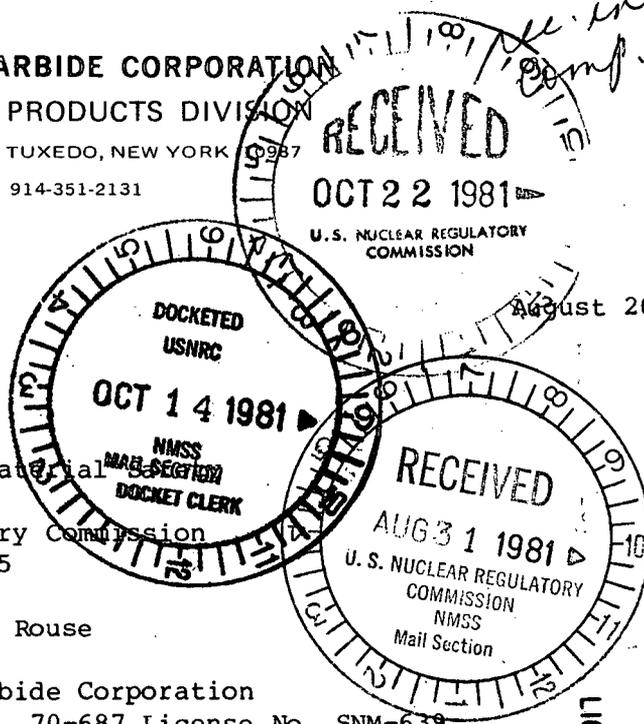




UNION CARBIDE CORPORATION  
 MEDICAL PRODUCTS DIVISION  
 P.O. BOX 324, TUXEDO, NEW YORK 1987  
 TELEPHONE: 914-351-2131

70-687 10  
 10/14/81 PDR

Return to  
 O. CRAMER  
 396-SS



August 20, 1981  
 8:11 AM 10 07

Director of Nuclear Material  
 and Safeguards  
 U.S. Nuclear Regulatory Commission  
 Washington, D.C. 20555

Attention: Leland C. Rouse

Reference: Union Carbide Corporation  
 Docket No. 70-687 License No. SNM-639

Dear Sir:

Our July 18, 1980 letter to you requested an exemption related to 10 CFR Part 73. In that submittal, we discussed a modification to our facility to store radioactive waste containing enriched uranium. Since the storage facility was only in conceptual design at the time, minimal detail was included. Our existing facility is licensed for the use and possession of uranium 235, 2000 grams of which may be in a waste storage cell under specific conditions. Our assertion in the referenced letter was that the storage facility would fall under the existing license for a storage cell. In discussions with Mr. Rouse and his staff, it was suggested that we request an explicit amendment addressing the facility modification. That amendment request is provided in this letter.

The waste storage facility modification, as shown in the attached drawing, is an addition to the existing structure of the same type of construction. The addition contains 100 individual storage compartments sized for 55 gallon waste drums in a honeycomb matrix. The storage cavities are 28" in diameter in a triangular array, with 10" of concrete separating any adjacent storage cavities at the closest proximity. The radioactive waste consists of bi-product material licensed by the state of New York under provisions of Agreement State Licensing in License No. 729-0322. Because of the level of radioactivity in the waste container, a minimum of 4' of concrete shielding is provided on all accessible surfaces of the storage facility. The waste to be stored in the facility is packaged to meet DOT and waste burial site requirements. Included in the waste may be up to 350 grams of U-235 per container. This is a known safe quantity for an individual unit in that it is less than one-half of the single parameter limit. In this specific geometry, the average density of U-235 over the storage array, assuming each compartment

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 U.S. NUCLEAR REGULATORY COMMISSION  
 LIC. FEE MGMT. DIVISION

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Applicant	.....
Check No.	29504
Amount/Fee Category	\$1250
Type of Fee	min. se
Date Check Rec'd	10/9/81
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Applicant	.....
Check No.	01188
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Type of Fee	min. se
Date Check Rec'd	8/31/81
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August 20, 1981

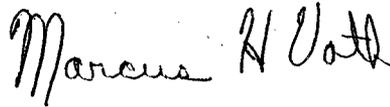
Page Two

contains its maximum quantity of material, is 0.569 grams per liter, which is substantially below the single parameter limit of 11.5 grams per liter multiplied by a factor of 0.5 to account for the moderating effect of the concrete lattice. Upon completion of the facility, which is scheduled for late September of this year, the protected area parameter will be expanded to include the addition to the facility. The effectiveness of the physical security plan will remain unchanged; a separate filing to the Commission will address this matter.

