



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

40-17

June 18, 1979

MEMORANDUM FOR: Region III Files

FROM: J. A. Pagliaro, Chief, Materials Radiological
Protection Section No. 2

SUBJECT: DOW CHEMICAL CO.
LICENSE NO. STB-527
BURIAL OF THORIUM SLAG RESIDUE

During our next inspection, check on the licensee's burial of Magnesium-Thorium slag residue at Saginaw or Bay City, Michigan. Paul Guinn of NMSS, during review of an application for renewal, came upon the licensee's request for permission to bury, which was not approved. It is believed that such burial was performed.

for *John Pagliaro*
J. A. Pagliaro, Chief
Materials Radiological
Protection Section No. 2

I-11

40-0017

OCT 9 1979

FCMLB:PG
(03798)

Dow Chemical Company
ATTN: Dennis L. Barsten
1803 Building
Midland, MI 48640

Gentlemen:

This refers to your letter dated May 17, 1979, providing additional information concerning the renewal of License No. STB-527 (Docket No. 040-00017). Your letter has raised additional questions concerning your activities under License No. STB-527.

Your May 17, 1979 letter refers to storage only at your Bay City, Michigan plant whereas your current license also references your facilities in Midland, Michigan and Madison, Illinois. If you have abandoned or returned to unrestricted use facilities in which licensed material was used and/or stored at your Midland, Michigan and/or Madison, Illinois plants, we need information concerning your decontamination and radiation survey activities in accordance with the enclosed guide, GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL. For areas in your Midland, Michigan and/or Madison, Illinois facilities which contained soil contamination, we need information showing that all source material present in the soils was identified and removed from those areas prior to abandonment or return to unrestricted use.

Your May 17, 1979 letter also states that magnesium-thorium wastes are stored in the northeast corner of your plant site in Bay City, Michigan, and that these wastes were... "covered with several inches of earth and coated with a road sealant." Our review of your applications referenced in your license revealed no information concerning storage of magnesium-thorium wastes in the manner described in your May 17, 1979 letter. Your application dated February 23, 1968, for example, specifies that thorium wastes are "generally" disposed of in compliance with 20.303 and 20.304. We are not certain that the method for storage of magnesium-thorium wastes described in your May 17, 1979 letter is an adequate method for storage of wastes containing licensed material and may constitute burial of waste in a manner which is beyond the scope of Section 20.30 in 10 CFR Part 20. In any event, our records show that you have been authorized to store wastes containing source materials for more than seven years and for this reason we do not believe that it is in the public interest to continue this authorization. In view of this, we request that you submit, for our approval, a

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comprehensive plan for removal and disposal of all magnesium-thorium wastes now in your possession including soils containing thorium contamination. To assist you in providing this information we have, in addition to the above referenced guide, enclosed copies of Guide 10.4 GUIDE FOR THE PREPARATION OF APPLICATIONS FOR LICENSES TO PROCESS SOURCE MATERIAL, Guide 8.11, APPLICATIONS OF BIOASSAY FOR URANIUM and Guide 8.15 ACCEPTABLE PROGRAMS FOR RESPIRATORY PROTECTION. You should refer to each of these guides and provide information which is applicable to your activities and in accordance with the guidelines in each guide. Examples of the kinds of information needed are as follows:

1. Radiation surveys and analysis of samples. We need a description of your procedures for performing radiation surveys, including instrument surveys, wipe or contamination surveys and analysis of wastes including soil samples. This information should include an outline of a comprehensive sampling program to assure that all wastes containing source material and soils containing source material contamination have been removed from Dow Chemical property. Refer to Item 12(c)a in Guide 10.4. and the previously referenced survey and decontamination guide.
2. Removal of magnesium-thorium waste. We need a description of your program for removal of the magnesium-thorium wastes and soil contamination which have been identified as a result of your radiation surveys and analysis program. You should include a description of your methods for packaging of the wastes for removal from your premises. If you plan to utilize a commercial waste disposal agency, please provide the name of this company, and describe the specific activities they will perform. Refer to Item 13 in Guide 10.4.
3. Transportation. If your waste disposal agency will transport the waste material please specify this. If the Dow Chemical Company will transport licensed material, we need sufficient information describing your transportation methods to assure us that you will meet all requirements of the U.S. Department of Transportation.
4. Radiation survey instruments. Please describe your radiation survey instruments to be used in conducting radiation surveys and describe your calibration procedures. Refer to Item 11.f. in Guide 10.4.
5. Measuring instruments. We need a description of the instruments used to analyze soil samples and your procedures for calibration of this instrument. If analysis of soil samples is performed by someone other than the Dow Chemical Company, please provide the name of this company or person and the license number which authorizes this analysis. Refer to Item 11.f. in Guide 10.4.
6. Personnel monitoring. Describe your program for monitoring personnel for exposures to external radiation. If you use film badges and/or TLD's, please state the frequency of exchange and identify your supplier. Refer to Item 11.g. in Guide 10.4.

7. Bioassay program. We need a description of your bioassay program to determine employee uptakes of thorium. If you have determined that bioassays are not necessary for your program, you should provide information in support of your decision. If bioassays are collected and analyzed by an outside service company, please identify this company and describe your procedures for collection of bioassay samples. Refer to Guide 8.11. Please note that although this guide refers to bioassays for uranium the same guidelines will apply to thorium bioassays.
8. Contamination surveys. Please describe your program for preventing contamination of workers and for conducting radiation surveys of workers to determine the contamination levels. If employees are required to wear shoe covers, gloves, etc., please describe these requirements, and provide details concerning your program for monitoring personnel for contamination. Refer to Items 11.c., and 12(c)a.(1) in Guide 10.4.
9. Control and evaluation of air contamination. We need to know how you will control and evaluate the concentrations of thorium in air during your removal and/or decontamination activities. Included should be information concerning air sampling, use of respirators, etc. If you have concluded that air sampling is not necessary for your activities, you should provide information in support of your decision. Please note that if you use respirators, and this use is taken into account in determining levels of personnel exposure to airborne concentrations, your respirator program should be in accordance with the enclosed Guide 8.15. Also refer to Items 11.e. and 12(c)a.(3) in Guide 10.4.

Our review of your application will continue upon receipt of the above information. Please provide two copies of your reply and reference your assigned Mail Control No. 08798.

Sincerely,

Paul R. Guinn
Material Licensing Branch
Division of Fuel Cycle and
Material Safety

Enclosures: As stated

Guide 10.4

CRESS:WILL
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AUG 1 1983

Docket No. 50-264 53 62

Dow Chemical U.S.A.
ATTN: Dr. L. W. Rumpy, Chairman
Radiation Safety Committee
1803 Building
Midland, MI 48640

Gentlemen:

This refers to the routine safety inspection conducted by Mr. W. B. Grant of this office on June 29-30, 1983, of activities at TRIGA Reactor Facility authorized by NRC Operating License No. R-108 and to the discussion of our findings with Messrs. R. Croyle and K. Kelly at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractors) believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within ten (10) days from the date of this letter of your intention to file a request for withholding; and (b) submit within twenty-five (25) days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than seven (7) days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons which are the bases for the claim that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, a copy of this letter and the enclosed inspection report will be placed in the Public Document Room.

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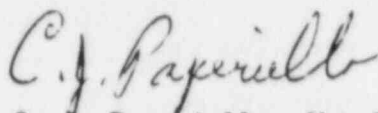
Dow Chemical U.S.A.

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,



C. J. Paperiello, Chief
Emergency Preparedness and
Radiological Safety Branch

Enclosure: Inspection Report
No. 50-264/83-02(DRMSP)

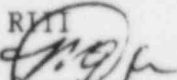
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Dr. C. W. Kocher, Reactor
Supervisor

F. J. Knoll, Research Manager
and Chairman, Reactor Operations
Committee

DMB/Document Control Desk (RIDS)

George W. Bruchmann, Michigan
Department of Public Health

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Paperiello
8/1/83

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 5-264/83-02(DRMSP)

Docket No. 50-264

License No. R-108

Licensee: Dow Chemical U.S.A.
1803 Building
Midland, MI 48640

Facility Name: TRIGA Reactor

Inspection At: TRIGA Reactor Site, Midland, MI

Inspection Conducted: June 29-30, 1983

Inspector: *W. B. Grant* *for*

7/29/83
Date

Approved By: *L. R. Greger* *for*
L. R. Greger, Chief
Facilities Radiation
Protection Section

7/29/83
Date

Inspection Summary

Inspection on June 29-30, 1983, (Report No. 50-264/83-02(DRMSP))

Areas Inspected: Routine, unannounced inspection of radiation protection and radwaste management programs including: qualifications; audits; training; radiation protection procedures; instruments and equipment; exposure control; posting, labeling, and control; surveys; notifications and reports; records of effluents; radioactive waste; and transportation activities. The inspection involved ten inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

*R. Croyle, Manager, Industrial Hygiene Services
*K. Kelly, Assistant Reactor Supervisor
F. Knoll, Research Manager
T. Parsons, Health Physicist
T. Quinn, Senior Reactor Operator

*Denotes those present at the exit meeting.

2. General

This inspection, which began at 12:45 p.m. on June 29, 1983, was conducted to examine the routine operational radiation protection and radwaste management programs at the DOW Chemical, USA TRIGA Reactor. Records, Logs, instrument calibrations, and area radiation monitor tests were found to be current. The reactor was operated during the inspection. No problems were noted.

3. Organization

The reactor staff consists of a reactor supervisor and two assistant reactor supervisors who are also senior reactor operators, five senior reactor operators and one reactor operator trainee. Mr. F. J. Knoll has replaced Mr. J. M. Macki as Research Manager in Building 1602 and as Chairman of the Reactor Operations Committee. No problems were identified.

4. Licensee Audits

Minutes of the Reactor Operations Committee (ROC) and the Radiation Safety Committee (RSC) meetings held since September 1980 were reviewed. Membership and meeting frequencies for both committees were as required in Technical Specifications 1.2 and 1.4.

5. Training

Except for the reactor staff, no other individuals frequent the reactor area. The reactor staff receives radiation protection training, which meets the requirements of 10 CFR 19.12, during annual operator requalification.

No items of noncompliance were identified.

6. Radiation Protection Procedures

The inspector reviewed procedures contained in the "TRIGA Operations Manual," including calibration procedures for the area radiation monitor, continuous air monitor, and pool water monitor.

No items of noncompliance were identified.

