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UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of)
KERR-MCGEE CHEMICAL CORPORATION)
(West Chicago Rare Earths Facility))

Docket No. 40-2061-ML
ASLBP No. 83-495-01-ML

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MEMORANDUM OF THE PEOPLE
OF THE STATE OF ILLINOIS IN OPPOSITION
TO MOTION FOR SUMMARY DISPOSITION
ON THE REMAINING CONTENTIONS

NEIL F. HARTIGAN
Attorney General
State of Illinois

OF COUNSEL:

MICHELLE D. JORDAN, Chief
MATTHEW J. DUNN, Deputy Chief
DOUGLAS J. RATHE
J. JEROME SISUL
WILLIAM D. SEITH
RICHARD A. VERKLER
Assistant Attorneys General
Environmental Control Division
100 West Randolph Street, 12th Flr.
Chicago, IL 60601 (312) 814-2550

January 19, 1990

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ON THE REMAINING CONTENTIONS

The People of the State of Illinois ("People") tender this memorandum in response to Kerr-McGee's Motion for Summary Disposition on the Remaining Contentions. This memorandum incorporates a statement of facts as to which there is a genuine dispute as well as a number of exhibits which are offered in support of the People's position.

STANDARD OF REVIEW

Motions for summary disposition are analogous to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure, and federal court decisions interpreting Rule 56 may be relied upon in NRC proceedings. Texas Utilities Generating Company (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-82-17, 15 NRC 593, 595 (1982). Under both practices, the mere existence of a material issue of fact, whether raised by the opponent or by a gap in the movant's showing, defeats the motion at least in part and entitles the opponent to a hearing. Carolina Power & Light Company (Shearon Harris Nuclear Plant,

Units 1 and 2), LBP 84-7, 19 NRC 432, 437 (1984). Summary judgment is also inappropriate even where the parties agree on the basic facts, but disagree about the inferences that should be drawn from those facts. See, e.g., International Union of Bricklayers v. Martin Joska, Inc., 752 F. 2d 1401, 1405 (9th Cir., 1985). The movant, and not the opposing party, has the burden of showing the absence of any disputed issue. Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB -443, 6 NRC 741, 753-4 (1977).

To defeat a motion for summary disposition, the party opposing the motion need not show that he would prevail on the factual issues, but only that there are such issues to be tried. Pacific Gas & Electric Co. (Stanislaus Nuclear Project, Unit No. 1), LBP-77-45, 6 NRC 159, 163 (1977). Triable issues can be raised not only by evidence or argument that directly and logically challenges the basis for summary disposition, Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 & 2), LBP-82-114, 16 NRC 1909, 1913 (1982), but also by illustrating a gap in the movant's showing. Carolina Power & Light Company (Shearon Harris Nuclear Plant, Units 1 and 2), LBP-84-7, 19 NRC 432, 437 (1984). Sufficient reason exists to hold a hearing whenever there is enough doubt in the record to require "reasonable minds to inquire further." Dairyland Power Cooperative (LaCross Boiling Water Reactor), LBP-82-58, 16 NRC 512 (1982); Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), LBP-83-46, 18 NRC 218, 223 (1983).

The People will show that Kerr-McGee has failed at every turn to meet the standards required of it under these well established principles. As a consequence, summary disposition must be denied as to each of the remaining contentions.

I. Contention 2(a)(1)

Contention 2(a)(1) provides:

With respect to levels of inorganic contaminants in the on-site wastes, the applicant has conceded (Stabilization Plan 3.43) that because the sludge and tailings piles are non-homogeneous, averaging the results of the samples does not yield numbers which are necessarily representative of the mass of the wastes. The applicant did, however, use averages in calculating the concentrations of inorganic contaminants released from the disposal cell. In order to provide conservative and reliable estimates of dispersion and dilution effects, the applicant should base its calculation on hot spots in the wastes.

There are several issues of material fact remaining with respect to Contention 2(a)(1). First, the State disputes Kerr-McGee's claim that its sampling of the wastes at the West Chicago site was either "exhaustive" or "random". Kerr-McGee's own report notes that samples were "screened" prior to analysis. Kerr-McGee's "screening" is not explained. There is no way for the State or the Board to know whether Kerr-McGee's "screening" was appropriate, and if so, whether it was done in accordance with appropriate protocol. The State notes that at Kerr-McGee's direction, 906 EP toxicity tests were performed, but only 612 of those samples were in used in its analysis of the wastes. Enno Affidavit, par. 5 (Exhibit C). Why were nearly 300 samples excluded from analysis? What hazardous wastes appear in those

samples that Kerr-McGee is attempting to hide? Kerr-McGee has provided no answers to these questions.