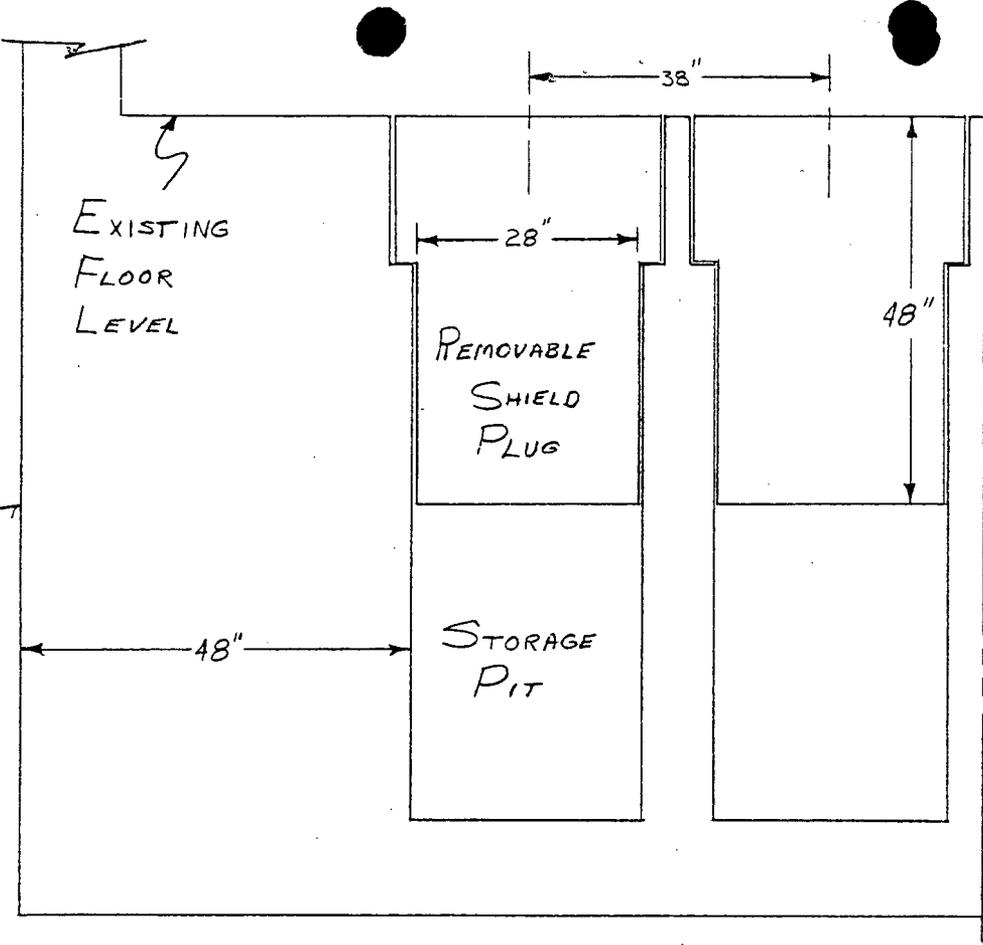
We specifically request that Condition 9 of our existing License #SNM-639 be amended, adding the date of this submittal. The specific amendment would thereby authorize the storage of up to 350 grams of U-235 in each of the 100 storage cavities of the waste storage facility described above.

A check in the amount of \$150.00 is attached for the administrative fee to process this amendment pursuant to 10CFR Part 170.

