



AUG 12 1977

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SGMC:JB  
70-687

NOTE TO: J. Partlow

FROM: J. Blaylock

SUBJECT: UNION CARBIDE - EXEMPTION TO LEMUF CALCULATION

The limited exemption is based on the following rationale. By 70.53(b)(1), a MUF is considered to be significant only if two thresholds are exceeded; the MUF is greater than its associated LEMUF, and is greater than 300 grams of U-235. Thus, if the MUF is less than 300 grams, the calculated LEMUF is immaterial since no special or additional reporting or inventory efforts are required.

Based on past historical data and present and future throughput projections, Union Carbide should be given a limited exemption that provides relief from the regulation requiring a LEMUF calculation provided the MUF is less than 150 grams of uranium or U-235. This limited exemption is considered to be conservative based on the licensee's historical data. Should the MUF be between 150 grams and 300 grams of uranium or U-235, the licensee must then calculate a LEMUF. This limited exemption does nothing to relax the standards programs. In the event a MUF exceeded the 150 gram uranium or U-235 threshold, the basic data base exists for the determination of measurement biases and systematic errors. I do not believe that the safeguards effectiveness will be diminished through the granting of this limited exemption.

Supplementary Information

Union Carbide produces radiochemical products at its Tuxedo, NY facility. At the present time Mo-99, which is used for medical and inhalation studies, is the primary fission product of interest from the irradiation of HEU. The site has a possession limit of 4450 grams of U-235; all of the uranium has enrichment of 93%. Total throughput of U-235 is less than 10 kg per year. The historical data for the Sterling Forest Laboratory for the interval January 1975 through February 1977, shows an acceptable degree of control of the SNM considering the size and type of process. The calculated LEMUF has averaged 85 gm of U-235 during this interval; the cumulative MUF is 458 gm of U-235 during this interval (an average of 35 gm per inventory).

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DATE	8/12/77	8/11/77			