Second, the State disputes Kerr-McGee's claim that the "mixing" or "averaging" of wastes will eliminate site hazards. Kerr-McGee's mixing theory ignores clear evidence of channelized flow at the site. (Discussed in Section II., below).

Finally, the State cannot take any comfort in Kerr-McGee's calculation and use of "composite" leachate and "maximum" leachate. Kerr-McGee's calculation is based upon samples that were screened for unexplained reasons using undefined protocol. *Id.*, par. 4. The State and this Board have no way of assessing Kerr-McGee's calculations without the raw data from the unscreened samples.

Accordingly, there are significant issues of material fact remaining that preclude summary disposition on Contention 2(a)(i).

II. Contention 2(a)(ii)

Contention 2(a)(ii) provides:

The applicant's dispersion model assumes uniform dispersion of leachate from the disposal cell and does not take into account the possibility of channelized flow. Given the historical experience concerning channelized flow at the Sheffield, Illinois low-level radioactive waste disposal site, and given the inhomogeneous character of the West Chicago Kerr-McGee subsurface, the possibility and impact of channelized flow must be addressed.

Significant issues of material fact remain with respect to Contention 2(a)(ii). The State disputes Kerr-McGee's claim that the West Chicago site differs from the Sheffield site with respect to parameters that affect channelized flow. Enno Affidavit, par. 11 (Exhibit C). The State notes that channelized flow occurs, to some degree, in every aquifer. The extent of the channelized flow below a site is dependent on three conditions:

1. The environment of deposition of the sediments;
2. Selective secondary modification to those sediments; and
3. Hydraulic conditions of the site.

The environment of deposition of the E-stratum at the Kerr-McGee site is glacial outwash alluvium. The environment of deposition of the Toulon sand member at the Sheffield low level radioactive waste site is identical to the Kerr-McGee site. Id., par. 11.

The sand units at both sites are semi-confined to unconfined. Each sand unit acts as an underdrain for its respective site. Both sand units are located near the hydraulic fringe influences of bedrock valleys. In short, the similarities between the sites are greater than their differences.

In addition to site similarities, Kerr-McGee has ignored the drastic variability in pump test data. The pump and slug test data submitted for the E-stratum indicates that there are six fold variations in the hydraulic conductivity across the

site. This is indicative of channelized flow in the E-stratum. Id., par. 12.

The potential impact of channelized flow on Kerr-McGee's modeling is drastic. If the groundwater migrates from the site through preferential flow channels, the dilution/dispersion effects anticipated by Kerr-McGee would be substantially reduced. Kerr-McGee's model is not cable of characterizing this type of aquifer behavior. Id., par. 13.

There are significant issues of material fact remaining that preclude summary disposition on Contention 2(a)(ii).

III. Contention 2(d)

Contention 2(d) provides:

The applicant's proposed groundwater monitoring system is insufficient to detect the kind and quantity of contaminant migration. Among other things, the stabilization plan does not describe the methods for sample collection, preservation, analysis, and custody; the plan unhelpfully states only that "standard procedures will be followed for sampling and analysis." Plan, 7-3. Similarly, the plan does not describe how groundwater data obtained from samples will be statistically analyzed; without proper statistical analysis, significant changes in groundwater quality can go undetected. (The plan states only that "Results will be examined for trends by a professional hydrologist." Id.) Nor does the plan specifically indicate the depths, locations, and screen length of monitoring wells; without this information the applicant cannot show that the screen settings are related to the probably path contaminants would take as they migrated off-site. Nor is the number of wells certain.

Furthermore, the proposed system does not include analysis for organic waste constituents or indicators of organic waste constituents. Such analysis must be undertaken because

residuals of organic solvents used in the industrial process may be present in leachate.

The applicant has not shown that it will install a background groundwater monitoring system capable of establishing the quality of groundwater which has not already been contaminated by leachate from the site. Groundwater contamination maps in the FES indicate that pollution originating at the Kerr-McGee site spreads off-site in all directions. Samples from improperly located background wells may yield water that has been contaminated by site pollutants rather than water that is representative of the general area.

The applicant does not propose to monitor groundwater for an adequate length of time following closure. Regulations under the Resource Conservation and Recovery Act, 42 U.S.C. SS 6901 et seq. ("RCRA"), require, in this case, post-closure monitoring for 60 years. However, given the fact that the proposed disposal site is in the area, RCRA's monitoring requirements should be treated as a minimum only.

