

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

March 22, 1972

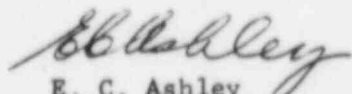
Region III Files

TELECON TO DR. W. L. SILVERNAIL, RSO
AMERICAN POTASH & CHEMICAL COMPANY, WEST CHICAGO, ILLINOIS
LICENSE NO. STA-583

I called Silvernail on March 22, 1972, and gave him the results of independent measurements (water, mud, and floor smears) as received from ANL. The independent measurements were taken during the inspection of subject license on February 29 and March 1, 1972.

A description and results of these independent measurements are given in Exhibit B, attached to the expanded field notes of the above noted inspection.

No significantly high results were noted.


E. C. Ashley
Radiation Specialist

8507110166 850408
PDR FOIA
RAPKIN85-30 PDR

LICENSEE TELEPHONE NOTIFICATION OF INSPECTION
(GENERAL)

Licensee: Acme Potash & Chem Date: Dec 12, 1966
Licenses No: STA-599 Individual Contacted:

(Name & Title)
MR. BRUCE BENNETT
PLANT MANAGER
Type Inspection: Registration #5 Contacted by: C. D. Hamplman

The following information was given to the licensee:

- A. Informed of inspection of above listed licenses to be performed on Dec 14 & 15, 1966
- B. AEC representative may be accompanied by a representative of the state or local Health Agency.
- C. Inspection of the program will include:
1. Observation of operations
 2. Inspection of facilities and equipment
 3. Review of following records:
 - a. Receipts, transfers, and/or disposals
 - b. Surveys to show an evaluation of use and storage of licensed material
 - c. Personnel monitoring (film badges, pocket dosimeters, etc.)
 - d. Leak tests (if applicable)
 - e. Reports of incidents, loss or theft, or overexposures
- Additional Records for 10CFR70 Licenses
- f. Inventory
 - g. Form AEC-578, Material Status Report
 - h. Form AEC-388, Material Transfer Report
- D. Remarks:

MEMO ROUTE SLIP		See me about this. Note and return.		For concurren For signature.		For action. For information.	
TO (Name and unit) J. R. Roeder CO:HQ		INITIALS	REMARKS SUBJECT: AMERICAN POTASH & CHEMICAL CORPORATION WEST CHICAGO, ILLINOIS LICENSE NO. STA-383 (DOCKET NO. 40-2061)				
		DATE					
TO (Name and unit)		INITIALS	REMARKS				
		DATE					
TO (Name and unit)		INITIALS	REMARKS				
		DATE					
FROM (Name and unit) J. M. Allen CO:III		REMARKS Attached is a 592 reply dated April 28, 1970, which is considered adequate. Licensee was telephonically contacted on May 1, 1970, and reminded that a report on the overexposure was still required to be submitted. Licensee agreed to do so.					
PHONE NO.	DATE						
	5-7-70						

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO 1968 O-288-512

LICENSEE TELEPHONE NOTIFICATION OF INSPECTION
I, II (GENERAL)

Licensee: Chen Co

Licenses No: 40-9211

Date: 6/16/68

Individual Contacted: George S. Smith, P.S.O.

(Name & Title)

Type Inspection: 40-9211

Contacted by: C. Smith

The following information was given to the licensee:

A. Informed of inspection of above listed licenses to be performed on 6/13/68

B. AEC representative may be accompanied by a representative of the state or local Health Agency.

C. Inspection of the program will include:

1. Observation of operations
2. Inspection of facilities and equipment
3. Review of following records:

- a. Receipts, transfers, and/or disposals
- b. Surveys to show an evaluation of use and storage of licensed material
- c. Personnel monitoring (film badges, pocket dosimeters, etc.)
- d. Leak tests (if applicable)
- e. Reports of incidents, loss or theft, or overexposures

Additional Records for 10CFR70 Licenses

- f. Inventory
- g. Form AEC-578, Material Status Report
- h. Form AEC-388, Material Transfer Report

D. Remarks:

Form CO:III-2

INDEPENDENT MEASUREMENTS

39. The AEC inspector obtained no independent measurements during this inspection.

LICENSE CONDITIONS

40. The license conditions were reviewed with Mr. Sinke.

MANAGEMENT DISCUSSION

41. The results of this inspection were reviewed with Mr. Gerald Sinke, Safety Engineer and RSO, and with Mr. Bruce Bennett, General Manager. These gentlemen were informed that as a result of this inspection no specific items of noncompliance were noted and Form AEC-591 was presented to the gentlemen at the time.

that he can visually look at the amount of dirt and dust on an air sample and almost predict whether it will be "hot" or not. He also stated that air sampling results will generally show higher readings with the relatively inexperienced personnel operating the equipment.