In October 1982, a mechanical failure of the pump vanes on the CAM during reactor operation caused an apparent violation of technical specifications. The reactor had operated for about one hour and had been shut down when the licensee noted that the CAM was not operating. The reactor had performed normally; the area monitor in the reactor room had not alarmed; and operation of the reactor after pump repair did not indicate abnormal levels of airborne radioactive materials. Therefore, no abnormal conditions were believed to have existed while the CAM was inoperable. Corrective actions appear adequate. This matter was discussed at the exit meeting.

No items of noncompliance were identified.

8. Exposure Control

a. External Exposure

The vendor's film badge reports were reviewed for the period September 1980 to date. The largest whole body and extremity doses received in a calendar year were 140 mrem and 220 mrem, respectively. No problems were noted.

b. Internal Exposure

The licensee has no routine bioassay program for the reactor staff. They rely on the CAM, contamination surveys, and pool activity measurements to indicate any problems. The inspector reviewed records of these indicators. Except as noted in Section 7.c, no problems were noted.

No items of noncompliance were identified.

9. Posting and Labeling

The licensee's compliance with posting and labeling requirements specified in 10 CFR 19.11 and 10 CFR 20.203 were reviewed.

No items of noncompliance were identified.

10. Transportation Activities

According to the licensee, no radioactive material has been received under the TRIGA license since September 1980. The inspector reviewed records of radioactive shipments made since September 1980. No problems were noted.

The licensee has not submitted a quality assurance program in accordance with 10 CFR 71, Appendix E, and has no plans to do so. No shipment containing greater than Type A quantities has been made.

No items of noncompliance were identified.

7. Instruments and Equipment

a. Portable Survey Instruments

Operable and calibrated instruments capable of detecting beta, gamma, and neutron radiation are available at the reactor. Additional instruments are available from the Industrial Hygiene Office as needed. Records indicated that ionization type and neutron instruments are calibrated quarterly and Geiger-Mueller type meters annually. No problems were noted.

b. Area Radiation Monitor

Records indicate that the monitor was calibrated in March and August of CY 1981, 1982, and in March of CY 1983. The monitor is calibrated with a 10 mg radium source. (Technical Specification G.3 specifies an annual calibration frequency.)

c. Continuous Air Monitor (CAM)

The inspector reviewed records of calibration and alarm setpoint checks performed since September 1980 and noted that the frequency was as required by Technical Specification G.3. No problems were noted.

Technical Specification G.2 requires a CAM with readout and audible alarm to be operating in the reactor room when the reactor is operating. An apparent violation of the technical specification occurred in March 1981 and again in October 1982. In March 1981, the licensee noted that the CAM readout indicated abnormally low. Investigation by the licensee determined that defective "O" ring seals on the filter holder prevented proper seating of the holder and permitted air to bypass the filter. Therefore, only a portion of the particulates contained in the sampled air was collected on the filter. The licensee determined that no more than 90 percent of the sampled air bypassed the filter, and since the remaining 10 percent would have caused the instrument to alarm before exceeding regulatory limits, no violation of the technical specification occurred. The licensee's corrective actions were:

- (1) The filter-in lock was adjusted so that it can not be closed unless the filter holder is properly seated.
- (2) The vacuum relief valve was relocated behind the rotometer so that the rotometer will only measure air that passes through the filter.
- (3) A new reactor start-up checkout procedure was implemented providing for momentary plugging of the air intake to measure any bypass air with the rotometer. The licensee's investigation and corrective actions appear adequate. This matter was discussed at the exit meeting.

11. Surveys

Contamination and radiation surveys are performed monthly in portions of the facility, and quarterly in the remaining areas. Results of these surveys were reviewed. Occasional low-level contamination is found in known contamination areas.

No items of noncompliance were identified.

12. Notifications and Reports

Review of records and discussions with representatives indicated compliance with 10 CFR 19 and 10 CFR 20 requirements.

No items of noncompliance were identified.

13. Radioactive Waste

a. Liquid Radwaste

No radioactive liquid effluents are released from the reactor. Any liquids generated are collected and transferred to the Industrial Hygiene Office for solidification and disposal.

b. Gaseous Radwaste

The licensee has no gaseous effluent monitor. A calculation of the theoretical amount of Ar-41 generated, presented in Section H.5 of the Safety Analysis Report, indicates that 10 CFR 20 limits would not be exceeded during continuous operation of the rabbit system; the system is operated only a few hours per week.

Particulate effluents would be detected by the CAM. No significant particulate activity has been noted.

c. Solid Radwaste

Solid radioactive waste generated at the reactor facility is collected by the Industrial Hygiene Office and transferred (under NRC Byproduct Material License No. 21-00165-06) to a licensed disposal company.

No items of noncompliance were identified.

14. Exit Meeting

The inspector met with licensee representatives (denoted in Paragraph 1-) at the conclusion of the inspection on June 30, 1983. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the inspector's comments concerning the operation of the continuous air monitor. (Paragraph 7.c)

December 10, 1984

Docket No. 50-264 84-01

Dow Chemical U.S.A.
ATTN: Dr. L. W. Rampy, Chairman
Radiation Safety Committee
1803 Building
Midland, MI 48640

Gentlemen:

This refers to the routine safety inspection conducted by J. E. Hyder, our contractor, and K. R. Ridgway of our office on October 24-26, 1984, of activities authorized by NRC Operating License No. R-108 and to the discussion of our findings with Mr. D. L. Berry and other members of your staff at the conclusion of the inspection.

In addition to the routine inspection of your licensed activities, this inspection served to introduce James Hyder of the Los Alamos National Laboratory, which has contracted with our office to provide nonpower reactor inspection services.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

During this inspection, certain of your activities appeared to be in non-compliance with NRC requirements, as specified in the enclosed Appendix. A written response is required.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter, the enclosures, and your response to this letter will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractors) believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within ten (10) days from the date of this letter of your intention to file a request for withholding; and (b) submit within twenty-five (25) days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than seven (7) days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons which are the bases for the claim that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld

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December 10, 1984

shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, a copy of this letter, the enclosures, and your response to this letter will be placed in the Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

"Original Signed By C. E. Norelius"

C. E. Norelius, Director
Division of Reactor Projects

Enclosure: Inspection Report
No. 50-264/84-01(DRP)

cc w/encl:

Dr. C. W. Kocher, Reactor
Supervisor

D. L. Berry, Research Manager
and Chairman, Reactor
Operations Committee

DMB/Document Control Desk (RIDS)

George W. Bruchmann, Michigan
Department of Public Health

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Appendix

NOTICE OF VIOLATION

Dow Chemical U.S.A.

Docket No. 50-264

As a result of the inspection conducted on October 24-26, 1984, and in accordance with the NRC Enforcement Policy 47 FR 9987 (March 9, 1982), the following violation was identified.

Licensee Condition 3.D.(1) states, "The Licensee shall inform the Commission of any incident or condition relating to the operation of the reactor which prevented or could have prevented a nuclear system from performing its safety function as described in the Technical Specifications. For each such occurrence, the licensee shall promptly notify by telephone or telegraph, the Director of the appropriate Atomic Energy Commission Regional Compliance Office listed in Appendix D of 10 CFR 20 and shall submit within ten (10) days a report in writing to the Director, Division of Reactor Licensing (hereinafter, Director, DRL) with a copy to the Regional Compliance Office."

Contrary to the above:

The Commission was not notified of the failure of the Log Channel (identified as one of the "Minimum Reactor Safety Circuits" by Technical Specification F.5.) on September 23, 1984, while the reactor was being operated at power.

This is a Severity Level V Violation.

Pursuant to the provisions of 10 CFR 2.201, you are required to submit to this office within thirty days of the date of this Notice a written statement or explanation in reply, including for each item of noncompliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

December 09, 1984

Dated

C. E. Norelius

C. E. Norelius, Director
Division of Reactor Projects

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-264/84-01(DRP)

Docket No. 50-264

License No. R-108

Licensee: Dow Chemical U.S.A.
1602 Building
Midland, MI 48640

Facility Name: Dow TRIGA Reactor

Inspection Conducted: October 24-26, 1984

Inspectors:

J. E. Hyder
J. E. Hyder
Los Alamos National Laboratory
Safety Assessment Group

11/19/84
Date

K. R. Ridgway
K. R. Ridgway
Nuclear Regulatory Commission
Region III

11/29/84
Date

Reviewed by:

C. C. Thomas
C. C. Thomas
Los Alamos National Laboratory
Safety Assessment Group

11/20/84
Date

Approved by:

E. R. Schweibinz
E. R. Schweibinz
Nuclear Regulatory Commission
Technical Support Section

12-04-84
Date

Inspection Summary

Inspection on October 24-26, 1984 [Report No. 50-264/84-01(DRP)].

Areas Inspected: Routine, unannounced inspection of records, logs, and organization; review and audit functions; requalification training; procedures; surveillance activities; experiments; fuel-handling activities; radiation control practices; radwaste management program; and follow-up of two licensee event reports. The inspection involved 14 inspector-hours onsite by 1 NRC contractor inspector and 14 inspector-hours onsite by 1 NRC inspector including 0 inspector-hours onsite during off-shifts.

Results: One item of noncompliance was identified in the areas inspected: the Commission was not notified of the failure of a required safety circuit while the reactor was operating at full licensed power (Paragraph 7).

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DETAILS

1. Persons Contacted

- *D. L. Berry, Research Manager, Inorganic Analysis, and
Chairman, Reactor Operations Committee
- *C. W. Kocher, Reactor Supervisor
- *K. J. Kelly, Assistant Reactor Supervisor
- T. J. Quinn, Senior Reactor Operator
- T. W. Parsons, Health Physicist
- *C. Vaughn, Jr., Industrial Hygienist

*Indicates those present at the exit interview.

2. General

This inspection, which began at 1:00 p.m. on October 24, 1984, was conducted to examine the overall program at the Dow TRIGA Reactor. However, this inspection did not examine the security and material accountability and control activities. The facility was toured shortly after arrival, and the conditions of the facility were found to be acceptable.

The Dow TRIGA Reactor is a part of the Analytical Laboratory and formerly was used almost exclusively as a neutron source for activation analysis. It is now used 15 to 20% of the time as a radiation source to study the effect of radiation on materials. The reactor is used almost daily and, frequently, several times per day.

3. Organization, Logs, and Records

The facility organization was reviewed and verified to be consistent with the Technical Specifications and the Safety Analysis Report (1966). The minimum staffing requirements were verified to be present during reactor operation and fuel handling operations.

The reactor logs and records were reviewed to verify that

- a. required entries were made,
- b. significant problems or incidents were documented,
- c. the facility was being maintained properly, and
- d. records were available for inspection.

D. L. Berry has replaced P. J. Knoll as Research Manager of Inorganic Analysis and Chairman of the Reactor Operations Committee (ROC).