There are significant issues of material fact with respect to Contention 2(d). The first deals with the adequacy of Kerr-McGee's groundwater monitoring plan. Kerr-McGee's proposal has been reviewed extensively by the Illinois Environmental Protection Agency ("IEPA"). It is the opinion of the IEPA that if the Kerr-McGee site were being proposed for a comparatively benign sanitary landfill, Kerr-McGee's monitoring plan would not be approved. Enno Affidavit, par. 15. But Kerr-McGee has not proposed a sanitary landfill. Instead, it is proposing the burial of several thousand cubic feet of hazardous waste.

Secondly, Kerr-McGee's monitoring program proposes the use of monitoring wells that are kinked and of questionable integrity. Enno Affidavit, par. 16 (Exhibit C). It also proposes the use of existing wells for background sampling. Kerr-McGee

has not addressed the probability that all of the existing wells have influenced the temporary storage of wastes at the site for the past several years. Id., par. 17.

Thirdly, Kerr-McGee has ignored evidence of contamination in the A and C-strata. Id., pars. 18, 19. Further, Kerr-McGee's plan neglects the fact that organic solvents were used at the site for ore processing, as well as copper, cyanide and zinc. Id., par. 20. In short, Kerr-McGee's monitoring plan ignores evidence of existing contamination and is limited in constituents tested for and location of contamination.

Finally, Kerr-McGee proposes a relatively short monitoring period of 10 years. A ten year monitoring period provides very little protection against long term decay of the disposal cell. Id., par. 21. The chance of leakage from any cell is statistically reduced during the first ten years when it is still new. No doubt Kerr-McGee had those statistics in mind when it proposed the 10 year limit on its monitoring responsibilities. Sampling results already show the existence of hazardous waste at the site that fall under RCRA. If analysis of all of the raw data collected by Kerr-McGee demonstrates that RCRA hazardous wastes are being deposited in the cell, then all of the RCRA monitoring requirements apply.

There are significant issues of material fact remaining that preclude summary disposition on Contention 2(d).

IV. Contention 2(h)

Contention 2(h) provides:

The decommissioning proposal does not include specific and adequate measures for excluding human beings from the site over the long term. Given the 14-billion-year half-life of thorium, the NRC's acknowledgment that perpetual care of the site will be necessary, and the site's proximity to residences, commercial establishments, and public schools, discussion of such measures is crucial to evaluating the feasibility of onsite disposal.

Kerr-McGee's argument with respect to this contention boils down to two theories, neither of which are buttressed by supporting affidavits: first, that the thickness of the cell cover will make it unlikely that casual digging would proceed far enough to penetrate the wastes, and second, that the appearance of the cell would serve to alert intruders that the cell is not a natural formation. These theories are based upon two unstated but nonetheless crucial assumptions: that intruders naturally eschew man-made structures, and that "casual digging" will occur in a vacuum. Both of these assumptions are erroneous.

The appearance of the cell cover will not serve to exclude humans from the site over the long term. To the contrary, the presence of uniformly thick layers of topsoil, cobbles, sand and clay will actually invite intrusion by people seeking a ready-made source for these materials. Thiers Affidavit, par. 5 (Exhibit A). In addition, the fact that West Chicago is located in a heavily populated area will greatly increase the probability of intrusion. Id. Indeed, Kerr-McGee has failed to keep intruders off the site in the past, even in the face of determined

efforts to prevent such intrusions from occurring. Denny trial transcript, pp. 171-208; Harris trial transcript, pp. 1169-73 (Exhibits D and E). The frequency of human intrusion will only increase once active security measures are discontinued.

Secondly, the thickness of the proposed cover does not assure that intrusion into the wastes will not occur. Although "casual digging" may not by itself expose and spread the tailings, the combination of casual digging and rainfall surely will. Thiers Affidavit, par. 5 (Exhibit A). Surface runoff will result in the formation of gullies at points where digging has occurred. Id. Once initiated, gullies will continue to grow until they have reached a point well below the upper surface of the wastes. Id. Thus, casual digging will inevitably lead to intrusion on the wastes themselves.

Kerr-McGee has not and cannot point to any measures it will take to exclude humans from the site over the long term. Instead, it would have this Board believe that the design of the cell itself is sufficient to prevent such intrusions from occurring. The People submit that a genuine dispute exists not only as to the assumptions made by Kerr-McGee in reaching this conclusion but also as to the inferences which can be drawn from facts which are not in dispute. Summary disposition of this contention must therefore be denied.

