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RELATED CORRESPONDENCE
UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 16, 1985

DOCKETED
USNRC

John H. Frye, III, Chairman
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. James H. Cooney, Jr.
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
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OFFICE OF PUBLIC AFFAIRS
GENERAL INVESTIGATIVE
DIVISION
BRANCH

Dr. Peter A. Morris
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

In the Matter of
KERR-MCGEE CHEMICAL CORPORATION
(West Chicago Rare Earths Facility)
Docket No. 40-2061 ML, ASLEP No. 83-495-01-ML

Dear Administrative Judges:

This letter constitutes the NRC staff's report on the progress of preparation of the supplement to the Final Environmental Statement related to the decommissioning of the Rare Earths Facility, as requested in the Licensing Board's June 11, 1985 Memorandum and Order.

As described in the enclosed Argonne National Laboratory (ANL) memorandum, ANL has developed a methodology for a supplemental analysis of alternative sites for the West Chicago wastes that is independent of the alternative site analysis previously conducted by Kerr-McGee. The Staff has concurred in this methodology and ANL has commenced the analysis. As part of this analysis, the Staff and ANL have met in Chicago and Champaign with various State agencies to review maps, well logs, letter reports and other data from their files. This information, as well as other information available to ANL, is being used to identify the areas in Illinois which will be the focus of the Staff's process of identification of alternative sites (areas of approximately 25-100 square miles) for comparison to the West Chicago site for disposal of the Rare Earths Facility wastes.

ANL has also performed a preliminary analysis of the West Chicago site against the criteria for permanent waste disposal set forth in the Environmental Protection Agency's regulations in 40 C.F.R. Part 192. This analysis and an analysis of the West Chicago site against the criteria in the Commission's regulations in 10 C.F.R. Part 40, Appendix A are not yet complete and the

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July 9, 1985

TO: S. Tsai

FROM: J. Schubert

SUBJECT: Site Selection Process for Kerr-McGee Alternative Disposal Sites

In order to narrow an infinitely large population of potential disposal sites down to three or more candidate sites, we propose a three-step approach.

1. List all potential categories of waste disposal sites and narrow down to the three best.
2. Use State of Illinois maps, well logs, letter reports, and other GIS data to locate six potential areas (two areas for each category). These areas may be county or sub-county in size, depending on the extent and quality of the data base.
3. Visit and evaluate the six candidate areas. Based on field observations and further data collection, these six areas will be reduced in size by eliminating undesirable portions of each area. This will result in six candidate sites for detailed evaluation in the supplemental EIS document.

For each of these three steps, the criteria which were used for ranking and choosing, the weighting scheme of the criteria, and other aspects of the selection process will be fully documented.

Step 1. Choose Three Types of Waste Disposal Sites

Attached is a list of categories of disposal sites that are considered possible for receiving Kerr-McGee wastes. These candidate categories will be ranked from 1 (best candidates) to 3 (worst candidates) for three different broad factors:

- o Hydrology/Geology -- the hydrogeological aspects of the potential disposal categories for containing the waste leachates and minimizing subsurface transport of contaminants.
- o Social/Political -- population densities, current laws and regulations, and acceptance by public and government agencies.

July 9, 1985

- o Economics -- the transportation costs, costs of excavating trenches, availability of clay for liners and cap materials.

Once each category has been given a relative ranking, then a total of the three categories will yield an overall rank number for each waste disposal type. The three categories with the lowest total scores will be chosen for further evaluation.

Step 2. Select Six Potential Areas

A list of selection criteria and relative weighting scheme will be developed in order to determine "good" areas and "bad" areas for each of the three waste disposal categories that were chosen in Step 1. A trip to Champaign, Illinois, will be made to use maps, well logs, letter reports and other data that may be available from the Illinois State Geological Survey, Water Survey, and Natural History Survey. Much of this information is currently being entered into the State's computerized "Geographical Information System" (GIS). The available data will be evaluated and, through a gradual process, "bad" areas of the state will be eliminated and potentially "good" areas will be identified. Eventually, the list of "good" areas will be reduced down to two areas for each of the three candidate disposal types.