No items of noncompliance or deviations were identified during this part of the inspection.

4. Reviews and Audits

The licensee's review and audit program records were examined by the inspectors to verify the following.

- a. Reviews of facility changes, operating and maintenance procedures, design changes, and unreviewed experiments had been conducted by a safety review committee as required by Technical Specifications or Hazards Summary Report.
- b. The review committee and/or subcommittees were composed of qualified members, and quorum and frequency of meeting requirements had been met.
- c. Required safety audits had been conducted in accordance with Technical Specifications requirements, and any identified problems were resolved.

The License and Technical Specifications do not require internal audits; however, the Industrial Hygiene Services department reviews radiation safety practices at the Reactor Laboratory.

No items of noncompliance or deviations were identified in this portion of the inspection.

5. Requalification Training

The inspector reviewed procedures, logs, and training records and interviewed personnel to verify that the requalification training program was being carried out in conformance with the facility's approved plan and NRC regulations. Requalification examinations were conducted during January of 1982, 1983, and 1984.

One Licensed Senior Reactor Operator terminated his role with the reactor facility before the January 1984, Requalification Examination.

No items of noncompliance or deviations were identified in this section of the inspection.

6. Procedures

The inspector reviewed the licensee's procedures to determine if procedures were issued, reviewed, changed or updated, and approved in accordance with Technical Specifications and SAR requirements.

This review also verified that

- a. procedure content was adequate to safely operate and maintain the facility;
- b. responsibilities were clearly defined; and
- c. required checklists and forms were used.

The inspector determined that the required procedures were available and that the contents of the procedures were adequate. Minor revisions have been made in several procedures, with all such revisions being reviewed and approved by the ROC.

Several minor changes have been made in the reactor instrumentation and controls (for example, modification of linear and per cent power scram test circuits). Although the minutes of the ROC indicate the committee was made aware of the proposed changes, they do not reflect an approval before the change. The licensee agreed that, in the future, prior committee approval would be documented clearly. [Open Item 50-264/84-01-01].

No items of noncompliance or deviations were identified in this portion of the inspection.

7. Surveillance Activities

The inspectors reviewed procedures, surveillance test schedules, and test records, and discussed the surveillance program with responsible personnel to verify that

- a. when necessary, procedures were available and adequate to perform the tests,
- b. tests were completed within the required time schedule, and
- c. test records were available.

The previous operational inspection (50-264/81-02) identified some deficiencies in the licensee's maintenance documentation (Open Item 50-264/81-02-01). Although the licensee has increased the details in their maintenance records, they do not specify when or how a problem is identified or what checks or calibrations confirm the equipment has been repaired. This remains an open item.

A comparison of the Maintenance Log and the Daily Reactor Operation Log revealed that in September 23, 1983, while the reactor was at power, the "Log Channel" failed. The reactor was promptly "scrammed." This channel is identified as one of the "Minimum Reactor Safety Circuits" by the Technical Specifications F. 5. Contrary to License Condition 3.D.(1), the licensee failed to notify the Commission of incident "which could have prevented a nuclear system from performing its safety function" (Noncompliance Item 50-264/84-01-02). The licensee acknowledged that this event had not been reported to the NRC, explaining that having scrambled the reactor promptly, they felt that safety had not been compromised.

8. Experiments

The inspectors verified the following by reviewing experiment records and other reactor logs.

- a. Experiments were conducted using approved procedures and under approved reactor conditions.
- b. New experiments or changes in experiments were reviewed properly and approved.
- c. The experiments did not involve an unreviewed safety question.
- d. Experiments involving potential hazards or reactivity changes were identified in the procedures.

- e. Reactivity limits were not or could not have been exceeded during the experiment.

No items of noncompliance or deviations were identified during this part of the inspection.

9. Fuel Handling Activities

The facility fuel handling program was reviewed by the inspector. The review included verifying approved procedures for fuel handling and their technical adequacy in the areas of radiation protection, criticality safety, Technical Specifications, and security plan requirements. The inspectors determined, by records review and discussions with personnel, that fuel-handling operations and startup tests were carried out in conformance with the licensee's procedures.

During early January of each year, as part of the requalification training program, all licensee operators participate in the inspection of each fuel element and each control element.

No items of noncompliance or deviations were identified during this part of the inspection.

10. Radiation Control

The inspector reviewed records, interviewed personnel, and made observations and independent surveys to verify that radiation controls were being carried out in accordance with the license and NRC regulations. The areas covered were

- a. posting and labeling of restricted areas and radioactive materials,
- b. control of irradiated samples,
- c. calibration of radiation-detection instruments,
- d. required periodic dose and contamination surveys,
- e. exposure records of personnel, and
- f. posted areas of the facility.

The licensee has established an instrument calibration program (now semi-annual for most instruments); this closes Open Item 50-264/81-02-02. Also, radiation and contamination surveys have been performed monthly since the previous inspection; this closes Open Item 50-264/81-02-03.

The fixed-position area radiation monitor above the reactor is calibrated semi-annually by the reactor staff using a reported 9.2-mg Ra source. The exact history and thus "certification" of this Ra source could not be determined. The licensee agreed to verify the "certification of the source," calibrate this source, or replace this source with one of proven strength. (Open Item 50-264/84-01-03).

No items of noncompliance or deviations were identified during this portion of the inspection.

11. Radwaste Management

The licensee had not released any liquid radioactive wastes since the last radwaste inspection in June 1983 [50-264/83-02(DRMSP)].

The facility has no gaseous effluent monitor because calculations in the Safety Analysis Report demonstrated that 10 CFR 20 offsite limits would not be exceeded with continuous pneumatic sample operation. The pneumatic sampler is used only a few hours per week. The air in the reactor room is sampled continuously for particulate activity. Solid waste is held for decay and monitored before removal from the facility. Samples that do not decay promptly (still radioactive, after about a year) are transferred to NRC By-Product Material License No. 12-00265-06. This material then is packaged and shipped to a licensed disposal site in accordance with applicable regulations.

12. Licensee Event Report Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

By letter dated April 28, 1982 (Event Report 82-01), the licensee informed Region III that on April 21, 1982, while the reactor was operating at a steady-state power level of 5 W, one of the linear safety channels had been deliberately disabled. During this inspection, the operator acknowledged that his actions had been motivated by a desire to determine the response of the ion chamber to loss of compensating voltage, and it was only later that he realized that he had violated Technical Specification F.5. The Reactor Supervisor stated that, in the future, any proposed new or unusual test will be reviewed by the ROC before any actions. This Event Report is considered closed.

By letter dated October 20, 1982 (Event Report 82-02), the licensee notified Region III that on October 6, 1982, after the reactor had been shut down, the Continuous Air Monitor (CAM) (required by Technical Specification A.3.) was found to be inoperable, and it was assessed that the CAM had not been functioning during at least part of the reactor run. The unit was repaired and has functioned adequately since. This Event Report is considered closed.

No items of noncompliance or deviations were identified in this section of the inspection.

13. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 26, 1984, and summarized the scope and findings of the inspection.

The following specific matters were discussed.

1. The failure to properly notify the Commission of an incident that could have prevented a nuclear system from performing its safety function (Sec. 7).
2. The lack of recorded ROC approvals before changes in the reactor facility (Sec. 6).
3. The need for more details in the maintenance log (Sec. 7).
4. The necessity of confirming the strength of the instrument calibration source (Sec. 10).

UNITED STATES ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE

INSPECTION FINDINGS AND LICENSEE ACKNOWLEDGMENT

E III Re 3

1. LICENSEE WELLMAN DYNAMICS CORPORATION 801 ANDRE STREET BAY CITY, MICHIGAN 48206	2. REGIONAL OFFICE REGION 3 DIV. OF COMPLIANCE US ATOMIC ENERGY COMM. 702 ROOSEVELT ROAD CLEVELAND, ILL. 60137
3. LICENSE NUMBER(S) STB-136 <i>40-1790</i>	4. DATE OF INSPECTION 5-21-70

B. INSPECTION FINDINGS

- ☒ A. No item of noncompliance was found.
- ☐ B. Rooms or areas were not properly posted to indicate the presence of a RADIATION AREA.
10 CFR 20.203(b) or 34.42
- ☐ C. Rooms or areas were not properly posted to indicate the presence of a HIGH RADIATION AREA.
10 CFR 20.203(c) (1) or 34.42
- ☐ D. Rooms or areas were not properly posted to indicate the presence of an AIRBORNE RADIOACTIVITY AREA.
10 CFR 20.203(d)
- ☐ E. Rooms or areas were not properly posted to indicate the presence of RADIOACTIVE MATERIAL.
10 CFR 20.203(e)
- ☐ F. Containers were not properly labeled to indicate the presence of RADIOACTIVE MATERIAL.
10 CFR 20.203(f) (1) or (f) (2)
- ☐ G. A current copy of 10 CFR 20, a copy of the license, or a copy of the operating procedures was not properly posted or made available. 10 CFR 20.206(b)
- ☐ H. Form AEC-3 was not properly posted. 10 CFR 20.206(c)
- ☐ I. Records of the radiation exposure of individuals were not properly maintained. 10 CFR 20.401(a) or 34.33(b)
- ☐ J. Records of surveys or disposals were not properly maintained. 10 CFR 20.401(h) or 34.43(d)
- ☐ K. Records of receipt, transfer, disposal, export or inventory of licensed material were not properly maintained.
10 CFR 30.51, 40.61 or 70.51
- ☐ L. Records of leak tests were not maintained as prescribed in your license, or 10 CFR 34.25(c)
- ☐ M. Records of inventories were not maintained. 10 CFR 34.26
- ☐ N. Utilization logs were not maintained. 10 CFR 34.27

William H. Schultz
AEC Compliance Inspector

6. LICENSEE'S ACKNOWLEDGMENT

The AEC Compliance Inspector has explained and I understand the items of noncompliance listed above. The items of noncompliance will be corrected within the next 30 days.

0108210483 8pp

(Date)

(Licensee Representative — Title or Position)

ORIGINAL: LICENSEE. COPIES: ☐ CO REGION ☐ CO HEADQUARTERS ☐ CO ENFORCEMENT

mailed 5-26-70

I-1

Wellman Dynamics Corporation
Bay City, Michigan
May 21, 1970

HEALTH PHYSICS ANALYSIS

The level of production has decreased since the last reinspection and there has also been a significant reduction in the concentration of airborne thorium. A complete survey was made of the operations by G. Hoyt Whipple and T. Jordan Powell and the results were reported to the licensee in a report dated May 7, 1970. This recent survey showed the levels of airborne radioactivity in restricted areas are well below the levels which are permitted in unrestricted areas. Also, the amounts of removable contamination is very low in the processing areas.