V. Contention 2(1)

Contention 2(1) provides:

The applicant has not demonstrated that it will adequately control radioactive dust releases from both mobile and stationary

sources during stabilization activities, or that the applicant's dust control measures will achieve NRC's ALARA requirement.

At the outset, it should be noted that Kerr-McGee has not supported its motion with respect to contention 2(1) by affidavit and that its entire argument is based on the materials contained in Volume IX of the Engineering Report. The company's motion with respect to this contention must therefore stand or fall on the strength of the statements set forth in that Volume.

According to Volume IX, emissions of dust are to be controlled through the use of water sprays, chemical dust suppressants, and liquid asphalt dust-palliative treatments. Unfortunately, the Report makes liberal use of such qualifiers as "if conditions warrant", "as condition require", "as required" and "as conditions warrant." IX Eng. Rep. 9-3, 9-18, 9-24, 9-25. Since the Report does not quantify the level of particulate emissions necessary to trigger dust control measures, one can only assume that the decision to use them will be left to the vagaries of individual discretion. Moreover, the Report merely calls for "periodic" monitoring of dust emissions. IX Eng. Rep. 6-23. The scope and frequency of the company's monitoring plans are left entirely to the imagination. The People submit that Kerr-McGee's "assurances" with reference to dust control are so vague as to be meaningless.

Secondly, the Engineering Report makes no mention whatsoever of the word "opacity." Since State regulations prohibit the emission of particulate matter from exceeding specified opacity limits (Exhibit G), a plan to monitor fugitive emissions

for opacity is not only necessary but critical. Kerr-McGee cannot correct a problem it is not even prepared to identify.

Finally, Section 5.2.2 of the SFES expressly states that the loading and unloading of wastes should be avoided during high wind conditions. Volume IX does not contain any plan for the cessation of activities during high wind conditions.

The People submit that the evidentiary material Kerr-McGee relies upon to support its motion with respect to contention 2(1) falls well short of "clearly demonstrating" that it will adequately control dust releases during stabilization activities, and that further inquiry is needed before the Board can be in a position to rule on this contention. At the very least, the People have clearly shown that reasonable minds can differ on the inferences arising from the facts set forth in the Engineering Report. As a consequence, summary disposition on contention 2(1) must be denied.

VI. Contention 2(m)

Contention 2(m) provides:

The applicant has not demonstrated that radiological air hazards will be adequately monitored after closure. Type and model of instrumentation, location of monitoring points, and frequency of reading or sample collection are not discussed. Because of the demographic setting of the proposed site, adequate post-closure radiological air monitoring for an appropriate time period must be carried out.

On December 15, 1989, the United States Environmental Protection Agency promulgated new regulations which require, in part, post-closure monitoring of radon-222 flux from mill tailing

impoundments. The regulations, which are codified in 40 C.F.R. Part 61, Subpart T, became effective immediately. 54 Fed. Reg. 51654 (Dec. 15, 1989). A copy of Subpart T is attached to this memorandum as Exhibit F.

40 C.F.R. 61.223(a) specifically provides that post-closure testing shall be in accordance with "the procedures described in 40 C.F.R. Part 61, Appendix B, Method 115, or other procedures for which EPA has granted prior approval." 54 Fed. Reg. at 51702 (Exhibit F). Among the highlights of Method 115 are:

1. a requirement that a minimum of 100 measurements be taken after disposal (Method 115, Section 2.1.3);
2. a requirement that measurements not be taken within 24 hours of a rainfall (Method 115, Section 2.1.4(a));
3. a requirement that measurements not be performed if the ambient temperature is below 35°F or if the ground is frozen (Method 115, Section 2.1.4(c));
4. a requirement that radon flux measurements involve the adsorption of radon on activated charcoal in a large-area collector (Method 115, Section 2.1.6); and
5. a requirement that radon collected on the charcoal be measured by gamma-ray spectroscopy (Method 115, Section 2.1.6).

A cursory review of Volume XI of the Engineering Report reveals that none of the requirements of Subpart T or Method 115 are even addressed, much less met by Kerr-McGee's post-stabilization air-monitoring plan. Kerr-McGee is not entitled to summary disposition on this contention as a matter of law.

VII. Contention 2(o)

Contention 2(o) provides:

The applicant has not demonstrated that the disposal onsite of 11,000 cubic feet of rare earth compounds will not harm the environment. The applicant must address the toxicity and mobility of these compounds as well as their potential effect on the clay liner.

There are significant issues of material fact with respect to Contention 2(o). Kerr-McGee asserts that the deposit of rare earths at the site will not present a hazard because they will be mixed with other wastes at the site. Once again, Kerr-McGee proposes that we use dilution to solve its pollution. As previously discussed in Sections I and II, Kerr-McGee's premises in this regard are misplaced.

