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ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

July 27, 1982

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ralph G. Page
U.S. Nuclear Regulatory Commission
Safeguards & Licensing Division
Washington, D.C. 20555

Dear Mr. Page:

Please refer to the Draft Environmental Statement related to the decommissioning of Rare Earth Facility, West Chicago, Illinois, Docket No. 40-2061; NUREG-0904 issued by the U.S. Nuclear Regulatory Commission in May.

Comments on this DES by Kerr-McGee Corporation's staff are attached in response to your public notice.

If you have any questions relating to these comments, please let us know.

Respectfully,

W. J. Shelley, Vice-President
Nuclear Licensing & Regulation



WJS/pd

Enclosure

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July 30, 1982

United States Nuclear Regulatory Commission
Uranium Fuel Licensing Branch
Washington, D.C. 20555

RE: NUREG-0904
Draft Environmental Statement
related to the decommissioning
of the Rare Earths Facility,
West Chicago, Illinois
Docket No. 40-2061

Comments of Kerr-McGee Chemical Corporation

Kerr-McGee Chemical Corporation ("Kerr-McGee") generally concurs in the technical appraisals reflected in the Draft Environmental Statement NUREG-0904 ("DES"). However, the conclusions drawn in the DES are not supported by the technical assessments, particularly with respect to the preferred alternative of the NRC staff. Kerr-McGee is also concerned with the lack of positive emphasis in the DES on the absence of health and environmental risks associated with the West Chicago facility as it exists today and will exist regardless of the alternative chosen. Values cited in the DES show that the facility does not violate any regulatory limits for radioactive or non-radioactive materials and that on-site containment of the wastes will only improve the situation. Yet the tone of the DES often hints at some unspecified danger entirely inconsistent with the facts, and thereby does a disservice to the interests of all concerned.

Kerr-McGee's principal objection is to the staff's choice of Alternative III over Alternative I. With respect to every environmental and health consideration, the DES confirms that the impacts on West Chicago of the two alternatives, both short-term and long-term, are insignificant. It is only in the discussion of the "socioeconomic" considerations that the NRC staff finds any difference between Alternatives I and III. Yet no data are presented in support of the NRC staff preference. Despite the DES assessment that the proposed stabilization plan (Alternative I) will provide long-term protection for the environment, that there is no other foreseeably viable alternative, and that containing the wastes in West Chicago lessens significantly the probability of future removal, the DES recommends a "temporary" solution. Implementation of the staff recommendation will postpone resolution of the most significant "socioeconomic" issue in West Chicago: the need for a final decision on the disposition of the wastes.

Kerr-McGee also objects to the failure of the DES to find that the Uranium Mill Tailings Radiation Control Act ("UMTRCA") is applicable to the West Chicago site. The DES implies that there is an exception to UMTRCA's coverage which applies in this instance, but neither the Congress nor the NRC, in its earlier actions under UMTRCA, have indicated that such an exception exists. The language of the Act is mandatory and it applies to mill tailings irrespective of

the presence of other wastes. It was the intent of UMTRCA to include mill tailings under Title II and provide for transfer of ownership under conditions which are applicable to the West Chicago site.

The final decision on whether the wastes must be exhumed and moved should not be left unresolved based upon an unspecified socioeconomic factor which mitigates against containment in West Chicago. The only open question should be whether containment at the site is sound from the environmental and health standpoints. When reasonable continued monitoring demonstrates the integrity of the Kerr-McGee proposal (Alternative I), the site should be transferred as required under Title II of UMTRCA.

Therefore, Kerr-McGee urges that the Final EIS conclude that the preferred alternative is Alternative I and that a license amendment be granted to Kerr-McGee to implement that proposed stabilization plan. The amendment should be for a term of years sufficient to complete the on-site containment work and to demonstrate through monitoring that the on-site containment cell is performing safely as anticipated before transfer of ownership of the disposal site pursuant to Title II of UMTRCA.

The following specific comments of Kerr-McGee follow the sequence of the DES:

Page xi, Preface. In paragraph 4, third sentence,

"August 13, 1979" should be "August 15, 1979."

Page xii, Preface. The DES should update the status of NRC's request to Kerr-McGee for a "cleanup" of Kress Creek. By a letter dated June 4, 1982, NRC stated that it has "decided to further assess the radiological contamination in the Kress Creek area" and that Kerr-McGee should not submit any proposal until this reassessment is complete.

References to "off-site" areas in and around West Chicago that contain material from the former facility should clearly indicate that these areas do not pose an environmental or health risk, as determined by the studies undertaken on these materials.

As Kerr-McGee has often stated, Kerr-McGee has no intention of allowing the site to become a general or commercial waste disposal site. The disposal cell is designed to contain the materials now on-site, supplemented by the "off-site" materials, in a permanent, safe manner which will fully occupy the space available. Once completed, the integrity of the stabilization will depend upon the integrity of the cap. Therefore, once the project is completed, additional materials cannot be added to the disposal site. Kerr-McGee urges the NRC to acknowledge that it would not license this site to receive and store any other material in the future.