In addition to the surveys which are made by consultant physicists, the licensee also maintains good records which show the scope of the program and the amounts of thorium which are used.

It is the opinion of the AEC representative that this source material program is being conducted with adequate regard for radiation safety.

REPORT OF INSPECTION

1. Name and address of licensee

Wellman Dynamics Corporation

801 Andre Street

Bay City, Michigan 48706

2. Date of inspection

May 21, 1970

3. Type of inspection

Re. # 3

4. License number(s), docket number(s), number and date of last amendment for each license. Category and Priority of each license

STB-136, dated July 31, 1967 E III

5. Date of previous inspection

10-9-68

6. Is "Company Confidential," or proprietary, or classified information contained in report?
Yes _____ No XXXXX
(Specify paragraphs) _____

7. Scope of inspection

This was a complete routine reinspection of this source material program.

8. W. H. Schultz
Inspector
JM Allen
Reviewer
- 5-27-70
Date of Report
6-16-70
Date of Review

Licensee Wellman Dynamics Corporation

Summary

The licensee is currently engaged in a small scale operation for the manufacture of magnesium - thorium castings containing less than 4% thorium. There has been no changes in the program except that thus far in 1970 there has been a significant reduction in the amount of thorium being used because of the reduced demand for magnesium - thorium castings. No items of noncompliance were noted.

Noncompliance and Safety Items

None

Unusual Occurrences

None

Status of Previously Reported Noncompliance or Safety Items

During the 10-9-68 reinspection it was noted that the thorium at the end of calendar year amounted to 5,168 pounds although the license authorized only 4,000 pounds, contrary to Item No. 7 of the License. During the 5-21-70 reinspection it was noted that the 1969 ending inventory was only 2,027 pounds and Mr. Simmons stated that since the last inspection they had not exceeded a maximum possession of 4,000 pounds of thorium at any one time.

Management Interview

All information in this report was furnished by Mr. Stanley J. Simmons, Industrial Relations Director and the individual responsible for the program. At the conclusion of the inspection the AEC representative informed Mr. Simmons that no items of noncompliance were noted and form AEC-591 was issued.

Licensee Wellman Dynamics Corporation

A. Participants

Mr. S. J. Simmons is responsible for keeping all records relating to this
licensed program and for supervising the use and disposal of all source
material.

B. Scope of License Program

There has been no change in the program since the last reinspection except
that the amount of magnesium - thorium production has decreased .

C. Organization

No change since the last reinspection.

D. Administrative Control

No change since the last reinspection.

E. Use of Material

The licensee uses thorium obtained from Magnesium Electron, Inc., New York
City in the form of 40% thorium alloy. This material "ingot hardner" is
alloyed with magnesium and the final alloy contains less than 4% thorium.
The licensee uses this material for manufacturing castings which are then
sold to customers for final finishing.

Licensee Wellman Dynamics Corporation

F. Facilities

No change since the last reinspection.

G. Equipment

No change since the last reinspection.

H. Radiological Safety Procedures

The ingot hardner is received and stored in closed metal drums in an area which is occupied only a few minutes each month. Rotary filing of castings is done in a hood which is provided with water filtration.

I. Personnel Monitoring and Exposure to External Radiation

No personnel monitoring is used based on an evaluation which was made by G. Hoyt Whipple and J. W. Baum. The results of the evaluation were shown in a report dated June 3, 1964. A new complete survey was made by G. Hoyt Whipple and T. Jordan Powell and the results were shown in a report dated May 7, 1970. The survey showed direct rad. level of 10-15 mr/hr at surface of the 100# drum

- J. Exposure of Employees to Concentrations of Radioactive Materials (Cont. Para. S)
The May 7, 1970 survey; the results of breathing zone samples taken at all process locations. The maximum concentration was 18.0×10^{-13} uCi/cc which was in the sanding area. All others were significantly less. Smear survey showed a maximum surface contamination of 18 dpm/100cm² on the floor of the melting area.

Licensee Wellman Dynamics Corporation

K. Effluents to Unrestricted Areas

All well within Part 20 limits. The concentrations of airborne activity were
in the restricted areas were well below those permitted for unrestricted
areas.

L. Disposals

No change in the disposal procedures since the last reinspection. The waste
sludge containing thorium is stored in a dumpster container and is then taken
to the Dow Chemical Co. waste storage area which is fenced off and posted.
Preliminary measurements made by Whipple show the concentration of thorium
is less than 0.05%. Therefore, it might be permissible for the licensee to
dispose of the material by transfer to an unlicensed disposal site. No material

M. Miscellaneous Surveys, Evaluations and Records will be sent to Dow after Aug.

See Para. I, J, K, and L

N. Special License Conditions

License conditions were discussed with Mr. Simmons and based on his state-
ments, a review of the records and an inspection of the facilities the licensee
is complying with license conditions.

O. Posting and Labeling

All posting and labeling is in accordance with applicable sections of
10 CFR 20.203.

Licensee Wellman Dynamics Corporation

P. Independent Measurements

None

Q. Operations Observed

None

R. Incidents, Overexposures, Theft or Loss, Equipment Malfunction

None

S. Other Information or Continuation from Previous Paragraphs

(Continued from Para. I) and less than 1 mr/hr at 1 foot from the drum. A survey was also made of the entire inventory in storage (an array of 69 drums) and showed 15-20 mr/hr at the center of the array, 4-5 mr/hr at 2 feet from the array and less than 1 mr/hr at 10 feet from the array.

WELLMAN DYNAMICS CORPORATION · 801 ANDRE STREET · BAY CITY MICHIGAN 48706 · PHONE (517) 684-0900

September 23, 1971

U.S. Atomic Energy Commission
Div. of Compliance, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Reference: License No. STB-136
Thorium

Gentlemen:

Please advise the procedure to follow in transferring the above license to a new plant location. We anticipate moving from our plant facilities in Bay City, Michigan, to another state.

We request permission to move our inventory of thorium hardener and also transfer the license to our new location in Iowa. The present company in Michigan would retain its same identity at the new plant our of state and would engage in the same business.

Very truly yours,

WELLMAN DYNAMICS CORPORATION



S. J. Simmons
Industrial Relations Director

SJS:jsl

~~2148214484~~ 2/pj

SEP 27 1971

MEMO ROUTE SLIP Form AEC-95 (Rev. May 14, 1947) AECM 0240		See me about this. Note and return.	For concurren For signature.	For action. For information.
TO (Name and unit) Cecil Buchanan Materials Branch DML	INITIALS DATE	REMARKS SUBJECT: WELLMAN DYNAMICS BAY CITY, MICHIGAN LICENSE NO. STB-136		
TO (Name and unit)	INITIALS DATE	REMARKS Attached for your action is a letter dated September 23, 1971, requesting information		
TO (Name and unit)	INITIALS DATE	REMARKS on transferring plant sites.		
FROM (Name and unit) James M. Allan CO: III	REMARKS I-3			
PHONE NO.	DATE 9-29-71			



UNITED STATES
ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

JAN 7 1972

DML:MB:RLL

40-564

STB-433, Amendment No. 2

40-1790

Wellman Dynamics Corporation
ATTN: Mr. S. J. Simmons, Director
Industrial Relations
P. O. Box 147, U. S. Route 34
Creston, Iowa 50801

Gentlemen:

In accordance with your application dated December 14, 1971, Items 1, 2 and 8 of Source Material License No. STB-433 are hereby amended to read as follows:

1. Licensee's Name

Wellman Dynamics Corporation

2. Licensee's Address

U. S. Route 34
Creston, Iowa 50801

8. Authorized Use

Manufacture of thorium-magnesium alloy in accordance with the statements, representations, and conditions specified in the applications dated December 18, 1964, and October 25, 1967, submitted by the licensee's predecessor, and the licensee's application dated December 14, 1971.

All other conditions of this license shall remain the same.

~~6140210466~~ zpp

I-4

JAN 7 1972

In order to consider the termination of Source Material License No. STB-136 which covers your operations at Bay City, Michigan, we need the information outlined in the enclosure to this letter.

FOR THE U. S. ATOMIC ENERGY COMMISSION

Original signed by
Robert L. Layfield

Robert L. Layfield
Materials Branch
Division of Materials Licensing

Enclosure:

Guidelines for Decontamination of
- Facilities and Equipment Prior
to Release for Unrestricted Use
or Termination of Licenses for
Byproduct, Source or Special
Nuclear Material

not in file

DISTRIBUTION:

PDR
State Health
Docket File
Branch R/F
Division R/F
RLayfield's R/F
CO:III
CLHilliard
CRBuchanan, DNL
ACabell, DR:ADM

GRESS OFFICE	DNL:NB	DNL:NB				
4063						
7 SURNAME	RLayfield:mla	CRBuchanan				
1/3/72 DATE	1/1/72	1/1/72				

MAY 17 1972

DML:MB:RL
(40-1790)

Wellman Dynamics Corporation
ATTN: Mr. S. J. Simmons
Director of Industrial Relations
P. O. Box 147
U. S. Route 34
Creston, Iowa 50801

Gentlemen:

In accordance with your letter dated April 14, 1972, and
pursuant to Title 10, Code of Federal Regulations, Part 40, AEC
License No. STB-136 is hereby terminated.

FOR THE U. S. ATOMIC ENERGY COMMISSION

Original signed by
Robert L. Layfield

Robert L. Layfield
Materials Branch
Division of Materials Licensing

DISTRIBUTION:

Document Room
State Health
Docket File ←
Branch R/F
Division R/F
RL Layfield's R/F
CO:III
CL Hilliard
CR Buchanan, DML
ACabell, DR:AO

~~0108210458~~ 1/2

I-5

CRESS	OFFICE ▶	DML:MB	DML:MB			
1001 R18 jj		RL Layfield:jj	CR Buchanan			
4/27/72	SURNAME ▶	4/28/72	5/2/72			
DATE ▶						



DOCKET NO. 40-1420
WELLMAN DYNAMICS CORPORATION

Regulatory

File Cy.

April 14, 1972

Mr. Robert L. Layfield
U. S. Atomic Energy Commission
Division of Materials Licensing
Washington, D. C. 20545



Dear Mr. Layfield:

The purpose of this letter is to request the termination of our license STB-136 and the release, for unrestricted use, of our facilities at 801 Andre Street, Bay City, Michigan. These facilities will revert back to Dow Chemical Company. We expect to vacate these facilities on May 15, 1972.

