DEPARTMENT FOR HUMAN RESOURCES
COMMONWEALTH OF KENTUCKY
FRANKFORT 40601

BUREAU FOR HEALTH SERVICES
Office of Consumer Health Protection
275 East Main Street

June 17, 1975

Mr. Paul H. Lohaus
Agreements and Exports Branch
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Paul:

As requested, I am submitting the following information regarding the Radioactive Waste Disposal Site:

A. List of Licensee Actions Since the Six Month Report

1. The licensee appointed an environmental task force to evaluate the significance of our findings of radioactivity in the environment. This task force performed a rather comprehensive analysis of old environmental data as well as recent data and submitted a report of their study determinations. This report did not agree with our data in that the task force could not determine any increasing trends in radioactivity in the environment.

2. The licensee established a surface contamination study to determine the contribution, if any, from surface run off to the environment. This study did detect certain areas of surface contamination which have been removed.

3. The licensee evaluated the burial of tritium in this site. As a result, the licensee submitted an application for license renewal and enclosed a new procedure for the burial of tritium in concentrations greater than ten microcuries per milliliter to be contained in ceramic material.

B. List of Actions by the Department Since the Six Month Report

1. The Department coordinated and conducted the environmental design group which recommended to the Department the types of studies that are needed to assess the long range significance of the radioactivity detected in the environment.

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2. The Department has committed to implement the recommendations of the environmental design group.

3. The Department has increased its monitoring of the facility. Specifically, prior to the study the radiation laboratory was monitoring approximately twelve sample stations every month. Since the study we have been monitoring approximately thirty stations every two weeks.

4. The Department has been carefully evaluating the concentration of radioactivity to the environment from the stack effluent from the evaporator. As you are aware we have submitted data to your Agency and to the Kentucky Air Pollution Program to determine radionuclide restrictions on the stack effluent.

5. The Department has requested assistance in the applicability of MPC's for the determination of the significance of radioactivity detected in the environment from the Waste Disposal Facility. Letters regarding this question were sent to your Agency and to EPA.

6. The Department has evaluated the need for changes in the conditions of the Waste Disposal license in light of the findings of the six month report. As a result of this license review, the following amendments to the license are planned:

   a. Three sumps will be required in each trench rather than one.

   b. The burial of tritium in concentrations greater than ten microcuries per milliliter will be required to be contained in ceramic material.

   c. Radionuclide restrictions will be placed on the stack effluent from the evaporator.

You also requested a copy of the EPA stack monitoring data and the activity level in the tank farm berm water. This information is enclosed.

In addition, Gale Turi requested a copy of our map showing the specific trench locations in the completed areas. This map is also enclosed.

If you need additional information, please contact me.

Sincerely,

C Hardin

Charles M. Hardin
Manager
Radiation Control Branch

COPY

Mr. C. Leslie Dawson
Secretary for Human Resources
Commonwealth of Kentucky
Frankfort, Kentucky 40601

Dear Mr. Dawson:

The U.S. Geological Survey has been concerned with the potential problem of migration of waste products from radioactive waste burial grounds for several years. This concern has been expressed and demonstrated by the investigative studies made in cooperation with the Energy Research and Development Administration (ERDA), formerly the Atomic Energy Commission, on the migration of waste radionuclides from waste disposal sites located at the National Laboratories throughout the country. More recently, the Environmental Protection Agency has requested the cooperation of the USGS in making similar type studies at several of the state-owned burial sites which are licensed by the National Regulatory Commission. Under this joint EPA-USGS program, a field study was initiated in cooperation with the Kentucky Department of Human Resources during the 1975 FY at the Kentucky waste disposal site.

The Geological Survey is not a regulatory agency and has no legal responsibilities or authority for waste management, therefore, its investigations will be directed towards describing hydrogeological principles and processes. When the principles and processes involved in the migration of waste are properly identified and understood, the data will be useful to those governmental agencies who have regulatory and managerial responsibilities.

In the 1975 fiscal year, the Geological Survey initiated a program nationwide in scope, to study the principles and processes of radioactive waste migration. The Survey's five-year study will use field data from the state-owned burial sites and theoretical and laboratory solute transport data to construct predictive models for different hydrogeological environments. Waste solute transport models can be used to predict how fast and in what direction waste will move from burial sites. The data analyses and interpretation will develop better geologic and hydrologic criteria for use in evaluating waste burial sites. Completed studies will provide data that will be useful in the monitoring and management of existing sites.

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In Kentucky, the Geological Survey plans include expending 2 man-years of effort and 100 thousand dollars for each of FY 76 and FY 77 to drill and instrument observation wells at Maxey Flats. After the first two years, the Survey's effort would be reduced about one-half during data collection and interpretation.

A Geological Survey hydrologist will be stationed at Maxey Flats and will be available for technical consultation and coordination during any concurrent studies conducted by your department. Technical consultation and coordination between concurrent studies should be of mutual benefit and is highly desirable. We in the Survey, therefore, welcome the opportunity to work with your department and will be happy to assist you in your study as outlined above.

Sincerely yours,

/signed/ V. E. McKelvey (?)
Director, USGS