Page 1-1, Section II.A. The disposal cell is incor-

rectly described in the summary of the Kerr-McGee proposal denoted as "Alternative I." The DES states that the waste would be placed within a disposal cell and completely encapsulated by .6 meters of low permeability soil and by .3 meters of sand gravel drain. In fact, there would be two sand gravel drains, one within the encapsulated cell to divert drainage to a low spot in the cell, and one directly above the top clay layer of the cell to divert surface water away from the capsule. The two drains would not be connected.

Page 1-2, Section II.B. The description of the proposed cell in Alternative II is confusing, perhaps because it is too brief. Some contaminated waste, e.g., the tailings, would be contained outside the totally encapsulated cell. Only the chemical waste and residues would be totally encapsulated.

Page 1-4, Section IV.A.2. The statement at the top of this page could be misleading where it is noted that the predicted contaminant concentrations in the groundwater at the site boundary would be significantly lower than the EPA drinking water standards. It is more accurate to say that leachate moving down through the disposal cell will not result in additional contaminant concentrations in excess of the EPA drinking water standards. Thus, for clarification, the last three lines in the first (incomplete) paragraph on

page 1-4 should read: ". . . predicted radiological and nonradiological contaminant concentrations from the percolation through the cell would be significantly lower than EPA drinking water standards."

Pages 1-3 through 1-7, Summary and Conclusions. Kerr-McGee disagrees with the NRC staff position that Alternative III should be the preferred alternative of the six listed. Kerr-McGee urges that the Final EIS conclude that Alternative I is the preferred alternative. The NRC staff analysis in support of Alternative III is not convincing, as shown below.

Air Quality. The DES notes that implementation of Alternatives I through V would cause identical short-term impacts on air quality at the West Chicago site, and that these impacts are insignificant as well as temporary. The post-action conditions for the long-term for Alternatives I and III are accurately described as "negligible" (1-3) for both. Further, subsequent movement of the wastes, a potential envisioned under Alternative III, would have additional negative air impacts.

Groundwater. The DES properly concludes that both Alternatives I and III afford adequate protection for groundwater resources at the West Chicago site. Under either alternative, the cell will "effectively minimize leaching of radioactive and nonradioactive waste." (1-3) Thus, for either Alternative I or III, the potential for impact on

groundwater quality is identical (i.e., insignificant) and there is no basis for choosing Alternative III over Alternative I.

Aesthetic Values. There is little question but that all of the alternatives (except Alternative VI) will result in an improvement in the appearance of the West Chicago site through building demolition and landscaping of the factory and intermediate sites. The noticeable topography of the disposal site, under Alternatives I and III, will barely change initially with the addition of a graded, landscaped mound of an elevation no higher than the nearest building.

Thus, for either Alternative I or III, the aesthetics will be identical and there is no basis for choosing Alternative III over Alternative I.

If the material is, in fact, moved to another site consistent with Alternatives IV or V, the aesthetic differences are still insignificant. As the DES indicates, all of the alternatives result in substantial aesthetic improvement. Only the "no action" Alternative VI could result in a negative aesthetic effect.

Socioeconomic Considerations. It is apparent from the DES that this is the sole factor upon which the NRC staff supports Alternative III. The "socioeconomic considerations" relied upon by the NRC in making this choice are

speculative. No basis is offered in support of this preference. Moreover, the socioeconomic impact of the uncertainty associated with the preference for Alternative III is not evaluated. There was ample evidence of concern with such uncertainty among the residents of West Chicago at the public meeting in West Chicago on June 21, 1982. Kerr-McGee urges the NRC to reconsider its choice.

Contrary to the implications of Alternative III, it is not in the best interest of the public at large, the citizens of West Chicago, or Kerr-McGee to move the materials now located on the site, unless environmental conditions change drastically. Alternative III is essentially an interim storage proposal. The people of West Chicago have clearly voiced their opinion that the problem should be resolved, not deferred. The NRC agrees that there is no acceptable receiving site for the materials and there is not likely to be one for many years, if ever. Yet Alternative III would leave the issue of a permanent site dangling so that any social negatives attached to the problem would remain open and unresolved. This is not in the best interest of the public.

In this instance, given the options, it is more acceptable to safely and permanently contain the materials where they are rather than retrieve and truck them through the city at some indeterminate future time. Alternative III is not a sound policy choice. It would authorize Kerr-McGee to

spend more than \$14 million to prepare the site and contain the materials only on a temporary basis, although the DES concludes that they are environmentally safe "as is." There is no possible justification for making that which is safe, any safer, only to face the prospect of doing it over again at more than double the initial containment cost.

Finally, Alternative III is contrary to the overall public interest in prompt decommissioning of tailings sites evidenced in the Uranium Mill Tailings Radiation Control Act of 1978 ("UMTRCA"). (Also see, NRC Draft GEIS on Decommissioning of Nuclear Facilities (NUREG-0586, January, 1981), pp. v and vii.) The public interest is not served by deferring a final decision in light of the overwhelming evidence of the safety of the disposal site as it now exists.