A termination survey of our Bay City facilities has been made by T. Jordan Powell and G. Hoyt Whipple of the University of Michigan and a copy of their report is enclosed. You will note that the contamination levels found are well below AEC guidelines for the release of thorium contaminated facilities. The thorium bearing waste mentioned in the report has been disposed of by burial under AEC regulation 10CFR20.304 and our agreement with the State of Michigan. Other thorium alloy and scrap has been transferred to our facilities in Creston, Iowa under our new license STB-433.

If you have any questions or should wish to visit our facilities, please feel free to call.

Sincerely,

WELLMAN DYNAMICS CORPORATION

S. J. Simmons
S. J. Simmons
Director of Industrial Relations



SJS:dd
Enc.

~~6100210463~~ 7pp

(())

MEMORANDUM

April 5, 1972

TO: S. J. Simmons
 Wellman Dynamics Corporation
 P.O. Box 147, U. S. Route 34
 Creston, Iowa 50801

FROM: T. Jordan Powell and G. Hoyt Whipple
 School of Public Health
 University of Michigan
 Ann Arbor, Michigan 48104

SUBJECT: Radiological Survey of the Bay City
 Facilities of the Wellman Dynamics Corporation

This memorandum consists of the following sections:

- I. Introduction
- II. Survey Procedures, Analyses and Results
- III. Discussion of Results and Recommendations
- IV. References.

1. INTRODUCTION

The Wellman Dynamics Corporation has been engaged in the production and processing of alloys containing less than four percent thorium. These operations have included production of the alloys from a master alloy containing 40 percent thorium, and casting, sandblasting, sawing, grinding, sanding, and polishing the alloys.

This memorandum concerns a radiological survey of Wellman facilities used in the production and processing of thorium containing alloys. It summarizes the measurements made at the Bay City (801 Andre Street) plant on March 7, 1972.

II. SURVEY PROCEDURES, ANALYSES AND RESULTS

A. Surface Contamination

All accessible drain lines and various floor and work surfaces were surveyed in order to determine the general level of thorium contamination. In situ measurements to determine the gross level of surface contamination were made using an Eberline PAC 36 portable survey meter with an AC-21 alpha probe. Removable activity was determined by taking dry smears with Whatman 42 filter disks and counting the smears in a Sharp Laboratories Low Beta II counter.

The results of these measurements shown in Table 1 are based on the following formula:

$$A = \frac{100 C}{SG}$$

where A = alpha activity, in dpm/100 cm²

C = net alpha counting rate, in cpm

S = surface area measured, in cm²

G = counter efficiency, in cpm/dpm

These results are discussed in Section III.

B. Thorium Inventory and Waste

1. Thorium Inventory. At the time of the survey, a considerable quantity of thorium was at the Bay City plant in buildings 6 and 15. Four barrels, two containing the 40 percent thorium

master alloy and two rusted shut so that their contents could not be determined, were found adjacent to the master alloy storage area. Other thorium bearing material in the form of scrap castings, sludge pot metal, and rigging was found in part bins in buildings 6 and 15. HERE

2. Thorium Bearing Waste. Thorium bearing waste in the form of melting pot sludge was found in the dump just outside of building 7; and, in building 7, thorium sludge had been dumped at the east end of Melt Room 0 and Bay 12A.

III. DISCUSSION OF RESULTS AND RECOMMENDATIONS

A. Surface Contamination

AEC guidelines (1) for the release of thorium contaminated areas for unrestricted use specify that the level of alpha contamination may not exceed 10,000 dpm/100 cm² total and 1,000 dpm/100 cm² removable. The levels of contamination found in this survey and given in Table 1 are well below these limits and no decontamination is necessary.

B. Thorium Inventory and Waste

In order to complete the preparation of your Bay City plant for unrestricted use, it is necessary that you remove from the plant the thorium alloy and waste described in Section II.B of this memorandum. At the time of our survey Mr. Edward Kopka of your staff advised us that the master alloy, scrap castings,

rigging, and sludge pot metal that we found were scheduled for shipment to your Creston plant. Once this is done, all that remains is to dispose of the thorium bearing melting pot sludge. We recommend that it be disposed of by burial in accordance with the AEC regulation 10CFR20.304 (2) and your agreement with the Michigan State, Department of Public Health (3).

Jordan Powell
T. Jordan Powell

G. Hoyt Whipple
G. Hoyt Whipple

Encl.
TJP:eb

TABLE 1
THORIUM CONTAMINATION LEVELS AT THE
BAY CITY PLANT OF WELLMAN DYNAMICS CORPORATION

Sample Location	Contamination	
	Total (dpm α /100 cm ²)	Removable (dpm α /100 cm ²)**
Building 15 (storage):		
Master alloy storage	< 500	0.5
Floors, general	< 500	0.2
Building ? (foundary):		
Melt room C, floors	< 500	0.8
" " C, weigh station	< 500	2.3
Carting area, floors	< 500	0.8
Bandsaw area, floors	< 500	0.3
Building 6 (finishing):		
Milling area, floors	< *500	0.4
Grinding area, floors	< 500	0.3
Grinding bench, work surface	< 500	0.3
Grinding hood, work surface	< 500	0.2
Sanding area, floors	< 500	0.1
Pickling time, floors	< 500	0.4
Drains: pickling line	*	4.0
Zyglo	*	3.0
Chroming	*	0.1

*Drains not accessible for direct measurement.

**These numbers generally represent the average of two or more smears. In no case did an individual smear exceed six times the average.

17. REFERENCES

1. Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, U.S. Atomic Energy Commission, Division of Materials Licensing. April 22, 1970. .
2. Title 10, Code of Federal Regulations, Part 20.304.
3. Letter from James Canburn, Michigan State Department of Public Health, to S. J. Simmons, Wellman Dynamics Corporation. September 2, 1970.



ARGONNE NATIONAL LABORATORY

October 10, 1977

Mr. James Allen
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Jim:

Attached are results for analyses performed on samples submitted by members of the Region III staff. The results were previously reported by phone to the requester. This letter is to provide your office with a record of the results. If you have any questions on the data, please call.

Sincerely,

Jacob Sedlet
Occupational Health & Safety

JS:rk
Attachment

OCT 13 1977

~~6108210456~~ 3pp

I-9

Soil and Water Samples
Packing Lists No. AE 458 and 459 (9/2/77)

<u>Sample No.</u>	<u>Result</u>
PTS-1648 w 1	Normal Gamma Activity
PTS-1649 w 2	Normal Gamma Activity
PTS-1639 S 1	Normal Thorium Activity
PTS-1640 S 2	Normal Thorium Activity
PTS-1641 S 3	5 pCi ²²⁸ Th/g
PTS-1642 S 4	780 pCi ²²⁸ Th/g
PTS-1643 S 5	1200 pCi ²²⁸ Th/g
PTS-1644 S 6	10 pCi ²²⁸ Th/g
PTS-1645 S 7	Normal Thorium Activity
PTS-1646 S 8	1.2 pCi ²²⁸ Th/g
PTS-1647 S 9	3700 pCi ²²⁸ Th/g

NOTE: All measurements were made by gamma-ray spectrometry, so results for thorium-228 are based on the measurement of its decay products. The amount of thorium-232 depends on the time since the last separation of radium-228 (the first daughter of thorium-232) from thorium. The thorium-232/thorium-228 ratio reaches a maximum of about 2.4 about five years after the separation. This is the maximum error in a thorium-232 measurement based on thorium-228 when the state of equilibrium is unknown.

Changes in Thorium Regulations

Prior to 7/29/74, thorium activity was defined as 9000 ^{real}kp of natural thorium equals 1 curie of throrium natural(ie 1 curie of thorium 232 plus 1 real curie of thorium 228)

Burial pursuant to 10 CFR 20.304, prior to 7/29/74

12burials per year

1000 times 100 uCi , or 100 mCi per burial in real curies (4/30/75)

Appendix B Thorium natural

	Table I		Table II	
	Col 1	Col. 2	Col. 1	Col. 2
	air	water	air	water
	uCi/ml	uCi/ml	uCi/ml	uCi/ml
Prior to 7/29/74 (thorium curies)	S 3 E-11 I 3E-11	3E-5 3E-4	1E-12 1E-12	1E-6 1E-5
After 7/28/74 (real curies)	S 6E-11 I 6E-11	6E-5 6E-4	2E-12 2E-12	2E-6 2E-5

Appendix C

Prior to 7/29/74 50 mCi throrium natural in throrium curies

After 7/28/74 100 mCi throrium natural in real curies

De Minimum Limits for natural thorium

4/70	10,000 dpm/100 cm ²	total
	1000 dpm/100 cm ²	removable
12/75	1000 dpm/100 cm ²	average
	3000 dpm/100 cm ²	maximum
	200 dp /100 cm ²	removable



DOW CHEMICAL U.S.A.

September 18, 1980

LARKIN LABORATORY
1691 N. SWEDE RD.
MIDLAND, MICHIGAN 48640

Mr. James R. Miller, Chief
Standardization and Special
Projects Branch
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

PRINCIPAL STAFF	
DEA	DEA
D/3	D/3
D/3	D/3
✓	u/attachment
ROGEL	ROGEL
ROGEL	ROGEL

Dear Mr. Miller:

Per your request dated June 19, 1980, Dow Chemical U.S.A. has revised the Topical Report entitled, "The Dow System for Solidification of Low-Level Radioactive Waste from Nuclear Power Plants" dated March 1978, to include the information provided in Amendment 01 dated September 1978, Amendment 02 dated November 1978, and Amendment 03 dated February 1979. Special care was taken to assure that all information contained in the original report and each of the amendments was retained during the revision. At the same time it is our intent to provide a smooth flowing, understandable, complete working document, therefore, significant revision of Sections 3, 8, and 10 will be noted.

The accompanying carton marked DOW TRADE SECRETS, DNS-RSS-001-P-A contains 60 copies of the proprietary version of the report. These copies are also marked DNS-RSS-001-P-A and are to be handled in accordance with 10 CFR 2.790 as stated in your letter dated May 23, 1980.

The other carton marked DNS-RSS-001-NP-A contains 25 copies of the non-proprietary version of the report.

Efforts of the U.S. Nuclear Regulatory Commission staff which resulted in completing the review and acceptance of our Topical Report are appreciated. Please contact me if we can be of further assistance.

Sincerely,

J. B. Owen
J. B. Owen

Group Leader
Solidification Processes R&D
517-636-3388

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

fo

13 RIDS
LTR
T007 S 1/60
PROP
T007 S 1/6
NP
T008 S 1/1
I-13

8000220139

1p

File
HC 2660

August 17, 1981

MEMORANDUM FOR: D. K. Sly, IE

FROM: M. C. Schumacher, Chief, Independent Measurements and
Environmental Protection Section

SUBJECT: WELLMAN DYNAMICS
BAY CITY MICHIGAN
DOCKET 40-17; LICENSE STB-136

Attached are materials from our retired license file relevant to the termination of STB-136. The material includes a memorandum describing the closeout survey of the facility on March 7, 1972, and a copy of last inspection conducted May 21, 1970. It also includes a memorandum to the file for Dow Chemical Company License STB-527, currently in force, covering the facility wherein sludge from the Wellman operation was buried.