31. Once each three months, approximately 24 air samples are taken completely around the fence line of the plant. A review of these showed consistent samples of approximately 1/10 of mpc. The licensee uses an mpc of ~~10⁻¹² microcuries~~ for these surveys.
32. The licensee maintains weekly samples of ~~the~~ ^{BALLS} Greenhouse Wedder's house which are 1/2 mile west and east respectively of the plant and a air sample at the pump house on the plant property. It is the intent of the samples to show corrolation between on-site and off-site air sampling. The results of these weekly samples showed that all results were less than 10⁻¹² microcuries per cc.
33. Roof air sampling is performed every other week. The results of this sampling showed results of approximately 1/10 of mpc ranging from .001 to .4 ~~10⁻¹² microcuries~~ microcuries per cc.
34. The licensee maintains a record of general plant Beta Gamma survey which showed radiation backgrounds of from 1 mr per hour to a maximum of 10 to 12 mr per hour. Smear surveys are taken on a periodic basis and these records showed a general trend of from 2,500 to up to 9,000 ~~per centimeter~~ ^{dlm/100 cm²}.
35. A monthly Gamma survey is taken of the fence area around the unrestricted area southwest of the plant boundary at the location of the mud waste pile. License Condition No. 9 stipulates that not more than 2.5 mr per hour exist at this area. The licensee's monthly records of this survey showed that the radiation level was from 1.7 to 1.9 mr per hour.

POSTING AND LABELING

36. It was noted that all posting and labeling conformed with Part 20 requirements or License Condition No. 10 which authorizes the licensee to post a sign "Any container within this area may contain radioactive materials."

WASTE DISPOSAL

37. As mentioned previously in this report in paragraph no. 25, the licensee has recently been authorized incineration. The licensee will use this method of disposal of the empty plastic lined burlap bags which had contained the monosite sand. Prior to this time, these bags had been burned at the 12 Acre site.

RECORDS

38. The licensee is authorized to receive and possess unlimited amounts of thorium. The shipping records of the facility were not reviewed during this inspection, however, the inspector discussed the company's record-keeping system with Mr. Parsons, whose supervisor is Mr. Robert K. ~~AVINS~~ ^{AVINS}, the licensee's marketing manager. Mr. Parsons appeared to be knowledgeable with respect to the appropriate AEC Federal regulations concerning transfer of licensed materials. He stated that the New York office yet maintains particulars detailing export shipments while the local area office maintains all records of shipments within the continental United States. Mr. Parsons stated that the majority of their thorium shipments now is mantle-grade thorium. He also stated, ~~under~~ ^{under} question, that prior to shipment the company requires the receiver's license number and expiration date. The local procedure is not such that a copy of the receiver's license is necessary to be on hand at American Potash and Chemical Corp. but Parsons stated that an inventory is kept of each customer's specific records.

FACILITIES

23. The licensee's two separate facilities at West Chicago are ~~yet~~ unchanged. The research and development facility, known as W-1 or Special Products, is located in downtown West Chicago while the licensee's production facilities are located at 250 Ann Street.
24. It was noted that at the entrance of most areas is a sign notifying personnel that containers within the area may contain radioactive materials.
25. Immediately south of the processing area, the licensee ~~yet~~ maintains the 12-acre fenced area known locally as "12 Acres." The gray mud waste pile has not been changed. The licensee yet utilizes the retention pond for the collection of all liquid process waste from the plant. The entire 12 Acres area is enclosed with a chain-link fence and it was noted that the burn pit which was formally in this area has been eliminated and a trash pile which had started to be in use in this area had also been eliminated. Mr. Sinke stated that with the recent Illinois law of prohibiting burning of white waste, the American Potash and Chemical Corp. has stopped all open burning and now uses local garbage collection facilities for nonradiative waste. The licensee has obtained an amendment to their license for the incineration of contaminated materials, however, Mr. Sinke stated that to date the incinerator has not been used because of the change of production which does not now create the empty bags which are ~~supposedly~~ contaminated with the monosite ores.

RADIATION SAFETY EQUIPMENT AND INSTRUMENTATION

26. The radiation ~~working~~ ^{monitoring} equipment of the licensee is yet unchanged. Locally constructed air sampling equipment is still used with a Nuclear Chicago Model 2612 Beta Gamma gas flow internal proportional scaler. A Nuclear Chicago automatic smear counting scaler is also used. Various portable instrumentation are on hand and are calibrated by Health Physics Associates.