The establishment of a state or regional low-level radioactive waste site is irrelevant to the question of permanent disposal of the materials in West Chicago. The sites to be established under the Low Level Radioactive Waste Policy Act are not intended to receive licensed tailings wastes. It is questionable whether such a site could receive the large volume of wastes present in West Chicago at all, particularly where the radioactivity level is so low. In any event, it will be many years before a Midwest or Illinois site is established, too many years in light of the legitimate interest in resolving the West Chicago matter.

Under Alternative I, Kerr-McGee would not request

termination of its NRC license for the disposal site until post-implementation monitoring demonstrates that the plan performs as designed. Alternative I was proposed by Kerr-McGee as suitable for long-term disposal, and the DES supports that judgment.

UMTRCA specifically contemplates on-site disposal. 42 U.S.C. §2113. The NRC has testified to Congress that "[m]oving an entire tailings pile is an extreme worst case in that all other options would have to have been evaluated and found to be unsatisfactory. . . . Our licensing experience indicates that through recontouring and covering and hardening the tailings pile in place, the necessary assurance concerning long-term stability can be achieved at most, if not all, existing sites." See, letter from Carlton Kammerer, Director, NRC Office of Legislative Affairs, to Chairman Samuel Stratton printed in Uranium Ore Residues: Potential Hazards and Disposition, Hearings Before the Procurement and Military Nuclear Systems Subcomm. of the House Armed Services Comm., 97th Cong. 1st Sess. (June 1981), p. 543. John B. Martin, Director, Division of Management, Office of Nuclear Material Safety and Safeguards, testified, "We share EPA's view that [the tailings] should not be moved except as a last resort, and even then they shouldn't be moved very far . . ." Uranium Ore Residue Hearings, supra, at 155-56.

Page 1-5, Section IV.B. The DES states that NRC is "taking no position on the application of the Mill Tailings Act to the disposal/storage site." (1-2). Reasons for this refusal to take a position as to the applicability of UMTRCA to the West Chicago site are indicated in this section. The DES notes that a "portion of the ore residues in West Chicago were generated from processing of the ores for their rare earths content rather than for thorium, and that these residues, which are intermixed with other ore residues, are not byproduct material." The DES further notes that the largest volume of contaminated material consists of contaminated buildings, equipment, and soil which are not by-product material but rather are termed low-level radioactive wastes. The DES concludes that implementation of the disposal site transfer of ownership proposal in Kerr-McGee's plan "depends upon the legality of the application of the Uranium Mill Tailing Radiation Control Act to a site used predominantly to dispose of low-level wastes." (1-5).

Kerr-McGee disagrees with the deferral of a decision on this important issue. Instead, we believe it must be recognized that Title II of UMTRCA applies in this instance because:

1. The DES position ignores the mandatory language of UMTRCA, which applies to both uranium and thorium mill tailings. As stated in UMTRCA's definition of "byproduct material," the Act applies to "2) the tailings or wastes

produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." (See, 42 U.S.C. § 2014(e).)

2. The DES implies that UMTRCA is limited by certain exceptions and suggests, for example, that UMTRCA may be inapplicable because of the presence of other wastes together with the mill tailings at West Chicago. Nowhere within the UMTRCA or its legislative history is such an exception suggested. UMTRCA applies to mill tailings irrespective of the presence of other wastes.

3. The Low-Level Radioactive Waste Disposal Policy Act of 1980 was not enacted to provide a basis for delaying decision on remedial action relating to sites containing mill tailings, nor was it enacted to provide an alternative framework for the regulation of mill tailings.

4. It was the intent of Congress to regulate uranium and thorium mill tailings under UMTRCA.

The NRC recognized this in its final GEIS (NUREG-0706, September, 1980) ("FGEIS") on this issue and in EIS's issued for other mill tailings sites. If the NRC fails to apply the UMTRCA in this instance, it will be defeating the intent of Congress, departing from its own practices and abdicating its responsibilities for the protection of the environment and of the health and safety of the public.

Thorium production was one of the main functions at the former plant, not simply a sidestream of rare earth pro-

duction. As shown in Table 4.2 of the DES, "Process Wastes and Source Material Contained in Process Wastes," the estimated quantity of thorium is in excess of three million pounds and of uranium is in excess of forty thousand pounds. There is no question but that the substantial amount of waste materials that exists at West Chicago contains a considerable amount of mill tailings, which are covered by UMTRCA.

The DES refers to the low-level radioactive waste at the site which is not byproduct material and argues this could be covered by the Low-Level Radioactive Waste Policy Act. That Act specifically excludes from its coverage byproduct material as defined in Section 11(e)(2) of the Atomic Energy Act of 1954.

There is no indication in UMTRCA that because other wastes are commingled with uranium or thorium mill tailings that the disposal of the tailings would be excepted from the purview of UMTRCA. Indeed there are strong indications, both in NRC statements and in practice, that the NRC will apply the provisions of UMTRCA to waste which contains other types of contamination in addition to mill tailings.