No site visit is contemplated. It is recommended that this license (STB-136) remain retired.

M. C. Schumacher, Chief
Independent Measurements and
Environmental Protection
Section

Attachment:
As stated

cc w/attachment:
W. Crow, NMSS
DMB

~~8148210450~~ 1P

I-14

OFFICE	RIII	RIII					
SURNAME	Schumacher/st	Paperiello					
DATE							



DOW CHEMICAL U.S.A.

MIDLAND, MICHIGAN 48640

September 4, 1975

U.S. Nuclear Regulatory Commission
Materials Branch
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
Division of Reactor Licensing
Washington, D.C. 20555

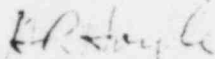
Region III, US N.R.C.
Office of Inspection and Enforcement
799 Roosevelt Road
Glen Ellyn, IL 60137

RE: N.R.C. License # 21-00265-02, ~~#21-00265-04~~, #21-00265-06,
#21-00265-07, #STB-527, R-108 (Docket #50-264) and
S.N.M. 1451

The purpose of this letter is to notify you of a change in chairmanship of the Dow Radiation Safety Committee, Midland Location. At the August 13, 1975, meeting of the Radiation Safety Committee I nominated D. D. DeLine, a committee member, for chairmanship of the committee. A vote of committee membership unanimously approved the nomination.

It is requested that a copy of all correspondence be sent in care of the Secretary of the Radiation Safety Committee, L. G. Silverstein, at 1803 Building, Midland, Michigan 48640.

Sincerely,


H. R. Hbyle
Radiation Safety Committee
HER Industrial Hygiene
1803 Building
517-636-2377

bjb

cc: D. D. DeLine, 47 Building

8507290139 ip

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



sent to JCB
9/11/75



DOW CHEMICAL U.S.A.

MICHIGAN DIVISION
MIDLAND, MICHIGAN 48640

October 8, 1982

Mr. Martin Schumacker
799 Roosevelt Road - NRC
Glen Ellyn, Illinois 60137

cc: L. W. Rampy, 1803 Building
R. M. Croyle, 474 Building

DECOMMISSIONING OF THE DOW/WELLMAN FOUNDRY SITE IN BAY CITY, MICHIGAN

The attached letter contains the summary and conclusions of the decommissioning work performed at the Dow/Wellman Foundry. I believe the site now meets the proposed NRC criteria for unrestricted use.

If you have any further questions on this, please contact Dr. L. W. Rampy or myself.

R.A. Olson

R. A. Olson
Dow Chemical Company
Industrial Hygiene Services
474 Building
Midland, Michigan 48640
(517) 636-5641

rg/enclosure

~~0303220479~~ gpp

I-16



OCT 12 1982

DECOMMISSIONING OF THE DOW/WELLMAN FOUNDRY SITE, BAY CITY, MICHIGAN

PROBLEM

In order to determine if the Dow/Wellman Foundry site was free from contamination, the Nuclear Regulatory Commission (NRC) conducted a decommissioning inspection on the Dow/Wellman Foundry site in Bay City, Michigan, on May 12 and 13, 1982. Thorium contamination was detected and Dow initiated cleanup activities. Following cleanup activities, Dow's Industrial Hygiene Services conducted a survey to verify the foundry site was free from significant thorium contamination.

CONCLUSIONS

1. The cleanup of the site resulted in removing 480 cubic yards of slightly contaminated soil. It was estimated that 6.76×10^5 kilograms of soil with an average activity of 30.1 pCi/g was removed. The total activity removed was 0.02 Ci (405 pounds) of Th-232.
2. The contaminated soil was transported to the NRC licensed thorium storage site on Dow's property in Bay City, Michigan.
3. Approximately 1,500 pounds of magnesium-thorium material was removed from the Aerospace America, Inc., and the Kerkau Manufacturing Plants.
4. Personnel exposure to radiation and radioactive materials during the cleanup activities were within the recognized guidelines.
5. The final decommissioning survey by Dow Industrial Hygiene Services personnel indicated that the foundry site now meets the proposed NRC criteria for unrestricted use.

CLEANUP ACTIVITIES

Soil

Dow initiated cleanup activities of the site in May 1982. Three contractor employees from Walraven Construction were instructed in radiation hazards as required by CFR 10.19.12, prior to the cleanup operation. The contractors wore protective clothing and film badges during the cleanup activities. Respirators were not worn based on air samples taken from previous work at the Bay City Sludge pile. Air sampling confirmed the lack of airborne activity. No detectable external radiation exposure was recorded on the film badges. Personnel exposure to radiation and radioactive materials were within the recognized guidelines.

The first area cleaned was around 4 and 5 Buildings. An Eberline PRM-7 Micro-R meter (approximate detection limit of 2 uR/hr) was used to detect contaminated areas. These areas were marked by Dow personnel and cleaned up by contractors using a backhoe, dump truck and shovels where necessary. A concrete buster was used to breakup a slab which covered some contamination. Sixteen (16), 10 cubic yard dump truck loads were removed from this area. The trucks were escorted to the Bay City Storage site located about two miles from the Foundry site where the material was deposited. Additional contaminated soil was removed south of the corner of Marquette and Andre Streets. This area was cleaned up using similar techniques. Thirty-two (32), 10 cubic yard dump truck loads were removed from this area. This material was also deposited in the Bay City Storage site. The areas where the contaminated soil was removed were backfilled with sand. Because of the low specific activity of the contaminated soil [0.00003 micro Ci/g], it was exempt from the Department of Transportation (DOT) requirements for shipping radioactive material. The DOT exemption limit is 0.002 micro Ci/g (49 CFR 173.39).

To estimate the activity removed from these two areas, composite samples were taken from the 48 dump truck loads. The samples were counted on a shielded Germanium/Lithium (GELI) detector for 30 minutes. The composite sample was analyzed to contain 30.1 pCi/g Th-232. The 48, 10 yard loads were estimated to contain 6.76×10^8 grams of soil (assuming 115 pounds/ft.³). The total activity removed was 0.02 Ci-Th 232. Assuming a specific activity of 1.09×10^{-7} Ci/gram, about 405 pounds of thorium-232 were added to the Bay City Storage site.

After the soil was removed and before the areas were backfilled with sand, a survey was conducted using the Micro-R meter. All of the areas surveyed were less than 20 micro uR/hr at 1 meter (background approximately 10 micro uR/hr). Based on the results of this survey, it was concluded that this section of the old Bay City foundry site met the proposed criteria for unrestricted use as published in the October 23, 1981, Federal Register, pages 52061-63. The proposed criteria for unrestricted use are as follows: (1) The external exposure rate should be less than 10 micro uR/hr above background at 1 meter. (2) The concentration of thorium should be less than 10 pCi/gram. The correlation between exposure rate and Th concentration for this survey was about 1 micro uR/hr per 0.5 pCi/gram.

Buildings

Approximately 1,500 pounds of magnesium-thorium metal were detected in old Building 1 occupied by Aerospace America, Inc., and in old Building 10 occupied by Kerkau Manufacturing Plant. The material was removed and replaced with non-thoriated material. The 1,500 lbs of thoriated material were stored under lock and key in Building 13, belonging to Dow. A final survey of both areas could detect no additional magnesium-thorium metal. Both buildings were considered to meet the proposed criteria for unrestricted use.

Docket No. 50-264

MAR 22 1977

The Dow Chemical Company
ATTN: Mr. D. D. DeLine
Chairman, Radiation
Safety Committee
47 Building
Midland, MI 48640

Gentlemen:

The enclosed IE Circular, No. 77-04 is forwarded for your information and use. The subjects covered by this Circular should be helpful to you in properly implementing the physical security systems needed for your facility to meet the requirements of 10 CFR Part 73. The illustrated Appendix is provided for the sake of clarity and does not constitute an endorsement of any manufacturer's specific product.

No written report to the NRC is required by this Circular. If you have any questions concerning this matter, contact the Director of this NRC Regional Office.

Sincerely,

James G. Keppler
Director

Enclosure: IE Circular
No. 77-04

cc w/encl:
Central Files
Reproduction Unit NRC 20b
PDR
Ronald Callen, Michigan
Public Service Commission

6009150645 epp

J-20

OFFICE	RIII	RIII <i>abx</i>	RIII			
SURNAME	Hind/jb	Fiorelli	<i>[Signature]</i>			
DATE	3/22/77					

INADEQUATE LOCK ASSEMBLIES

DESCRIPTION OF CIRCUMSTANCES:

During recent physical security inspections at nuclear fuel cycle and reactor facilities, it was discovered that the lock assemblies securing some material access areas and vital areas were inadequate, improperly installed, or inoperable for a lack of maintenance. In a number of instances, the deficiencies were cited as items of noncompliance. The specific findings included:

- (a) Doors secured only with locks having simple spring latches which could be readily depressed with a piece of plastic, a card, knife, or other thin instrument.
- (b) Doors secured with locks having dead latches which were ineffective due to poor installation or lack of maintenance. The installation tolerances for a dead latch are very critical and their anticipated service life quite limited.
- (c) Outswinging doors and inswinging double-doors without mullions, which were not equipped with astragals or guard plates to deter forcible attacks upon the latch or bolt.
- (d) Exterior or exposed lock cylinders which were not equipped with effective collars or cylinder guards to deter forcible attacks upon the cylinders.
- (e) Doors secured only by lock sets with cylinders mounted within the door knobs, making the doors very vulnerable to forcible attack.
- (f) Lock sets which did not engage their associated strike plates due to incorrect installation, adjustment, maintenance, or damage.
- (g) Doors without locks.