VIII. Contention 2(q)

Contention 2(q) provides:

Based on the calculations in the FES (Table 5.5), the applicant has not shown that during stabilization activities it will meet applicable radiological exposure and emission standards, because unjustifiable assumptions have been made which effectively minimize the calculated dose. Specifically:

- i) The FES assumes that the individual at the nearest residence will spend only 10 percent of his time outdoors. However, since the applicant's earth-moving activities are planned for the warm months, it is unlikely that individuals, especially children, will spend 10 percent of their time outdoors. Underestimation of outdoor time results in underestimation of dose received.
- ii) The FES assumes that radon and thoron will be uniformly released over eight weeks of earth-moving operations. To the contrary, releases will most likely occur as puffs of high concentrations when

crusted waste materials are breached. The assumption of uniform release serves to minimize the calculation of dose received.

Kerr-McGee's argument with reference to this contention is based entirely upon conclusions set forth in Table 5.11 of the SFES. The People submit that these conclusions do not entitle Kerr-McGee to summary disposition.

The SFES does not, as alleged, properly assess the radiological impacts associated with the stabilization period. According to the Affidavit of David E. Bernhardt, the dose estimates for individuals set forth in Table 5.11 are based on annual as opposed to 50-year committed doses and do not account for the dose a person would receive in subsequent years from exposure to radiation in the subject year. Bernhardt Affidavit, pars. 4 and 6 (Exhibit B). The use of annual as opposed to committed doses inherently underestimates the total dose for the year of exposure. Id., par. 6. Had those doses been reported as committed doses, it is probable that the requirements of 40 C.F.R. 190 would not have been met. Id., par. 7.

In addition to the above, the SFES does not sufficiently identify the raw data and assumptions used in calculating the dose estimates. Id., pars. 4-9. As a consequence, the accuracy and validity of those conclusions cannot be verified.

It is clear from the materials provided in support of this motion that the conclusions set forth in the SFES as well as in paragraph 4 of the Chambers Affidavit are not supported by facts essential to establish those conclusions. It is also just

as clear that summary disposition cannot be granted on this contention unless and until those facts are tendered. The Board has stated in no uncertain terms that "on ultimate issues of fact, we must see the evidence from which to reach our own independent conclusions." Cleveland Electric Illuminating Company, supra, 17 NRC at 62. Ruling otherwise would only abrogate the Board's responsibility as judges by "substituting the staff's judgment for our own." Id.

The People submit that summary disposition must also be denied on contention 2(q).

IX. Contention 2(r)

Contention 2(r) provides:

The applicant did not conduct any tests utilizing representative tailings solutions and representative clay materials to determine whether significant deterioration of permeability or stability properties will occur in the proposed clay liner. Indeed, the applicant has not yet decided what type of clay to use at the site, thus making such tests impossible.

Volume VII of the Engineering Report states that the addition of 80 pounds of Ca(OH)_2 per ton of tailings is the recommended method of preparing the tailings for disposal. VII Eng. Rep. 7-10. However, there is no evidence whatsoever that the tests run by Kerr-McGee used this concentration of lime. Likewise, there is also no evidence that the recommended concentration of lime would have produced the pH levels described in paragraph 5 of Dr. Grant's Affidavit. Kerr-McGee has therefore

failed to present this Board with any factual basis for determining whether the tests described in that Affidavit utilized representative tailings solutions.

Contrary to Kerr-McGee's assertions, serious doubt exists as to whether exposure to leachate will result in the deterioration of the clay liner. Had the test used a truly representative tailings solution, the results could have predicted that the liner would fail, or worse, that clay permeability will decrease to the point of creating a "bathtub effect." Thiers Affidavit, par. 6 (Exhibit A). The effects of the leachate on the liner are therefore still very much in dispute.

The People submit that Kerr-McGee has failed to eliminate any real doubt as to whether exposure to leachate from the wastes will result in the deterioration of the clay liner. This Board will have no way of determining whether the proposed liner can withstand this exposure unless and until tests are run using representative tailings solutions. Since further inquiry is required before the Board can make an informed decision on this contention, summary disposition must be denied.

CONCLUSION

In view of the above, the People submit that summary disposition must be denied as to each of the remaining contentions.