In the FGEIS issued by the NRC, the Commission recognizes that building rubble, foundations, earth and other contaminated material can be buried in the tailings impoundment area. (FGEIS 8-28.) Similarly, the EPA, in its Draft

EIS for Inactive Uranium Processing Sites (EPA 520/4-80-011, December, 1980), recognizes that tailings disposal will include disposal of contaminated soils and buildings. (See, pp. S-1 to S-2; 7-1; 7-5 to 7-6.) Finally, the NRC has in fact proposed to apply UMTRCA in connection with the decontamination, decommissioning, and reclamation of sites, structures, and equipment used in conjunction with tailings byproduct materials at the Edgemont uranium mill in South Dakota. (See, DES Related to the Edgemont Uranium Mill, NUREG-0846, September, 1981, p. 1-2.)

Thus, the licensing action supported by Kerr-McGee under its proposed course of action (Alternative I) is renewal of the license to allow permanent disposal onsite. At the end of the period including implementation of the Plan and reasonable post-implementation monitoring, the following alternatives would be evaluated:

1. If monitoring confirms that the containment is performing as anticipated or if any health or safety concerns identified are remediable, the license to the disposal site will be terminated, after remedial action, if any is required, and the disposal site transferred to federal or state ownership pursuant to Title II of UMTRCA.

2. If monitoring indicates that the containment is not performing as indicated and health or public safety concerns cannot be remedied, the material will be removed to a licensed disposal site or the license renewed until such a site is available.

Page 3-9, Excavation. The DES refers to the proposed NRC Branch Technical Position (October 23, 1981) as a statement of target criteria which will be applicable to the decommissioning and stabilization of the West Chicago site. On January 21, 1982, Kerr-McGee submitted extensive comments to the NRC in opposition to this Position which we will not restate here. Portions of those comments emphasize Kerr-McGee's continuing concern with the bases for the Branch Technical Position and its inapplicability to West Chicago. To the extent that the proposed Branch Technical Position is used as a reference or as support for the DES, we object on the grounds outlined in Kerr-McGee's January 21, 1982 comments.

Page 3-10, Section 3.1.2.2. There are several inaccuracies in the description of the containment cell. In the second paragraph, the parenthetical "(and not less than 10^{-7} centimeters per second)" should be changed to "(and not more than 10^{-7} centimeters per second)."

The last sentence of that paragraph refers to "objec-

tionable" quantities of leachate. It would be more accurate to say that fluids collected in the sump will be removed if "unanticipated" quantities accumulate, whether objectionable or not.

Finally, at the beginning of the third paragraph, "and compacted" should be substituted for "crushed, etc." to more accurately describe the process. Kerr-McGee will use large pieces of material to the extent they can be adequately stabilized within the cell or properly used in the intruder barrier.

Further, as noted above in the comment on Section II.A., the description of the proposed drainage system, repeated here in the last paragraph, incorrectly posits a direct connection between the sand gravel drain for surface water and the underdrain within the containment cell.

Page 3-12, Section 3.1.2.2. In the first full paragraph on p. 3-12, Kerr-McGee suggests an addition. To the sentence, "However, the soil cover's hydraulic conductivity will not exceed 10^{-6} cm/s," add the words, "when initially placed." It is possible that the normal freeze/thaw cycle in the region could result in a higher conductivity in the upper portion of the material.

Page 3-13, Section 3.2. In the last paragraph on this page, the parenthetical "(hydraulic permeability of 10^{-8} cm/s)" should be changed to "(hydraulic conductivity of 10^{-8} cm/s or less)."

Page 3-15, Table 3.1. Under Area 1, "Building 9" should be "Building 19." Under Area 2, neutralized ore

residues and sediment piles are not from Building 19, as stated, but from the vicinity of Building 19.

Page 3-18, Section 3.4.2. Sheffield, Illinois, is more appropriately described as located in northwestern Illinois, approximately 50 miles east of Rock Island. It should also be noted that the Sheffield facility is closed.

The Hanford, Washington site, is operated by U.S. Ecology, not by Chem Nuclear and NECO as stated.

Page 3-19, Section 3.6. The costs used for Alternative III do not indicate that \$14,300,000 covers only the short-term costs and that costs under this Alternative would be substantially greater if the materials were later exhumed and transported to another site. The costs for Alternative III should make clear that this is only an estimate of the potential initial costs of this alternative. If the materials are moved, the total cost would be many times greater than the original containment cost.

Page 4-1, Section 4.1.1.2. Although it runs through the disposal area, the storm drain located between the factory and disposal sites is not a drainage path for the disposal area. The storm drain accepts water from the factory site and the surrounding off-site areas.

Page 4-1, Section 4.1.1.3. The property west of the Elgin, Joliet and Eastern Railroad tracks is not entirely residential, as stated. Only the area at the far north end of the factory site is residential; the rest is uninhabited

county land and park area.

The word "Weyrauch" is misspelled in this section.

