

Wilson

APR 26 1984

Ms. Andrea K. Wilson
Assistant Director
Environmental Congress of
Mid-Michigan
901 E. Gaylord
Mt. Pleasant, MI 48858

Dear Ms. Wilson:

This is in response to your letter dated February 29, 1984, in which you inquired as to the status of the renewal of the NRC License No. 21-00265-06 issued to the Dow Chemical Company, Midland, Michigan. As discussed in a telephone conversation between you and Dr. Bruce Mallett of my staff on April 9, 1984, we have scheduled a site visit to Dow Chemical for the purpose of reviewing the documentation submitted in support of the renewal, prior to issuance. We have been in contact with staff members of the Environmental Protection Agency, Region V, Eastern District Office, Westlake, Ohio, and it is our intent to coordinate any incinerator sampling or analysis with them.

We have not granted Dow Chemical a limited extension to the license (e.g., 90 days) as indicated in your letter. We consider the application for renewal of their license to be timely filed; therefore, the existing license will not expire until final action on the application has been taken by our office.

As indicated to you by Dr. Mallett, our site visit is scheduled for either the week of May 7-11 or May 14-18, 1984. At the conclusion of the visit, Mr. George McCann, site team leader, will contact you to arrange a meeting to answer any questions or concerns you may have. We have enclosed a list of information that we require licensees to submit with applications for incineration of waste.

Sincerely,

W. L. Axelson

W. L. Axelson, Chief
Materials and Safeguards Branch

8506050313 841207
PDR FOIA
KOHNB4-B50 PDR

Enclosure: As stated

bcc w/o encl:
J. A. Hind

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► RIII <i>hsm</i>	RIII <i>hsm</i>
► Mallett/jl	Axelson
► 4/26/84	

SUMMARY OF SUPPORTING DATA USED IN SETTING CRITERIA FOR
INCINERATION OF RADIOISOTOPES

DOW CHEMICAL U.S.A.
MICHIGAN DIVISION
MIDLAND, MICHIGAN

I. Background Information

- A. Effluent flow rates of the incinerator
- B. Maximum Permissible Concentration (MPC) Guidelines and other appropriate regulations as specified by U.S. NRC Rules and Regulations, Title 10, Chapter 1, Code of Federal Regulations (CFR), Part 20
- C. DNR permit issued to the Michigan Division for incineration of radioactive waste

II. Criteria and Supporting Calculations for Determination of Incineration Guidelines for Radioisotopes to Meet the ALARA Goal of 10% of Unrestricted MPCs

- A. Calculation of potential concentrations in air, ash, and quench water
- B. Criteria for Incinerator Effluent Monitoring
- C. Sampling protocol
 - 1. ash sampling
 - 2. quench water sampling
 - 3. air sampling
- D. Analysis methods protocol
 - 1. ash analysis for C-14, H-3, and other potential isotopes
 - 2. quench water analyses
 - 3. air analysis
- E. Maximum dose off-site

III. Inventory Control for Incineration of Radioisotopes

- A. Flow diagram of radioactive materials
- B. Material transaction form

Attachments:

- 1. Table 1, maximum conceivable radionuclide concentrations in effluents in relation to maximum permissible concentration limits.
- 2. State of Michigan, Department of Natural Resources, permit numbers 93-73I and 471-79, item 28, allowing incineration of radioactive waste.

Table 1. MAXIMUM CONCEIVABLE RADIONUCLIDE CONCENTRATIONS
IN EFFLUENTS IN RELATION TO MAXIMUM PERMISSIBLE
CONCENTRATION LIMITS