Respectfully submitted,

PEOPLE OF THE STATE OF ILLINOIS

NEIL F. HARTIGAN
Attorney General
State of Illinois

By: Richard A. Verkler
RICHARD A. VERKLER
Assistant Attorney General
Environmental Control Division

By: William D. Seith
WILLIAM D. SEITH
Assistant Attorney General
Environmental Control Division

OF COUNSEL:
MICHELLE D. JORDAN, Chief
MATTHEW J. DUNN, Deputy Chief
DOUGLAS J. RATHE
J. JEROME SISUL
Assistant Attorneys General
Environmental Control Division
100 West Randolph Street, 12th Flr.
Chicago, IL 60601 (312) 814-3094

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**STATEMENT OF MATERIAL FACTS AS
TO WHICH THERE IS A GENUINE ISSUE TO BE HEARD**

Contention 2(a)(i)

1. The State agrees that Kerr-McGee has conducted a program to characterize the materials at the Kerr-McGee site. The State does not agree that Kerr-McGee's program was extensive nor that all the wastes have been located and characterized. Enno Affidavit, pars. 4, 5 (Exhibit C).

2. The State cannot agree that sampling and analyses conducted by Kerr-McGee provides any level of confidence. Kerr-McGee has screened the data using undefined procedures. Without raw data, the State cannot confirm that Kerr-McGee's data are accurate. Id., par. 4.

3. Kerr-McGee's assertion that waste materials from the cell will be mixed and thereby "averaged", erroneously assumes a point source release. Id., pars. 7, 8, 9, 11, 12, 13.

4. The State cannot agree that Kerr-McGee's "composite leachate" and "maximum leachate" are what Kerr-McGee asserts since samples was screened using undefined procedures. Id., par. 4.

5. Kerr-McGee's assertion that groundwater impacts are not affected by inhomogeneity of the wastes ignores existing evidence of channelized flow and assumes exaggerated dilution factors. Id., pars. 9, 11.

Contention 2(a)(ii)

6. The State agrees that Kerr-McGee has described its groundwater modeling in the Engineering Report.

7. Simply put, Kerr-McGee's groundwater model fails to take evidence of channelized flow into account. The variations in aquifer properties "accommodated" in Kerr-McGee's model do not account for six fold variations in hydraulic conductivity across the site. Id., pars. 11, 12, 13.

8. The geology and hydrogeology of the glacial sediments at the West Chicago site do not differ from the Sheffield site with respect to parameters that affect channelized flow. Id., par. 11.

9. The sands at both the Kerr-McGee and Sheffield sites act as an underdrain. Id., par. 11.

10. The State agrees that the geology and hydrogeology of the West Chicago site is described in the Engineering Report.

11. The pump and slug test data submitted by Kerr-McGee for the E-stratum indicates that there are six fold variations in the hydraulic conductivity across the site. These variations are indicative of channelized flow. Id., par. 12.

12. Kerr-McGee's own data provides evidence of channelized flow.

Contention 2(d)

13. The State agrees that Kerr-McGee's post-closure monitoring program is outlined in the Engineering Report.

14. The State agrees that Kerr-McGee's groundwater monitoring plan described its plan for monitoring.

15. The State agrees that under its plan, Kerr-McGee intends to monitor groundwater for 10 years.

16. The State agrees that under its plan, Kerr-McGee will monitor radiological and chemical parameters for 10 years.

17. The State does not agree that Kerr-McGee's sampling was exhaustive and was negative for organics. Kerr-McGee has screened its samples and failed to properly test for organics that were used in the processing of ore at the site. Id., pars. 17, 20.

18. Kerr-McGee's sampling plan is inadequate. It does not call for monitoring of the A and C-strata and relies on the use of wells with questionable integrity. Id., pars. 16, 17, 18, 19.

19. Kerr-McGee's monitoring is limited to 10 years. Kerr-McGee's plan will not test for cell's integrity in the long term. Id., par. 21.

20. Kerr-McGee's monitoring program will not assure the protection of A and C-strata and will not assure protection of all groundwater in the long term. Id., par. 20.

Contention 2(h)

21. The shape and layering of the cell cover will not serve to exclude human beings from the site over the long term. To the contrary, the presence of uniformly thick layers of topsoil, cobbles, sand and clay will actually invite intrusion by people seeking a ready-made source of these materials. Their Affidavit, par. 5 (Exhibit A). In addition, the fact that West Chicago is in a heavily populated area will greatly increase the probability of intrusion. Id. Indeed, Kerr-McGee has failed to keep intruders off the site in the past, even in the face of determined efforts to prevent such intrusions from occurring. Denny trial transcript, pp. 171-208; Harris trial transcript, pp. 1169-1173 (Exhibits D and E). The frequency of human intrusion onto the site will only increase once the site is abandoned.

