b) Part I page 25, indicates drums are inspected weekly by LSV Manager.
   c) Contingency Plan page 40, indicates drums are inspected at least weekly.
   d) Part II page 64, indicates drums are inspected frequently, which is further elaborated to mean at a minimum weekly and daily in most instances.

2. Possible discrepancy in maximum height drums are stacked.

   a) Part II pages 61 and 64, indicates a maximum of two drums.
   b) Part II figure 12, HM-1993-25-A, indicates a maximum height of three drums.

3. Quadrex has some underground pipes that may be used to carry hazardous waste. No reference to this could be found in their TOP application. This is not relevant to DHRS regulations, but may be to DER regulations.