Yours very truly,

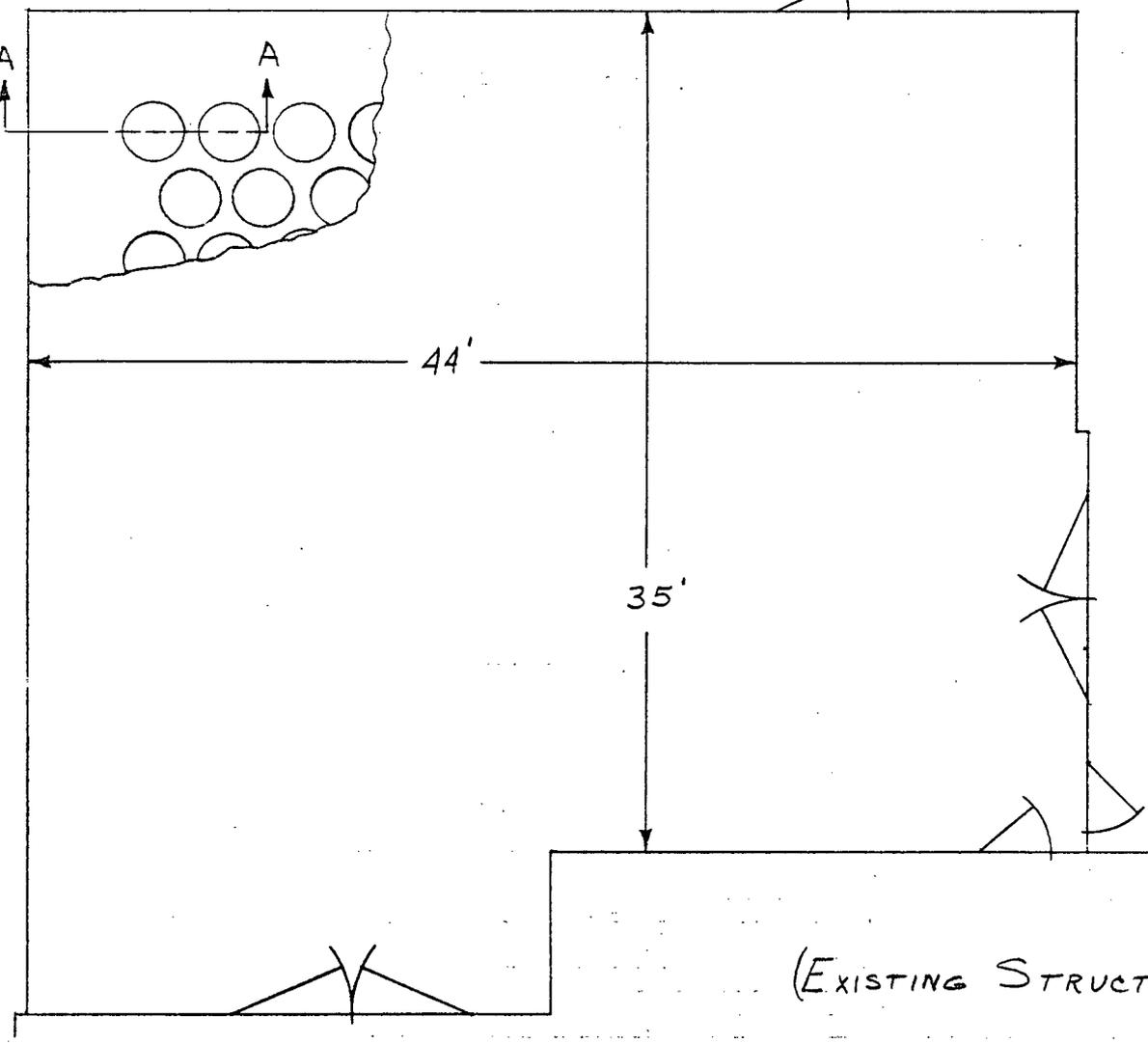


Marcus H. Voth  
Manager  
Nuclear Operations



SECTION AA

SCALE:  $\frac{1}{2}'' = 1'$



WASTE STORAGE FACILITY

SCALE:  $\frac{1}{8}'' = 1'$