22. The depth and nature of the proposed cover give no assurances that intrusion into the wastes will not occur. Because the cover is not designed to resist probable maximum precipitation (PMP), gullies will form, exposing the cobbles underlying the topsoil, and, in turn, the sand, clay and tailings buried below. Thiers Affidavit, par. 5 (Exhibit A). The exposure of any of these materials may be so attractive to passers-by that digging may proceed beyond the "casual stage" to a depth determined by the needs, desires and persistence of the intruders. Id. In addition, even "shallow" digging or rutting

caused by dirt bikes will accelerate the formation of gullies by rains and runoff. Id. These gullies will continue to grow toward an equilibrium condition well below the upper surface of the wastes. Id.

Contention 2(1)

23. The People admit that Kerr-McGee's program for dust control during stabilization is outlined in Volume IX of the Engineering Report. However, the people deny any inference that Kerr-McGee's demolition experience somehow imbues it with special ability to control dust released during the handling of 400,000 cubic yards of waste material.

24. The People admit that Volume IX of the Engineering Report contemplates the use of water sprays and tarpaulins as a means of controlling dust emissions. The People also admit that certain unspecified chemical dust suppressants and liquid asphalt dust-palliative treatments will be "considered" for use. However, the People deny that Kerr-McGee's plans for monitoring the air will assure that excessive releases will be promptly detected and corrected for the following reasons:

a. Volume IX of the Engineering Report does not objectively quantify the level of particulate emissions necessary to trigger dust control procedures. The decision to use these procedures is therefore left to individual discretion. In addition, the Report merely calls for "periodic" monitoring of dust emissions. IX Eng. Rep. 9-23. The scope and frequency of the company's monitoring plans are left completely to the imagination.

b. 35 Ill. Adm. Code 212.123 sets forth opacity limitations for emissions of particulate matter (Exhibit G). Kerr-McGee has failed to demonstrate that dust releases will not exceed the opacity limitations imposed by this regulation. Moreover, Kerr-McGee has not indicated that it plans to monitor dust releases for opacity. Kerr-McGee cannot correct a problem it is not even prepared to identify.

c. Section 5.2.2 of the SFES admonishes that the loading and unloading of wastes should be avoided during high wind conditions. Volume IX of the Engineering Report does not contain any provision for the cessation of activities during high wind conditions.

Contention 2(m)

29. The People deny there is no legal requirement that Kerr-McGee conduct any post closure air monitoring to assure performance of the cell cover.

The Environmental Protection Agency recently promulgated new regulations governing the post-closure monitoring of radon-222 flux from mill tailing impoundments. 54 Fed. Reg. 51654, 51702-03 (Dec. 15, 1989) (Exhibit F). These regulations, which are codified in 40 C.F.R. Part 61, Subpart T, became effective on December 15, 1989. 54 Fed. Reg. at 51654. Unlike the regulations referred to in footnote 12 of Kerr-McGee's motion, Subpart T has not been stayed.

30. The People admit that Kerr-McGee's post closure radiological air monitoring plan is set forth in Volume XI of its Engineering Report. However, the People deny that the measures described therein are in accordance with those required by 40 C.F.R. Part 61, Appendix B, Method 115.

32. Kerr-McGee's air monitoring plan is fatally defective because it fails to comply with 40 C.F.R. Part 61, Subpart T and Appendix B, Method 115. Fed. Reg. at 51702-03, 51709-11.

Contention 2(o)

33. The State agrees with paragraph 33 of Kerr-McGee's statement of facts.

34. The State does not agree that since the volume of rare earths is similar than waste thorium at the site, that mixing of the wastes should be considered acceptable.

35. The State is not convinced that Kerr-McGee's treatment of the rare earths will result in "negligible" concentrations of rare earths in the leachate.

36. The State does not agree with Kerr-McGee's assertion in paragraph 36.

37. The level of toxicity of any given constituent varies with concentration.

38. There is indeed a legitimate concern with respect to the potential release of rare earth compounds.

Contention 2(g)

39. The People deny that the SFES properly addressed the radiological impacts associated with the stabilization period for the following reasons:

a. The SFES does not sufficiently identify the raw data and assumptions used in calculating the dose estimates set forth in Table 5.11. Bernhardt Affidavit, pars. 4-5 (Exhibit B). As a consequence, there is no way to verify the accuracy and validity of staff's conclusions. Id. In addition, it appears that erroneous assumptions may have been used in performing these calculations. Id.

b. The dose estimates for individuals set forth in Table 5.11 are based on annual as opposed to 50-year committed doses and do not therefore account for the dose a person would receive in subsequent years from exposure to radiation in the subject year. Id., pars. 4 and 6. The use of annual as opposed to committed doses inherently underestimates the total dose for the year of exposure. Id., par. 6. Had the doses been reported as committed doses, it is unlikely that the requirements of 40 C.F.R. 190 would have been met. Id., par. 7.

