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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 2 0 1979

Docket No.: 70-687

Applicant: Union Carbide Corporation (UCC)

Facility: Corporate Research Laboratory

Subject: LICENSE AMENDMENT APPLICATIONS DATED DECEMBER 28, 1977, WITH SUPPLEMENTS DATED MAY 3, AND OCTOBER 13, 1978.

Background

The December 28, 1977, application requested that (a) the quantity of special nuclear material in a single hot cell be increased from 650 grams to 2650 grams and, (b) that the possession limit of U-235 under the license be increased from 4600 grams U-235 to 3000 grams of unirradiated U-235 and 10,000 grams of irradiated U-235. The May 3, and October 13, 1978, supplements provided supporting data for the increased mass limits in hot cells. A license amendment was issued on October 30, 1978, approving the increased quantities in hot cells. The 13 kilogram mass limit, however, was not approved at that time because the licensee did not meet the requirements for physical protection of licensed activities for the higher U-235 possession limit as required by 10 CFR 70.53.

Discussion

By letter dated January 30, 1979, Union Carbide Corporation was advised that an exemption from the requirements of 10 CFR 73.50 had been granted and that the UCC Materials and Plant Protection Amendment MPP-3 had been amended by adding Section 9 (a copy of which is attached) which contains the conditions of the exemption.

Nuclear Safety

Although the total mass of U-235 which the licensee may possess is being increased there is no change in the safe parameters discussed in the previously referenced SER of October 30, 1978. However, at the request of Mr. Jerry Roth, I&E, Region I, and with the concurrence of Mr. Mark Voth, UCC, I have added License Condition No. 17 as follows:

17. The licensee shall empty and clean the unsafe geometry container in the waste storage laboratory after each batch of not more than 350 grams of U-235 have been processed through the plating laboratory and shall maintain records showing that the container has been emptied after each 350 gram batch is processed.

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Radiation Safety and Environmental

The change in possession limit does not affect the currently approved radiation safety procedures nor the environmental considerations.

Recommendation

On the basis of the above, I recommend that the license be amended as requested by the licensee.

J. C. Delaney

Approved: W. T. Crow

JAN 30 1979

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70-607

Union Carbide Corporation
Sterling Forest Research Center
ATTN: Mr. Marcus H. Voth
Manager, Nuclear Operations
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Reference is made to your letter of November 10, 1978 regarding a request for exemption from 10 CFR 73.30 for certain special nuclear material under License No. SNM-639. We have determined that an exemption to the requirements of 10 CFR 73.30 as pertains to irradiated target material is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest.

Accordingly, we are hereby amending Materials and Plant Protection Amendment MPP-3 to your License No. SNM-639 by adding Section 9 as set forth in the enclosure to this letter, effective immediately.

Sincerely,

Robert F. Burnett, Director
Division of Safeguards

Enclosure:
As stated

Enclosure A

Section 9 Materials and Plant Protection Amendment
MPP-3 to License No. SNM-639.

9.0 The licensee shall comply with the following provisions:

9.1 The combined amount of uranium-235 possessed under License Nos. R-81 and SNM-639 which is contained in uranium enriched to 20 percent or more in the U-235 isotope and which is not irradiated shall be less than 5,000 grams.

9.2 The licensee is not required to include uranium-235 contained in irradiated target material in calculations of the 5,000 gram threshold for application of 10 CFR 73.50 provided that the hot cells are protected within a protected area so that irradiated target material located there is afforded the same protection measures as given to irradiated fuel elements in the reactor building under the licensee's approved reactor security plan, and

(a) locks and alarms which annunciate upon unauthorized use when the area is unoccupied are provided to either the hot cell manipulators or hot cell doors

(b) any irradiated target material located in the transfer channel or reactor pool is in a container which has an external radiation dose rate of 100 rem at 3 feet from its surfaces without intervening shielding and equipment for handling such containers is provided with locks and alarms which annunciate upon unauthorized use when the area is unoccupied.