Page 4-3, Section 4.1.2.1. The "hard pot" process can be more adequately described. Kerr-McGee suggests that the following description replace the remainder of the first paragraph of the "Manufacturing Processes" section after the sentence ending "cast iron pots": "Barium was added to the ore in this digestion process, to act as a carrier for radium and mesothorium. The resulting residue, called pot cake, was extremely hard and required chiseling for removal. Leaching the pot cake in water generated a solution containing rare earths and an insoluble precipitate containing thorium values called 'first gray mud.' Treatment of the first gray mud with caustic soda and hydrofluoric acid eventually produced a thorium-bearing precipitate called 'second gray mud' and a residue of unreacted ore, gangue, and barium sulfate containing radium and mesothorium called 'black mud.' Part of the first gray mud was processed into finished thorium nitrate or oxide required for mantle production and to meet merchant thorium needs. The remaining residues and first gray mud were stored in piles south of Building 5."

Page 4-3, Section 4.1.2.1. Mention of Kerr-McGee's immediate predecessor at the West Chicago site, American Potash and Chemical Corporation, is omitted from the first

sentence of this section.

It should be noted in paragraph three of this section that use of bastnasite ore was begun in the 1950's.

Page 4-5, Section 4.1.2.2. In the last sentence before Section 4.2, it is incorrect to state that practically all of the organic waste materials have been disposed of or removed from the site. A great deal of organic material, which must be incinerated, remains on site.

Page 4-7, Section 4.2.1, West Chicago Site. The correct legal description of the Kerr-McGee site is: the SE 1/4 of Section 9 and the NE 1/4 of Section 16, T39N, R9E.

Page 4-28, Section 4.3.5, Air Quality. The second paragraph of this section states that permitting requirements under the Clean Air Act ("CAA") are not applicable because "the Kerr-McGee project is temporary. . . ." Kerr-McGee agrees with the conclusion that no federal CAA permit will be necessary, but we urge that the rationale be changed in the Final EIS.

The two principal CAA programs potentially affecting new sources of air pollution are Prevention of Significant Deterioration ("PSD") and New Source Review ("NSR"). PSD applies in areas designated "attainment" and "unclassified" for particular pollutants (40 C.F.R. § 51.24(c)), and NSR applies in "nonattainment" areas (40 C.F.R. § 51.18(a)).

DuPage County, in which the Kerr-McGee facility is located, has been designated as a nonattainment area for particulate matter (40 C.F.R. § 81.314), and therefore PSD requirements would not apply. (See, 40 C.F.R. § 51.24(i)(3).)

NSR applies to major sources and major modifications located in nonattainment areas. The Kerr-McGee project would be excluded from NSR coverage for two reasons. First, "major stationary source" and "major modification" to a source are defined in the federal NSR regulations to include only those installations which would emit at least 100 tons per year of a regulated pollutant or which would result in a significant net emissions increase from an existing source, respectively. 40 C.F.R. § 51.18(j)(1)(v) and (vi). A "significant" net emissions increase for particulate matter is 25 tons per year. 40 C.F.R. § 51.18(j)(1)(xiii). The total predicted particulate emissions from the Kerr-McGee project for its five-year construction period are only 15 tons which is well below the amounts which bring the NSR provisions into play.

Second, even allowing for a wide margin of error in the estimated particulate emissions from the Kerr-McGee project, these will be "fugitive emissions" as defined at 40 C.F.R. § 51.18(j)(1)(xii) and exempted from mandatory NSR coverage at 40 C.F.R. § 51.18(j)(4).

Thus, there is no federal requirement that the Kerr-McGee project undergo any review or permitting process under

the Clean Air Act.

Page 4-36, Section 4.4.2.4. In the last full paragraph on this page, the DES states that American Potash and Chemical Company granted Kerr-McGee a roadway easement. This is incorrect. American Potash was Kerr-McGee's predecessor at the site and was merged into Kerr-McGee in 1967. The roadway easement was granted by the Elgin, Joliet and Eastern Railroad, which holds title to the roadway.

Page 4-37, Section 4.4.2.5, Political Organization. Kerr-McGee questions whether the references in the second paragraph to the DuPage County Zoning Department are relevant. The factory and disposal sites are located entirely within the boundaries of the City of West Chicago, which claims authority to zone the property. Only a small portion of the intermediate site is located within an unincorporated area of Winfield Township. Therefore, Kerr-McGee suggests that the discussion relating to the County Zoning Department be deleted since it is not relevant.

Page 4-33, Section 4.4.2.1, Housing. The estimates used in the first paragraph relating to home values close to the site appear to be based upon four-year-old estimates of a single local real estate broker. This is inadequate data to support the conclusions stated in the DES.

Page 4-38, Section 4.4.2.6, Property Values. The estimates in this section are based on outdated data. Since

1978, when these estimates appear to have been made, there have been substantial changes in the general real estate market, and several home sales have occurred in the plant area from which more accurate evaluations may be made. In addition, more data must be obtained to attempt any valid estimate of a causal relationship between the existence of the facility and an alleged diminution of local property values.

It is apparent that if a "temporary" resolution of the disposal of the wastes is implemented as envisioned by Alternative III, any benefit to be gained by dismantling the buildings could be offset by the reasonable fear that the materials may have to be exhumed in the near future.