40. Paragraph 4 of the Chambers Affidavit fails to indicate the raw data used in the Affiant's calculations. In addition, the Affidavit does not set forth the assumptions used in making those calculations beyond the assumption that the maximally exposed individual is outside 100 percent of the time.

As a consequence, there is no way to verify the accuracy and validity of the Affiant's conclusions.

Contention 2(r)

43. The People admit that the clay liner of the disposal cell is described in Volume IV of the Engineering Report.

44. The People admit that the Report states that clay utilized for the liner will be near surface clays presently existing at the disposal site.

45. The disposal cell design relies on the clay liner to impede the migration of leachate into the groundwater. The clay liner facilitates control of moisture, density and permeability. IV Eng. Rep. 4-1.

46. The tests conducted by Kerr-McGee to assess the impacts of leachate on the clay liner contrast with the approach recommended in Volume VII of the Engineering Report, which is to add 80 pounds of lime per ton of tailings. Thiers Affidavit, par. 6 (Exhibit A). The lime added to the leachate solutions should have been limited to this concentration. Id. Had representative tailing solutions been used in the test, the results could have shown that the liner would fail, or that clay permeability could decrease over the long term, creating a bathtub effect. Id.

CERTIFICATE OF SERVICE

DOCKETED
USNRC

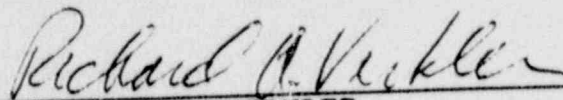
I, RICHARD A. VERKLER, an attorney in this case do '90 JAN 23 A8:24

certify that on the 19th day of January, 1990, I caused to be served the foregoing Memorandum In Opposition To Motion For Summary Disposition On The Remaining Contentions upon the parties listed below by Express Mail:

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

- * Peter J. Nickles, Esq.
Richard A. Meserve
Covington & Burling
1201 Pennsylvania AV, N.W.
Washington, D.C. 20044
- * Chief, Docketing and Service
Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Docketing
11555 Rockville Pike
Rockville, MD 20852
- * Anne Hodgdon
Office of the Executive
Legal Director
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852
- * Robert D. Greenwalt
City Attorney for
West Chicago
100 Main Street
West Chicago, IL 60185
- * John H. Frye, III, Esq.
Chairman
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
Bethesda, MD 20814
- * Dr. James H. Carpenter
Atomic Safety and
Licensing Board
U.S. Nuclear
Regulatory Commission
4350 East West Highway
Bethesda, MD 20814
- * Dr. Jerry R. Kline
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
Bethesda, MD 20814

and by first class mail, in envelopes bearing sufficient postage to the remaining parties listed on said Notice, by depositing same with the United States Postal Service located at 100 West Randolph Street, Chicago, Illinois, 60601



RICHARD A. VERKLER

SERVICE LIST

- * Peter J. Nickles, Esq.
Richard A. Meserve
Covington & Burling
1201 Pennsylvania AV, N.W.
Washington, D.C. 20044
- * Chief, Docketing and Service
Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Docketing
11555 Rockville Pike
Rockville, MD 20852
- * Anne Hodgdon
Office of the Executive
Legal Director
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852
- Stephen England, Esq.
Illinois Dept. of Nuclear Safety
1035 Outer Drive
Springfield, IL 62704
- Atomic Safety and Licensing Board Panel (3)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
- Atomic Safety and Licensing Appeal Panel (5)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
- Joseph A. Young, Jr.
Kerr McGee Chemical Corporation
123 Robert S. Kerr Avenue
Oklahoma City, Oklahoma 73125
- Adjudicatory File
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
- * John H. Frye, III, Esq.
Chairman
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
Bethesda, MD 20814
- * Dr. James H. Carpenter
Atomic Safety and
Licensing Board
U.S. Nuclear
Regulatory Commission
4350 East West Highway
Bethesda, MD 20814
- * Dr. Jerry R. Kline
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
Bethesda, MD 20814
- * Robert D. Greenwalt
City Attorney for
West Chicago
100 Main Street
West Chicago, IL
60185

* - denotes Service by Express Mail

rvmi3b