

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION III 799 ROOSEVELT ROAD GLEN ELLYN, ILLINOIS 60137

OCT 2 6 1988

MEMORANDUM FOR: Leland C. Rouse, Chief, Fuel Cycle Safety Branch, NMSS

FROM:

Bruce S. Mallett, Chief, Nuclear Materials Safety Branch, Region III

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SUBJECT: CONFIRMATORY SURVEY AT COMBUSTION ENGINEERING (HEMATITE)

The purpose of this memorandum is to discuss the results of the confirmatory survey performed by G. M. France, III, Fuel Facility Inspector, on October 6 and 7, 1988, in Buildings 250 and 251 at Combustion Engineering's fuel fabrication facility in Hematite, Missouri. Donald J. Sreniawski, Chief, Nuclear Material Safety Section 2, accompanied Mr. France during the onsite survey.

The confirmatory measurements, coupled with a review of the licensee's survey and history of facility operations, indicates that the licensee conducted cleanup efforts that were effective in reducing radioactive contamination levels to below NRC guidelines. On this basis, we concur with the licensee's data and request to release Buildings 250 and 251 for "unrestricted use."

The inspector determined that surface gamma exposure rates for direct readings in the two buildings ranged from 9-65  $\mu$ R/hr. Surface gamma exposure rates for the asphalt/concrete walkway ranged from 10-70  $\mu$ R/hr. General background exposure rates ranged from 6 to 10  $\mu$ R/hr for the Hematite site. Smears were counted to determine gross alpha activity. The maximum smearable level was 29 dpm/100cm<sup>2</sup>. Smears from locations of elevated direct beta-gamma measurements indicated only a small amount of transferable contamination. The highest level of fixed gross alpha contamination was determined to be 1430 dpm/100cm<sup>2</sup>.

Unless NRC objects, the licensee plans to demolish Buildings 250 and 251 and construct a larger facility that would place more services under one roof. To support these modifications, the licensee performed core hole drilling in the soil beneath the asphalt and concrete walkways outside the buildings. Preliminary, unconfirmed results indicate that total alpha contamination in the soil samples ranged from 1 to 142 pCi/g. The samples were selected from 9 core hole drillings consisting of 6 samples per core hole collected at one foot intervals. Samples from 6 of the core holes were submitted to NRC Region III for confirmatory measurements. The licensee's data for soil measurements in the areas selected for new footings to construct the new facility showed readings of 3 to 21 pCi/g. On this basis, the licensee requested permission to form footings and commence construction prior to the onset of cold weather. This would enable the licensee to place the area under roof while demolishing Buildings 250 and 251.

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Leland C. Rouse

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Based on this preliminary data, Region III concurs with the licensee's request to commence construction with the understanding that additional surveys and confirmatory measurements may be needed to fully characterize the radiation levels of soil located beneath the existing asphalt/concrete walkways.

If you have any questions about these comments, please call D. J. Sreniawski (FTS 388-5611) or G. M. France, III (FTS 388-5786) of my staff.

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Bruce S. Mallett, Chief Nuclear Materials Safety Branch

cc: License File C. E. Norelius, RIII