December 15, 1994

Cyprus Amax Minerals
ATTN: Patrick Lee
Manager, Environmental Engineering
Representing Cyprus Foote Mineral
9100 East Mineral Circle
Englewood, CO 80155

SUBJECT: NRC COMMENTS ON THE NOVEMBER 22, 1994, WOODWARD-CLYDE RESPONSE TO THE NRC'S OCTOBER 28, 1994, LETTER REGARDING THE PHASE I WORK PLAN

Dear Mr. Lee:

The NRC staff has clarified concerns that need to be considered in conjunction with the implementation of the **Phase I Work Plan for a Scoping Survey of Vicinity Properties in the Area of Cambridge, Ohio**. The NRC's comments are enclosed with this letter. We request that you respond to these comments within 30 days from the date of this letter.

If you have any questions regarding this letter, please contact me at (708) 829-9876 or Ray Glinski of my staff at (708) 829-9813.

Sincerely,

Gary L. Shear, Chief
Fuel Cycle and Decommissioning Branch

Docket No. 040-07397

Enclosure: As stated

cc w/encl: R. Torrini, Woodward-Clyde Consultants
R. Owen, Ohio Department of Health
B. Blair, Ohio Environmental Protection Agency
J. Wendel, USEPA, Region V
The Honorable H. Metzenbaum, U.S. Senate
The Honorable J. Glenn, U. S. Senate
S. Bauman, Save the Wills Creek Water Resources Committee
D. Patterson, Jr., Beveridge and Diamond, P.C.

bcc w/encl: PUBLIC (IE07)

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NAME	Glinski RG		McCann		Shear		Weber		Nelson	
DATE	12/15/94		12/15/94		12/15/94		12/15/94		12/15/94	

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NRC Comments on Woodward-Clyde Consultants
November 22, 1994 Response

1. The NRC maintains that the definition of source material stated in 10 CFR 40.4 establishes source material as "uranium or thorium, or any combination thereof, in any physical or chemical form...". Therefore, whether or not the slag is determined to be "not licensable" or an "unimportant quantity", the fact remains that slag with elevated levels of uranium and thorium is subject to NRC jurisdiction as source material.

2. The NRC requests that CFMC clarify or expand on the references upon which the conclusions and observations on page 2 of the Phase I Work Plan were based. Please provide the following:

   a) What were the slag production time periods reviewed? The review should include all production runs, regardless of whether a license was active or not.

   b) Did the review of slag production records include pilot plant operations?

   c) Did FMC have a stated policy for the disbursement of the slag offsite?

   d) Did the documents contain results from laboratory analyses of the slag?

   Additionally, the CFMC Phase I Report should provide a review of the following documents regarding the Cambridge facility; (1) raw starting material procurement files and (2) records of material received from other Foote Mineral facilities. This information will be useful in determining the origin and characterization of the nuclides in the slag.

3. See Comment #1 above.

4. No further comments at this time.

5. No further comments at this time.

6. The NRC acknowledges the following;

   (a) 10 CFR 20.1302(b)(1) states that compliance with the annual dose limit for members of the public (10 CFR 1301(a)(1)) may be demonstrated by calculations.

   (b) that occupancy factors and institutional controls may be included in dose calculations.

7. No further comments at this time.

8. No further comments at this time.

9. The NRC believes that an accurate, site-specific dose assessment should include a determination of the Activity Median Aerodynamic Diameter (AMAD) and resuspension factor for the slag. An air sampling program adequate to determine these parameters should be implemented. An acceptable alternative would be a justification by CFMC that the value used for the inhalation particle size in the dose assessment would result in a sufficiently conservative dose estimate.

10. No further comments at this time.

11. If ASTM Method D4874-89 tests indicate appreciable leaching of the nuclides of interest from the slag, the NRC believes that an accurate site-specific dose assessment should include a determination of the transport characteristics of soils and geologic media for both the saturated and unsaturated zones in the Guernsey County area. An acceptable alternative would be a justification by CFMC that the RESRAD default values used for the groundwater pathway in the dose assessment would result in a sufficiently conservative dose estimate.

12. No further comments at this time.

13. No further comments at this time.

14. No further comments at this time.

15. Since physical and radiological heterogeneity were both identified by previous surveys, the NRC continues to believe that samples of slag collected during the vicinity surveys must be representative of the variety of slag types encountered. If a correlation between these slag characteristics is discovered, this information may help in ascertaining the timeframe when the slag was generated and could aid in focussing subsequent radiological surveys. Further, the heterogeneity of the slag may have a significant impact on the allocation of resources and the dose assessments performed. The NRC requests that CFMC clarify the actions taken to ensure that slag samples collected will be representative of the variety of slag that exists at offsite locations.

16. No further comments at this time.

17. No further comments at this time.

18. No further comments at this time.

19. No further comments at this time.