Page 4-44, Section 4.6.1. The first full paragraph on this page suggests that a gas mantle plant was established in West Chicago by the end of the 19th century. The Lindsay facility did not begin to manufacture mantles in West Chicago until the 1930's.

Page 4-52, Section 4.7.1.2. The DES relies on sub-surface geology data current only to 1977. Kerr-McGee consultants have since performed further studies of the geology and hydrology of the area. Any discussion of this topic should include the more recent Law Engineering reports which have been submitted to the NRC by Kerr-McGee.

Page 4-62, Section 4.8.2.1. This section should be

updated to include the more recent hydrologic data collected by Kerr-McGee and submitted to the NRC.

The first paragraph incorrectly refers to confining beds as "aquifers." The companion page for the Figure 4.23 reference, from Ziezal et al., 1962, which was omitted from the DES, shows that the proper designation should be "Galena-Platteville" for the confining beds of the Maquoketa and Ironton geohydrologic units and the proper designation should be "Galesville" for the confining beds of the Eau Claire geohydrologic unit. Additionally, Cambrian-Ordovician aquifer is a group name, which includes the above geohydrologic units; a more specific reference would be "Glenwood-St. Peter."

Page 4-63, Section 4.8.2.1. The last paragraph in the section entitled "Glacial Drift Aquifer" should be augmented as follows:

The yield of the glacial drift aquifer varies over the area, depending upon the thickness and lithology of the glacial materials. In general, extensive sand and gravel deposits are found along the outer margins of end moraines, along river valleys, and in bedrock depressions. At the present time, all known wells drawing water from glacial drift are located near the DuPage River and are at least 4,000 feet east of the West Chicago site.

Page 4-64, Section 4.8.2.1. The entire section on

Water Quality should be updated with more recent data which has been collected by Kerr-McGee and transmitted to the NRC on March 13 and July 15, 1981.

Pages 4-64 and 4-67, Water Quality. The DES relates water quality analyses of borehole samples to the National Interim Primary Drinking Water Standards and National Secondary Drinking Water Standards. These should not be deemed applicable to the West Chicago facility as standards to be met by the containment plan and, therefore, the Final EIS should indicate that they are being used only as reference points.

Page 4-65, Figure 4.27. "Mine Tailings Pile" is an inaccurate description. The correct designation is "tailings pile."

Page 4-89, Section 4.8.2.1. The fact that groundwater quality at the site is improving is insufficiently emphasized. The statement that contaminants continue to leach from the site into the groundwater requires qualification or documentation.

The discussion on this page concerning the residual effects of previous contamination ignores the length of time required for those contaminants to reach the bedrock aquifer; that is, the travel time from the surface to the bedrock aquifer through 90 feet of glacial material.

The conclusions in this section are unsupported.

Page 5-2, Section 5.1.2. It is incorrect to state that

truck travel at an off-site burial site would be infrequent. NRC's own estimate, at p. 6-2 of the DES, is that 8640 truckloads of waste would be moved to an off-site location. Although Kerr-McGee disagrees with that estimate, for the reasons stated in its comment on Section 6.1.3 below, the number of truckloads would undoubtedly be many more.

Page 5-4, Section 5.3.1. The third paragraph in this section assumes that the "no-action alternative (Alternative VI) is, in effect, currently being followed." This sentence should be changed to reflect the fact that there has been significant clean-up activity going on at the site during the past three years. Kerr-McGee is continuing with activity under Phase I-A of the Stabilization Plan, as supplemented, and under license amendments granted by the NRC authorizing specific actions. The work on-site includes clean-up, preliminary dismantling and demolition work and design and preparation for the construction of an incinerator to reduce the volume of organic waste.

Pages 5-4 and 5-5, Section 5.3.1. The DES refers to the site as an "attractive nuisance" as it exists today and appears to assume that the site would be an "attractive nuisance" even if Alternative I were implemented. These references carry an inaccurate implication and should be rewritten.

The phrase "attractive nuisance" should not be used because it suggests that the site is inherently dangerous in

its present state. To the contrary, the DES concludes that the site does not pose a health or environmental hazard. After containment of the wastes is complete, the site would be no more an "attractive nuisance" than any other fenced-in area located within the City of West Chicago, such as the high school athletic field. The disposal site will not need to be nor will it be posted with "Danger-Radioactivity" signs.

The disposal site will not be a health hazard even if errant children play on the surface after the containment project is completed. The only concern relates to deep digging and an effect on the integrity of the capsule cap, which risk is provided for in the design under Alternative I.

In the fifth paragraph on page 5-5 of the DES, the DES raises the concern that the public will perceive that the "temporary storage" Alternative (III) will become a final decision through governmental inertia. We agree. This concern argues, we believe, against deferral of a permanent resolution in the absence of a real or perceived health or environmental risk. For this reason, Kerr-McGee urges the NRC to adopt Alternative I and make the final decision now for permanent containment of the waste materials on the site.