March 22, 1977

DISCUSSION:

10 CFR 73.2(f)(2) requires that openings in building walls be of construction and fastening of sufficient strength so that the integrity of the wall is not lessened by the opening. This requirement extends to vital areas (10 CFR 73.2(h)) and material access areas (10 CFR 73.2(j)). Thus, door locks must be of substantial construction and of such design, installation, and reinforcement that their neutralization or circumvention by common burglary techniques is precluded. Regulatory Guide 5.12, the Federal crime insurance guidelines, recent municipal codes and ordinances, and generally accepted practices within the profession of industrial building design and construction, advise that doors must be secured with a dead bolt. Further, in recognition of widely disseminated and publicized simple burglary techniques which can be accomplished with common tools without skill, the following limiting factors must be considered in determining whether the integrity of a vital area or material access area wall is maintained:

- (a) The door is secured with a dead bolt with either a one-inch lateral throw or multiple-vertical engagements with its strike.
- (b) Outswinging doors and inswinging double-doors without mullions, are equipped with securely mounted astragals or guard plates.
- (c) Exterior or exposed cylinders are rim, bored-auxiliary, or mortise lock mounted, and are protected with (1) a cylinder guard or (2) substantial collar which is tapered, extends beyond the face of cylinder, and rotates independently when torque is applied.
- (d) All lock sets and associated hardware are effectively installed and maintained.

Hardware illustrations and standard lock terminology are enclosed as Appendix A.

March 22, 1977

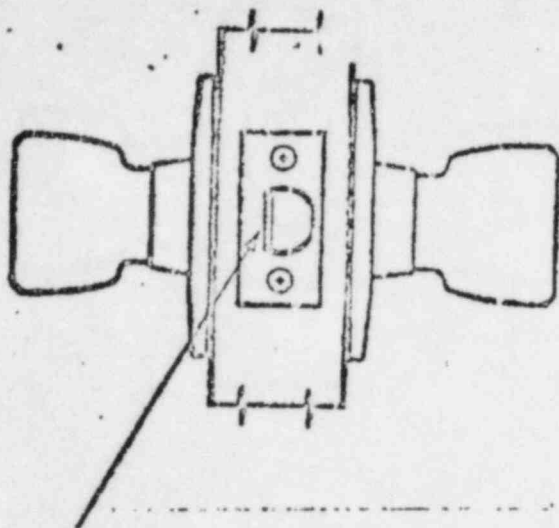
POSSIBLE SOLUTIONS:

The identified generic deficiencies may be eliminated by the comprehensive implementation of one or more of the following solutions, in consonance with the operational and safety considerations of the facility.

- (a) Institute measures to assure conformance with the four limiting factors cited in the Discussion paragraph, above.
- (b) Obviate lock inadequacies by barring the door from within with a wooden (min. 2" x 4") or pipe (min. 2" dia.) member extending solidly across both stiles and jambs.
- (c) Obviate lock and other possible deficiencies by eliminating the doorway and filling the resulting cavity with masonry or construction materials equal to or exceeding the composition of the wall.

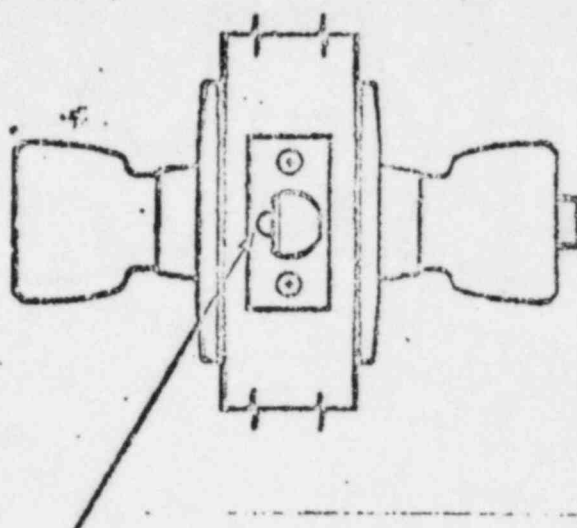
This information is provided for action you deem appropriate to insure that vital area and material access area doors are secured in a manner which does not lessen the integrity of the walls and other physical barriers.

Attachment:
Appendix A



NO DEADLATCHING
PIN

FIGURE 1
LATCH



DEADLATCHING PIN

FIGURE 2
DEAD LATCH

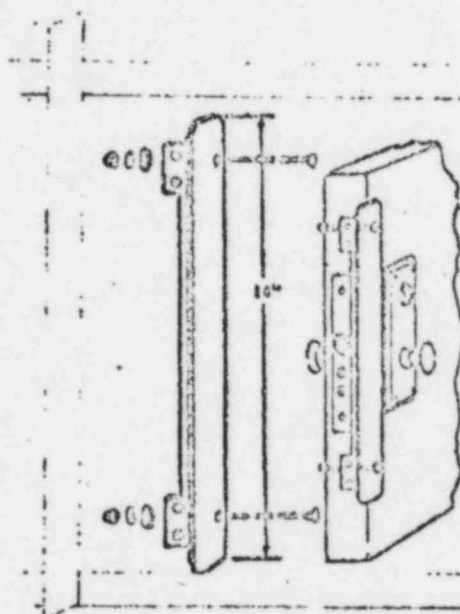


FIGURE 3
TYPICAL ASTRAGAL
OR GUARD PLATE

FIGURE 4
USE OF A
"SHOVEKNIFE"

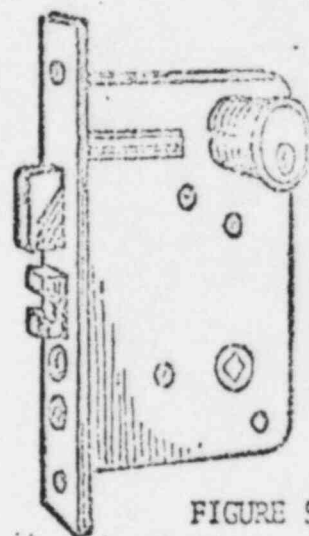
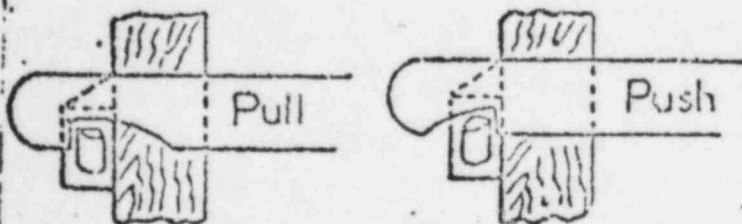