Step 3. Evaluate Candidate Areas

Once the six areas have been selected and approved by NRC, ANL staff will select "representative" locations and vehicle routes through the six areas so that observations can be made regarding geology, soils, topography, surface hydrology, private wells, population densities, transportation routes, parks and recreation areas, etc. A ten- to fourteen-day trip will be planned to visit these six areas and to gather available information from local sources (e.g. source of water supplies for local municipalities and farms). Before the trip is taken, a complete list will be compiled of the data that needs to be collected.

Upon return to Argonne, these data will be compiled in a matrix-type table, comparisons between the areas will be made (criteria for comparison and evaluation have not yet been defined). In addition, the six areas will be reduced in size by eliminating any portions of the areas that do not appear feasible for a disposal site.

The alternative disposal sites will be the focus of evaluation for the remainder of the supplemental EIS analysis work. The use of the term "site" does not refer to a specific parcel of land; for our purposes, "site" will refer to a small area (perhaps 25-100 sq. miles) that appears to be relatively homogeneous.

JS:mz

cc: A. M. Clarke
P. Merry-Libby

List of Potential Off-Site Disposal Categories for
Kerr McGee Thorium Wastes

Relative Ranking ^a				
	Hydro./ Geol.	Soc./ Pol.	Econ.	Total ^b
<u>I. Illinois Sites</u>				
A. Existing LLW Disposal Sites				
1. Sheffield	_____	_____	_____	_____
B. New Ill.-Ky. LLW Disposal Site	_____	_____	_____	_____
C. U.S. DOE Facilities				
1. Argonne National Laboratory				
2. Fermi Laboratory				
D. Abandoned Surface Mines				
1. Coal	_____	_____	_____	_____
2. Clay/Shale	_____	_____	_____	_____
3. Limestone/Dolomite	_____	_____	_____	_____
4. Sand/Gravel	_____	_____	_____	_____
E. Active Surface Mines				
1. Coal	_____	_____	_____	_____
2. Clay/Shale	_____	_____	_____	_____
3. Limestone/Dolomite	_____	_____	_____	_____
4. Sand/Gravel	_____	_____	_____	_____
F. Abandoned Underground Mines				
1. Coal	_____	_____	_____	_____
2. Fluorite	_____	_____	_____	_____
3. Lead/Zinc	_____	_____	_____	_____
G. Active Underground Mines				
1. Coal	_____	_____	_____	_____
H. Undeveloped Land or Farmland	_____	_____	_____	_____
I. Other Suggestion	_____	_____	_____	_____

Relative Ranking ^a				
	Hydro./ Geol.	Soc./ Pol.	Econ.	Total ^b
II. <u>Out-of-State Sites</u>				
A. Existing Commercial LLW Disposal Sites				
1. Hanford, Washington	_____	_____	_____	_____
2. Beatty, Nevada	_____	_____	_____	_____
3. Barnwell, SC	_____	_____	_____	_____
B. Remedial Action Sites				
1. FUSRAP Sites	_____	_____	_____	_____
2. UNTRAP Sites	_____	_____	_____	_____
3. Surplus Facilities Management Program	_____	_____	_____	_____
4. Grand Junction Remedial Action Program	_____	_____	_____	_____
C. U.S. DOE Reservations (e.g., Oak Ridge, EG&G, Nevada Test Site, Savannah River)				
_____	_____	_____	_____	_____
D. Surface Uranium Mine or Mill Sites				
_____	_____	_____	_____	_____
E. Underground Mines (active or abandoned)				
_____	_____	_____	_____	_____
F. Undeveloped Land or Marginal Farmland				
_____	_____	_____	_____	_____
G. Other Suggestion				
_____	_____	_____	_____	_____

a. Relative Ranking Scale for Categories Listed Above

- 1 = best potential
- 2 = intermediate potential
- 3 = worst potential
- ? = unsure ranking

- b. Total Score is calculated by multiplying a weighting factor times the score recorded in each ranking category and then summing the weighted scores.

Name

Discipline

Date

To calculate a total score, a weighting factor must be multiplied times each of the three ranking categories. A high weighting factor gives a heavier emphasis to the associated category. Listed below are the three categories used for ranking; please fill in how you feel these categories should be weighted relative to each other. The weighting factors should be in the range of 1 to 3.

	<u>Weighting Factor</u>
Hydrological/Geological	_____
Social/Political	_____
Economic	_____