The first paragraph on page 5-5 states that the on-site

disposal and storage alternatives would result in the employment of about thirty people through a local contractor and two or three health physicists. This is not accurate. Although Kerr-McGee will employ thirty to forty-five persons on the project, they will work directly for Kerr-McGee. Kerr-McGee has used contractors to perform site engineering studies, but not actual labor.

Page 5-6, Section 5.3.1. For the reasons noted above, Kerr-McGee disagrees with the first sentence on this page indicating that long-term "social considerations" make shipment of the wastes a preferable alternative. These social considerations are never defined in the DES. Moreover, shipment of the wastes, if that should be required, could result in adverse impacts from the act of transit alone. Other communities have expressed no interest in the receipt of these materials. At least one Illinois county opposes their shipment to and disposal within its borders (LaSalle County) and it may be reasonably assumed that this county is not an exception. The area around the West Chicago disposal site is not densely populated and, as the DES points out, land use within the immediate area includes light industry.

Because of the large volume of material, its low-level radioactivity and the ability to safely contain it where it is now located, long-term considerations do not favor ship-

ment. Indeed, all social considerations favor a safe, permanent containment in West Chicago as proposed in Alternative I.

Page 5-7, Section 5.4.2, Mitigative Measures. Kerr-McGee believes that citizens of West Chicago should be included in any decision on or design for eventual use of the portion of the site which would be released for unrestricted use.

Page 5-8, Section 5.6.1.1. The third from the last sentence of the first paragraph on this page implies that Kerr-McGee is operating under the constraints of an NPDES permit. This is inaccurate. Kerr-McGee does not believe that an NPDES permit is presently required.

Page 5-9, Section 5.6.2.1. References to continued impact to the bedrock aquifer ignore more recent site-specific data provided to NRC by Kerr-McGee. This section requires substantial revision to incorporate this current data.

Page 5-10, Section 5.6.2.1. The last sentence of the third full paragraph on this page should be changed for clarity to read as follows: "The leachate concentrations used in the analyses are, therefore, believed to be conservative."

Page 5-16, Section 5.8.2.2. The impact of a spill during transportation is not sufficiently explained. The

environmental impacts of the clean-up itself are potentially large--removal of soil contaminated by the spill and attendant need for a larger disposal area, harm to vegetation and fauna, and the impact of the heavy clean-up equipment. Also this section ignores the cost of clean-up and of preparing a spill response plan, which is necessary even if there is no accident.

Page 5-17, Section 5.8.3.1. In the first full paragraph on this page, an in-ground fence to discourage burrowing animals from tunneling the mound is suggested. Such a fence would be both unnecessary and ineffective. The cell as designed is sufficient to discourage burrowing.

Page 5-17, Section 5.9.1. and Table 5.2. The volume and area given for the sludge residues are ambiguous. Apparently the volume of 2400 m³ and the surface area of 1800 m² are for the sludge pile only and do not include any of the three sludge ponds. Yet Table 5.2 lists significant quantities of thorium and uranium in the sludge ponds and the Stabilization Plan (p. 4.25) indicates 675,000 ft.³ of low specific activity sediment to be disposed of on-site. These figures should be reconciled.

Page 5-22, Section 5.9.2.2. In paragraph one, particulate emissions under the "no-action" alternative (Alternative VI) are estimated at 190 kg/yr from the tailings pile and 33 kg/yr from the sludge pile. The assumptions on which these figures are based, such as suspension factor and

density, are not adequately stated.

With respect to paragraph two, Kerr-McGee has been unable to duplicate calculations resulting in a Radon-220 release rate of approximately 14,000 Ci/yr. An appendix showing NRC's calculations for this and all radiological values in the DES should be prepared. The DES ignores the data and calculations prepared by Dames & Moore on the specific characteristics of the tailings and sediment materials which were supplied to the NRC by Kerr-McGee on April 21, 1981. These data demonstrate that calculation of the source term for radon gas using the methods described in the FGEIS results in an overstatement of the source term by several orders of magnitude.

Page 5-23, Section 5.9.2.3. This material requires clarification. It is unclear whether all of the first paragraph on the page refers to Alternative II and whether the values in the next paragraph apply only to Alternative II or to all on-site or off-site disposal or storage alternatives.

Again, Kerr-McGee was unable to duplicate the results of NRC's calculations with respect to radiological values, at least in part because the estimated quantity of dust would have to be somewhat arbitrarily apportioned between the tailings and sludge piles, a ratio not given in the DES. Then, based on the radionuclide concentrations and total volumes of the two types of piles, radionuclide releases would be calculated. Kerr-McGee cannot assess the accuracy

of these values without knowing which alternative they apply to and reviewing the calculations used. However, even though Alternative II is not its preferred plan, Kerr-McGee disagrees with the implication that implementation would result in excessive radionuclide emissions.

Page 5-24, Section 5.9.3. The radiation doses estimated for the alternative actions at the facility are understandably conservative. Nevertheless, it is clear that under any alternative, no member of the public will receive a significant dose of radiation and any associated health risk will be negligible. Kerr-McGee agrees with this assessment, but suggests that the term "significant dose" as used here and elsewhere in the DES be placed in perspective.