FIGURE 5
A SERIES 1000
MORTISE LOCK
AND LATCH SET

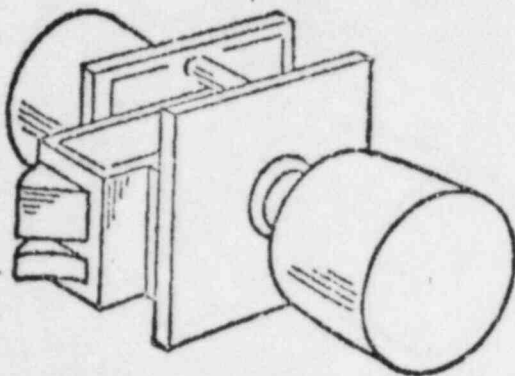


FIGURE 6
A SERIES 2000 PRE-ASSEMBLED
LOCK AND LATCH SET

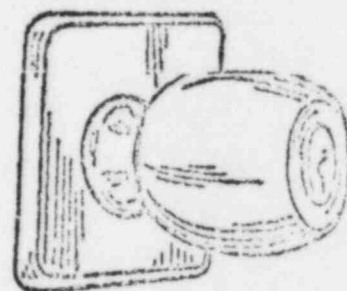


FIGURE 7
A SERIES 3000 INTEGRAL
LOCK AND LATCH SET

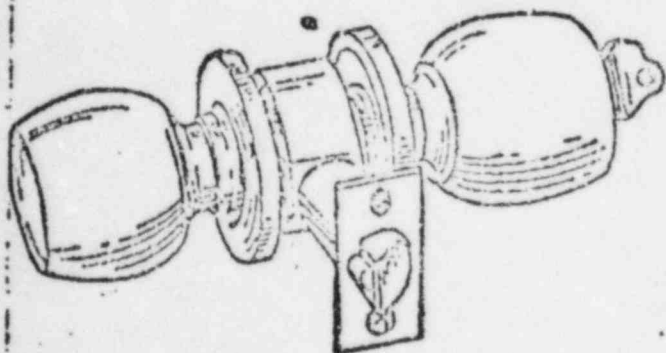


FIGURE 8
A SERIES 4000 BORED
LOCK AND LATCH SET

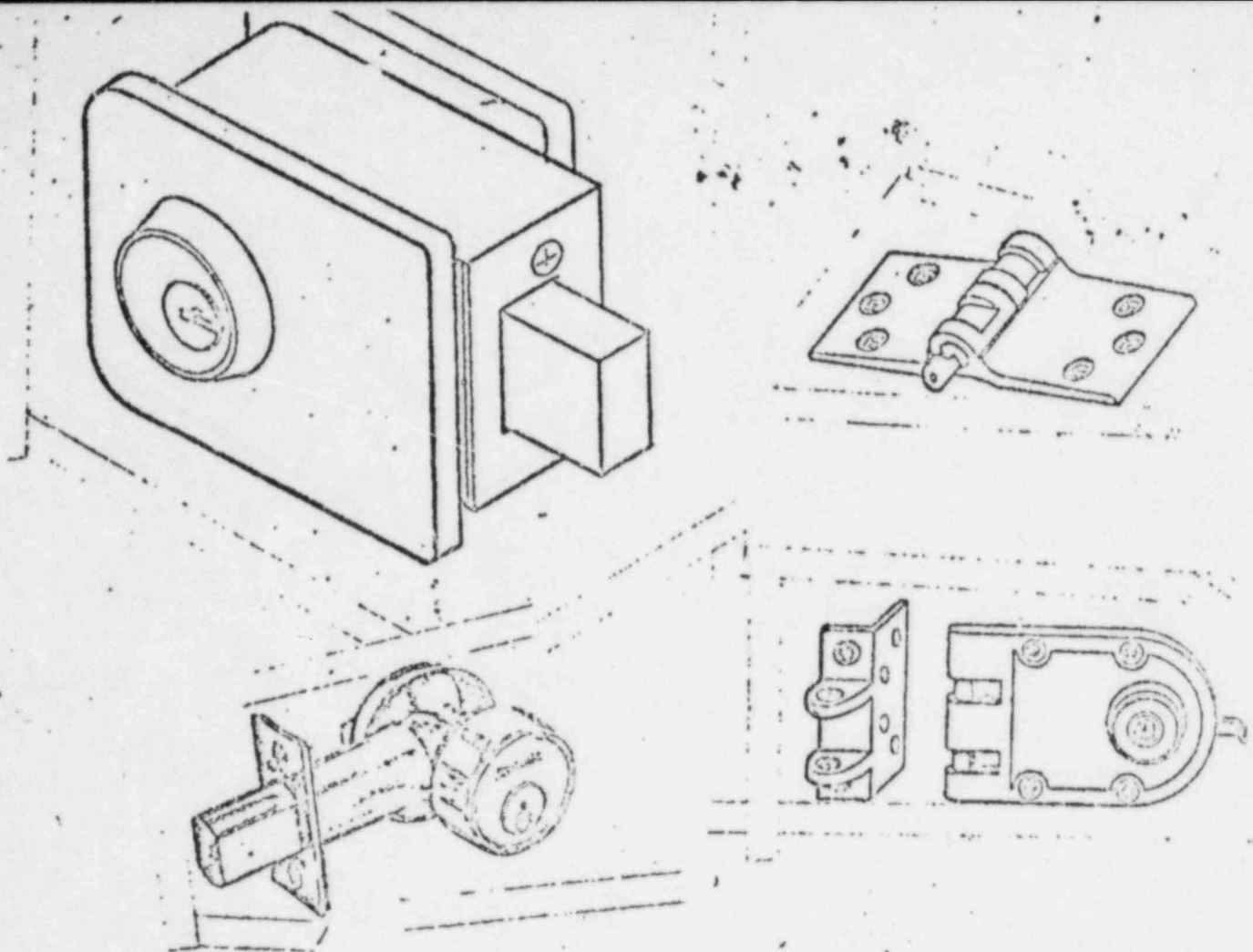


FIGURE 9
TYPICAL AUXILIARY DEAD LOCKS

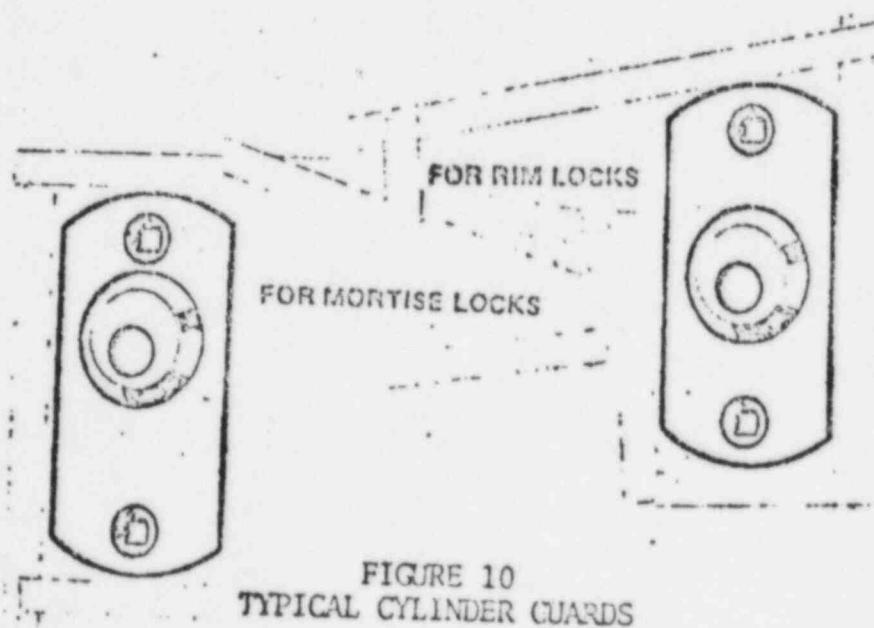
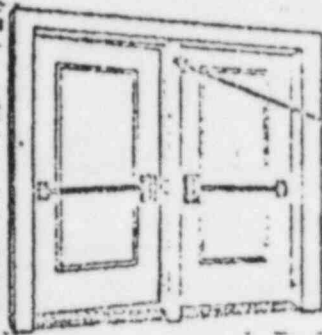
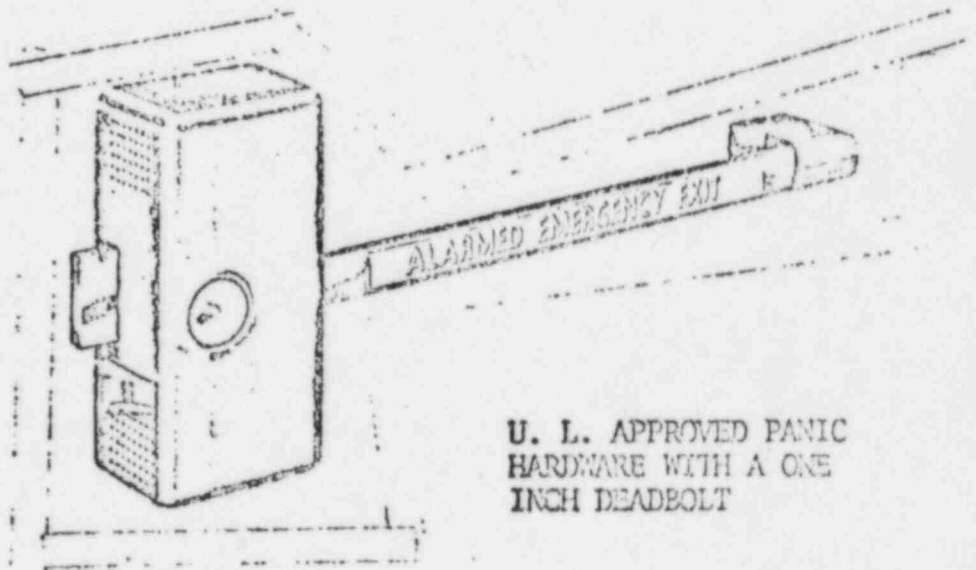


FIGURE 10
TYPICAL CYLINDER GUARDS



MULLION: STRUCTURAL DIVIDER
BETWEEN A PAIR OF DOORS

FIGURE 11



U. L. APPROVED PANIC
HARDWARE WITH A ONE
INCH DEADBOLT

FIGURE 12



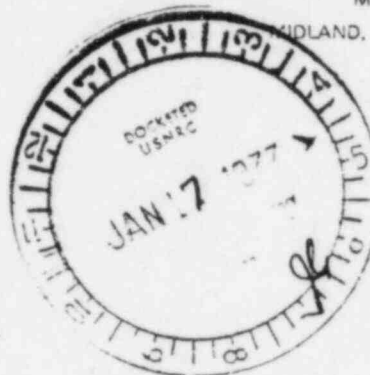
DOW CHEMICAL U.S.A.

January 12, 1977

MICHIGAN DIVISION
MIDLAND, MICHIGAN 48640

RELATED CORRESPONDENCE

Lawrence Brenner, Esquire
Counsel for NRC
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Brenner:

Enclosed are three news articles which, because they contain interviews with members of the Michigan Air Pollution Control Commission Staff and EPA, are being forwarded to you as a possible reflection of their views. I want to state, however, that sending these articles to you is being done solely as a courtesy to you, and is not meant to imply that Dow is taking any position as to the accuracy of the articles.

Sincerely,

L. F. Nute

L. F. Nute
Attorney

c

enclosures

cc: David J. Rosso, Esq. (with enclosures)
Myron M. Cherry, Esq. (with enclosures)
Service List (without enclosures)

~~8447314636~~ 2pp

J-19



SERVICE LIST

Mr. C. R. Stephens
Chief, Docketing and Service Section
Office of the Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Myron M. Cherry, Esquire
Suite 4501
One IBM Plaza
Chicago, Illinois 60611

David J. Rosso, Esquire
Isham, Lincoln & Beale
One First National Plaza
Suite 4200
Chicago, IL 60603

Dr. Emmeth A. Luebke, Member
Atomic Safety and Licensing Board Panel
Washington, D.C. 20555

Dr. J. Venn Leeds, Jr., Member
Atomic Safety and Licensing Board Panel
10807 Atwell
Houston, Texas 77096

Ms. Mary Sinclair
5711 Summerset Street
Midland, Michigan 48640

Mr. Steve Gadler, P.E.
2120 Carter Avenue
St. Paul, Minnesota 55108

Frederick J. Coufal, Esquire, Chairman
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



DOW CHEMICAL U.S.A.

March 15, 1976

MIDLAND, MICHIGAN 48640

Directorate of Regulatory Operations
US Nuclear Regulatory Commission
Region III, 799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Sir:

LICENSES R-108 (DOCKET #50-264), 21-00265-06, 21-00265-04,
21-00265-07 AND 21-000265-02

The purpose of this letter is to notify you of the latest changes in personnel and committee memberships related to and responsible for the licenses listed above. These changes are effective immediately.

Radiation Safety Committee:

D. D. DeLine, Chairman
O. U. Anders
B. B. Holder, MD
R. R. Langner
J. B. Owen, Cert. HP

Corporate Health Physicists/Industrial Hygienist:

G. W. Engdahl
R. A. Olson
S. Norwood

Additional personnel specific to facility license R-108,
TRIGA research reactor, docket #50-264.

Laboratory Director (in charge of 1602 Building):

R. S. Kolat, Ph.D.

Reactor Supervisor:

O. U. Anders, Ph.D.

854734442

3/p

J-14



March 15, 1976

Reactor Operations Committee:

R. S. Kolat, Chairman
O. U. Anders
G. W. Engdahl, HP
G. L. Jewett
P. G. Mischler
A. L. Kamp

Senior Reactor Operator:

O. U. Anders
G. L. Jewett
P. G. Mischler
T. J. Quinn
W. R. Strom

Any questions regarding these new personnel or other related matters should be sent to me.

Sincerely,

D D DeLine

D. D. DeLine, Chairman
Radiation Safety Committee
47 Building
517/636-0150

G. W. Engdahl

G. W. Engdahl
HER Industrial Hygiene
1803 Building
517/636-3677

bjd

R. A. Olson

R. A. Olson
HER Industrial Hygiene
1803 Building
517/636-0221

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

March 19, 1976

LOCAL PUBLIC DOCUMENT ROOMS

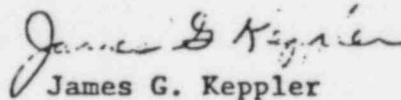
Enclosed are copies of documents listed below relating to
Dow Chemical Company Docket
No(s). 50-264, 21-265-6, 21-265-4, 21-265-7, & 21-265-2.

Letter dated March 15, 1976, D. D. DeLine, G. W. Engdahl,
and R. A. Olson to J. G. Keppler.

This correspondence is submitted pursuant to arrangements made by
the Public Proceedings Branch, Office of the Secretary, for use by
the public.

Where possible, these materials should be punched and filed in a
folder labeled as follows:

CORRESPONDENCE TO AND FROM APPLICANT OR LICENSEE
(Excluding Environmental and Antitrust)


James G. Keppler
Regional Director

Enclosures:
As noted above

cc: Washington Public Document Room, w/encl
Central Mail & Files Unit, Document Room Clerk, w/ encl
IE Files, w/encl.
R. Warnick, Regional Coordinator, w/encl.