MICHIGAN DIVISION INCINERATOR

Radionuclide	C-14	H-3	Any By-Product Material Licensed to Dow Example: Sn-113 (tin)
*Radioactivity Incinerated/Day ($\mu\text{Ci}/\text{Day}$)	1.1×10^4	2.2×10^4	97
<u>AIR EFFLUENT</u>			
**MPC ($\mu\text{Ci}/\text{ml}$)	1×10^{-7} (sol.)	2×10^{-7}	2×10^{-9} (Insol.) 1×10^{-8}
In-Stack Concentration ($\mu\text{Ci}/\text{ml}$)	1×10^{-8}	2×10^{-8}	8.8×10^{-11}
% of MPC	10	10	4.4 (Insol.) 0.9 (sol.)
*Offsite Concentration ($\mu\text{Ci}/\text{ml}$)	2.2×10^{-14}	4.4×10^{-14}	2×10^{-16}
Offsite % of MPC	0.00002	0.00002	0.00001
<u>ASH EFFLUENT</u>			
MPC ($\mu\text{Ci}/\text{ml}$)	8×10^{-4} (sol.)	3×10^{-3} (Insol.)	8×10^{-5} (Insol.)
Ash Concentration ($\mu\text{Ci}/\text{g}$)	4.55×10^{-5}	9.1×10^{-5}	8×10^{-6} (Insol.)
% of MPC	6	3	10
<u>QUENCH WATER EFFLUENT</u>			
MPC ($\mu\text{Ci}/\text{ml}$)	8×10^{-4} (sol.)	3×10^{-3} (sol.)	9×10^{-5} (sol.)
Water Concentration ($\mu\text{Ci}/\text{ml}$)	3.1×10^{-6}	6.2×10^{-6}	2.7×10^{-8}
% of MPC	0.4	0.2	0.03

*Based on the goals of the ALARA concept of 10% of the allowable MPC at the effluent source, actual burned quantities may be significantly less for the most restrictive effluent route.

**Maximum Permissible Concentration (MPC) for unrestricted release.

*Point of maximum fence line concentration (annualized average) calculated using stack concentration divided by 459,037 dilutions.

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E. M. LAITALA
HILARY F. SNELL
PAUL H. WENDLER
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DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
BOX 30028
LANSING, MI 48909
HOWARD A. TANNER, Director

Mr. John A. Tomke, Manager
Environmental Services
Dow Chemical U.S.A.
628 Building
Midland, Michigan 48640

JUN 01 1982

Dear Mr. Tomke:

This letter is in reference to your Permits to Install issued on February 27, 1974, and July 6, 1981, for the rotary kiln incinerator facility, located at the 703 Building, Midland, Michigan.

The Michigan Air Pollution Control Commission has granted your request to burn low level radioactive wastes at its May 18, 1982, meeting. Accordingly, the supplements to Permits to Install Nos. 93-731 (Dow 148) and 471-79 (Dow 334) have been revised.

Approval of these permits is now based upon and subject to compliance with all administrative rules of the Commission and conditions stipulated in the attached revised supplements.

If you have any further questions concerning these permits, please contact John Shaffer at (517) 322-1339 or myself at (517) 322-1333.

Sincerely,

W. Charles McIntosh

W. Charles McIntosh, Engineer
Permit Unit
Air Quality Division

WCM:kb
Enclosures
cc: Mark Reed

JUN 01 1982

Dow Chemical Company
Permit No. 93-731
Page 3

25. Applicant shall not operate the rotary kiln unless the venturi scrubber and packed scrubber are on line and operating properly.
26. Thirty days after start up of the electrostatic precipitator, applicant shall not operate the rotary kiln unless the electrostatic precipitator is on line and operating properly.
27. The exhaust gases from the rotary kiln shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 12 inches at an exit point not less than 200 feet above ground level.
28. Applicant may incinerate any wastes containing byproduct material as defined and licensed to the applicant by the U.S. Nuclear Regulatory Commission, in accordance with the conditions of said license and all applicable federal regulations, including 10 CFR 20.

WCM:kib

February 29, 1984

United States Nuclear Regulatory Commission
799 Roosevelt Rd.
Glen Ellyn
Illinois 60137

Dear Dr. Mallett:

I am inquiring as to the status of Dow Chemical Company's license #21-00265-06. According to my information the license was expired on October 31, 1983. A phone call to your office in October 1983 revealed that the NRC was "backlogged" with permit renewals and that a 90 day extension would be granted to the company until NRC had staff available to review it. That 90 days has also come and gone. Have they been granted another extension?

I was told that I would be kept up to date on the status of this license and that has not happened. Please send me a copy of Dow's latest application for renewal on #21-00265-06 and any correspondence that has taken place regarding this license since the renewal application was filed. I make this request pursuant to the Freedom of Information Act.

I also suggested several times that the NRC coordinate incinerator sampling and analysis with the Environmental Protection Agency. The EPA's plan for air studies in the Midland area was released yesterday and I have not heard whether NRC will be involved. Please bring me up to date on the Commission's position on this issue.

Sincerely,

Andrea K. Wilson

Andrea K. Wilson, Assistant Director
Environmental Congress of Mid-Michigan
901 E. Gaylord
Mt. Pleasant
Michigan 48858

517-772-5365

Please note address change.

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