Page 5-25, Table 5.5. This table is confusing and subject to misinterpretation. The doses for the construction period are given in person-rem/yr and mrem/yr despite the fact that construction will take only eight weeks. For example, it is unclear whether it is assumed that an individual at the nearest residence will receive a dose to the whole body during construction of 5 mrem, or at a rate of 5 mrem/yr which results in $8/52 \times 5$ mrem. In either event, it should be emphasized that these dose levels are extremely low. Further, the dose to the bronchial epithelium during construction for an individual at the nearest residence is given in Table 5.5 as 5 mrem/yr, but the accompanying foot-

note states that the dose during construction will be 8/52 of the annual no-action dose, or 40 mrem. These discrepancies should be clarified.

Page 5-29, Section 5.9.6. The discussion of occupational dose would be enhanced by inclusion of calculated doses and, where available, actual doses. No doses are given except the extreme 1.6 rem for eight weeks of work involving the tailings. Using NRC's estimated dose rates of 1 mrem/hr at the factory site, 2 mrem/hr at the disposal site, and 0.7 mrem/hr for support personnel, maximum quarterly doses can be calculated. For example, at 0.7 mrem/hr the maximum quarterly dose would be 364 mrem, and at 2 mrem/hr the maximum dose would be approximately 1000 mrem. These doses compare favorably to the 1,250 or 3,000 mrem permitted under 10 C.F.R. Part 20, and the regulatory limits should be set forth in a table along with the estimated doses. Further, it should be noted that actual data from demolition activities at the facility over the past year show the dose rates to be much lower than NRC's conservative estimate. The average exposure rate on the factory site is actually about 0.1 mrem/hr, one-tenth of the rate estimated by NRC. The effective dose rate for management and truck drivers at the site is about 0.05 mrem/hr, one-fourteenth of the NPC estimate.

Page 5-31, Section 5.10.2.1. The disposal mound could

rise as much as 20 feet above natural grade depending on the amount of contaminated earth which must be removed from the factory site. The top of the disposal cell will be the same height as the roof line of buildings adjoining the site. The mound's status as a focal point will be mitigated by appropriate landscaping around the perimeter, so that the mound will blend in with its surroundings.

Page 6-1, Section 6.1.1. In the third paragraph the statement that Kerr-McGee will use only diesel equipment is not correct. Although use of diesel equipment may be a good idea, some gasoline-powered equipment is now in use and will continue to be used. Depending upon need and availability, more gasoline-powered equipment may be added in the future.

The term "short duration" as used in the last sentence of this section should be defined, and the statement should be put in context with the opinion expressed elsewhere in the DES that impacts from the site are de minimus.

Page 6-2, Section 6.1.1. Since the May 8, 1980 inspection of the site by the West Chicago fire chief, Kerr-McGee has stored some wood in Buildings 2 and 9 while awaiting incinerator installation.

Page 6-2, Section 6.1.3. The discussion of off-site transportation could be misleading relating to the quantity of material to be moved and the truckloads required. A vastly greater quantity of material than just tailings would

have to be shipped for any off-site disposal option. Second, Kerr-McGee would use 20-25 ton trucks for over the road shipment rather than the 11-ton trucks referred to in the DES. Thus, the 8640 truckload estimate is probably too low, as is the estimated number of accidents.

Pages 6-2 and 6-3, Section 6.1.3. The second paragraph of this section, concerning dose to an individual as the result of an accident, is superficial. The effect of a release of 25 kg of dispersable tailings is not necessarily an individual 50-year lung dose commitment of 550 mrem at 100 meters. Rather, it should be stated that, with a 25 kg release, the quantity taken in by inhalation by an individual at a distance of 100 meters would result in no greater than a 550 mrem lung dose commitment. Even so, that dose estimate is quite large compared to what would actually be expected from a spill.

Page 7-2, Section 7.2.1.2. The exact number of monitoring wells to be maintained and sampled is not yet known, although wells at both the factory and disposal sites will remain and be sampled for some length of time.

Page 7-3, Section 7.4.1. Although it is accurate to state that pre-decommissioning off-site external dose rates from external radiation do not exceed the limits set in 10 C.F.R. Part 20, it is misleading to omit the fact, as noted in Table 5.5, that the off-site whole body dose to the

nearest resident is less than 1 mrem/yr, or less than 1/500 of the regulatory limit. Merely to state that the limit is not exceeded is not specific enough.

Page 7-3, Section 7.4.3. Kerr-McGee does not propose to measure radon flux. The NRC has consistently taken the position with respect to mill tailings piles that only calculations of projected radon flux need be made for purposes of comparison with applicable standards.

Page A-2, Alternative Sites. The last full paragraph on page A-3 of Appendix A to the DES does not appear to reflect recent NRC proposals. While generally the NRC may not consider accessibility and distance as criteria for disposal siting, there can be little question but that these criteria are important here, particularly with the large volume and low radioactivity of the wastes.