70-687

UNION CARBIDE CORPORATION P. O. BOX 324, TUXEDO, NEW YORK 10987
MEDICAL PRODUCTS DIVISION TELEPHONE NUMBER: (914) 351-2131

June 25, 1985

U. S. Nuclear Regulatory Commission
Mr. Norman Ketzlack
Region I
King of Prussia, PA 19406

SUBJECT: Special Nuclear Materials License SNM-639 Docket No. 70-687

Dear Mr. Ketzlack:

Kindly refer to paragraph 4.2.5 (1)(j) of the subject license in which we specified the qualifications for the material of the raschig rings used for control of criticality in the processing cell waste.

We are experiencing difficulty in meeting the nitric acid chemical acceptance test specified in section 4.2.1 of ANSI/ANS-8.5-1979. Due partly to the small size of our rings, we find that the loss in weight from the ten rings used in the test range up to 0.07% rather than the required 0.01%.

In view of the fact that the rings are never reused, and that any leaked material stays in the solution within the storage bottle, we wish to request a change in the percent loss limit for our special situation. We believe that a limit of 0.1% would be reasonable without compromise to safety.

We enclose a proposed revision to page I.4-4 of the subject license for your consideration and approval, and also our check for $150 as administrative fee. We believe the requested change or excepetion to be a minor administrative matter not requiring a detailed safety analysis.

Very truly yours,

James J. McGovern
Business Manager,
Radiochemicals

KDG:mag
Enclosures
D2347J

Applicant
Check No. 0139398
Amount, Fee Category 150
Type Of Fee
Date Check Rec'd
Received By

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(f) The U-235 concentration shall not exceed 250 grams per liter of H_2SO_4 solution.

(g) The hydrogen density in the solution shall be between 75 and 115 g/L.

(h) The size of the storage shelf shall be at least 18 ft^2.

(i) Each batch shall be stored no longer than 60 days.

(j) The raschig rings shall be validated to comply with the specifications of ANSI/ANS 8.5 except that the mechanical shock-resistance test (Para. 4.5) and the maintenance inspections (Sec. 6) shall not be required. Furthermore, the weight loss limit for the Nitric Acid Test (para. 4.2.1) shall be 0.1 percent, provided that the rasching rings in any container shall be used only once.

(2) The quantity of SNM in an isotope processing cell shall not exceed 650 gms U-235 provided SNM in excess of 100 gms must be contained in borosilicate glass containers meeting the following criteria:

(a) The volume of individual containers shall not exceed 250 mL.

(b) The concentration of U-235 shall be less than .250 gm/mL.

(c) Containers shall be stored in racks for ease of identity and prevention of damage.

(d) Storage containers shall be composed of borosilicate glass containing $\geq$ 11.8 weight percent B_2O_3.

(e) The size of the storage shelf shall be at least 18 ft^2.

4.2.6 Quantity Limit for SNM in a Waste Storage Hot Cell

SNM in a waste storage hot cell shall be in the following forms. The total shall not exceed 2000 gms U-235 per cell.

(a) Metal cylinders containing no more than 200 gms U-235 in solution per container, having a maximum inside diameter of 5 inches and a maximum height of 12 inches, stored in a linear array of up to 7 cylinders having a maximum edge to edge spacing of 1.34 inches.

(b) Metal cylinders (5" O.D. x 12" H x 1/16 wall) containing no more than 200 gms U-235 solidified in concrete (H/U $\geq$ 1300). This material is from the waste form process. The maximum quantity per 55 gallon (minimum) drum shall be 200 gms.