

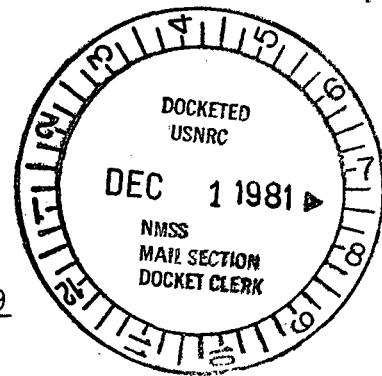


UNION CARBIDE CORPORATION
 MEDICAL PRODUCTS DIVISION
 P.O. BOX 324, TUXEDO, NEW YORK
 TELEPHONE: 914-351-2131

70-687

PDR
 Return to
 Dave Crame
 396SS

November 16, 1981



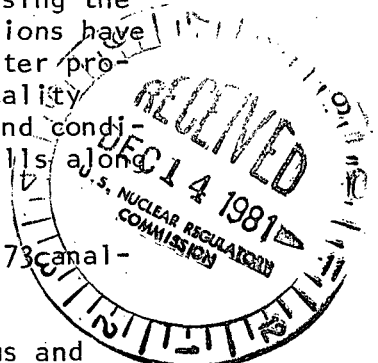
Director of Nuclear Materials
 Safety & Safeguards
 U. S. Nuclear Regulatory Commission
 Washington, D. C. 20555

Att: Dr. A. Thomas Clark

Ref: U. C. Corporation, Docket 70-687, License No. SNM-639

Dear Sir:

In our discussions with representatives of your staff concerning our submittals of July 18, 1980 and August 20, 1981 addressing the waste storage facility at the above referenced facility, questions have arisen concerning the need for criticality monitors. This letter provides the basis for extending the existing exemption of criticality monitoring requirements pursuant to 10 CFR Part 70.24 (a)(1) and condition 13 of License SNM-639 to include the new waste storage cells along with the present hot cells for the purposes of that exemption.



The basis for the present exemption is a June 29, 1973 analysis with the following conclusions:

1. In the event of a criticality the particulate, gaseous and iodine radiation monitors in the exhaust ventilation from the hot cells would sound an alarm.
2. There would be no hazard to facility personnel in the event of a criticality incident in the hot cell having a magnitude of 10^{17} fissions; the resulting dose from fission neutron and gamma rays would be less than or equal to 0.75 rem.
3. It is not practical to monitor exterior to the cells for a criticality occurring inside a cell because of the 4' thick shield walls. Neither is it practical to monitor inside each cell because of the extreme level of radiation present from routine operations.

The new storage cells meet the same criteria as applied to the existing hot cells regarding the relevance of the existing exemption. Factors to consider in evaluating the relevance are as follows:

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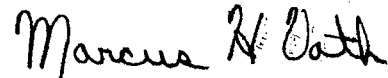
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1. The effluents from the waste storage cells flow in a common duct with the effluents from the existing hot cells, passing the stack monitors.
2. The containers placed into the storage cells will have previously been packaged and stored in the existing hot cells in a much closer array than what is possible in the storage facility.
3. The SNM is packaged in quantities of less than 350 grams per container. Ten times that amount would be required to approach the single parameter limit for the storage facility.
4. Because of the reflection and moderation of the concrete and the limited volume remaining, the reactivity of material in storage cannot be significantly effected by abnormal occurrences involving water intrusion.
5. The 4' thick shield plugs preclude interaction with any other SNM which may be taken through the area above the new storage cells.

We believe these items provide adequate justification for extending license condition 13 of License SNM-639 to include the waste storage cells in the exemption from 10 CFR Part 70.24 (a)(1).

Yours very truly,



Marcus H. Voth
Manager
Nuclear Operations

MHV:ltm

to: Rouse 11/30/81

"LICENSE AMENDMENTS"

Docket No. 70-6A7

William O. Miller, License Fee Management Branch, ADM

MATERIALS LICENSE AMENDMENT CLASSIFICATION

Applicant: Union Carbide
License No: SDM-639 Fee Category: 1D
Application Dated: 11-16-81 Received: 11-25-81
Applicant's Classification: _____

The above application for amendment has been reviewed by NMSS in accordance with §170.31 of Part 170, and is classified as follows:

1. Safety and Environmental Amendments to Licenses in Fee Categories 1A through 1H, 2A, 2B, 2C, and 4A
 - (a) _____ Major safety and environmental
 - (b) _____ Minor safety and environmental
 - (c) _____ Safety and environmental (Categories 1D through 1G only)
 - (d) _____ Administrative

2. Justification for reclassification: _____

3. The application was filed (a) _____ pursuant to written NRC request and the amendment is being issued for the convenience of the Commission, or (b) X Other (State reason):
Submittal provides supplemental information to August 20, 1981 application (Safety & Env. Classification) based on oral discussions between NRC reviewers and licensee.

Signature J. C. Rouse
Division of Fuel Cycle & Material Safety
Date 11/30/81