PERSONNEL MONITORING

27. The film badge service is R. S. Landauer Jr. and Company with all thorium plant production workers on a weekly schedule and the rest of the personnel on a monthly schedule. At the present time, approximately 54 people are on the monthly schedule and approximately 20 people are on the weekly schedule. The film badge records for the year 1967 were reviewed showing the highest yearly absorbed dose of 670 mr for Mr. ~~Frank~~. Mr. ~~Frank~~ received a 630 mr. The film badge reports for the year 1968 to date were reviewed and ~~Frank~~ received 950 millirem during the first quarter and a Mr. ~~Frank~~ receiving 1,060. The accumulated exposure for the second quarter of 1968 showed Mr. ~~Frank~~ having 420 mr. and a Mr. ~~Frank~~ with 400 mr. Mr. Sinke stated that Mr. ~~Frank~~ is no longer in the thorium plant.
28. The review of the film badge results showed no exposures in excess of AEC requirements.

RADIATION SURVEYS AND/OR EVALUATION

29. The licensee maintains separate file folders giving air sampling results for each area in which thorium is worked. These records show results of air sampling taken on all four floors of building no. 9, the thorium room, general plant areas, roof area, at the fence line around the plant and off-site at Vedder's house, which is 1/2 mile east of the plant, and at ~~Frank's~~ ^{BALL} Greenhouse, which is 1/2 mile west of the plant.
30. A regularly scheduled air sampling program is in effect with a plant mpc of 10 ~~microcuries~~ ^{microcuries} per cc. These results showed that ~~all~~ ^{all} air samples taken within the plant were less than mpc, however, at times when air sample results were greater than mpc a time waited average was taken to assure that the personnel working in that area received less than 40 mpc hours of exposure. The results of all the time waited studies indicated that no workers had been exposed to greater than 40 mpc hours for any consecutive seven days. Mr. Maryniw stated

APPENDIX

is not ~~with~~ with respect to thorium, and operations on the third and fourth floor of building no. 9 are not required for this process. Consequently, there has been a great reduction in the personnel at the plant.

ORGANIZATION

16. The organization chart which was presented in the report details of the last inspection of this facility is the same with the exception of one change of the thorium extraction plant general foreman. Mr. Bannell, who formally had this position, is no longer with the company and Mr. Wedder now holds his position.
17. The American Potash and Chemical Corporation is now a subsidiary of Kerr-McGee. This merger was effective a few months ago. Mr. Dunn, the former corporation president of the American Potash and Chemical Corporation, is now a v.p. of Kerr-McGee. He does not sit on the board. In addition to maintaining the presidency of the American Potash and Chemical Corp., Mr. Dunn has been assigned by Kerr-McGee some further responsibilities with respect to Kerr-McGee mining and milling operations.
18. Mr. Bruce J. Bennett, the General Manager located at West Chicago, informed the inspector that to date no company organization changes have developed which would affect the American Potash and Chemical Corp. Mr. Sinke also informed the AEC representative that to date there has been no changes with respect to the radiation safety duties being performed at American Potash and Chem. Corp.

ADMINISTRATIVE CONTROL

19. Administrative control of this licensed program appeared to be essentially the same as previously reported. Mr. Theodore ~~Fields~~ ^{FIELDS}, Radiological Physicist of Health Physics Associates, is yet retained by the licensee on a consulting basis. Mr. Sinke stated that while his primary duties at the plant is safety, his time donated directly with duties associated with this licensed program has increased from approximately 25% to 50%. He further stated in general that he and Mr. Maryn ~~is~~ are doing much more work with respect to air and water pollution. The deep well which was being constructed by the company has been abandoned.
20. Mr. Sinke's basic administrative control is yet unchanged. He has the health physics reporting responsibility directly to Mr. Bennett and he frequently discusses things with Mr. Bennett and makes formal reports to Mr. Bennett. Mr. Sinke stated that during the last several months there has been a reduction in the number of employees at the plant resulting in very few new workers being obtained. Mr. Sinke yet has regularly scheduled safety meetings during which radiation safety is discussed.
21. Presently, there are no outside contractors at the facility.

RADIOLOGICAL SAFETY PROCEDURES

22. As stated in previous reports of this facility, there is no written radiological safety procedures, however, the philosophy of written instruction for each job operation is yet being maintained. These individual job operations instructions also include requirements with respect to health physics. The licensee has certain job operations where the company requires the use of respiratory equipment. The licensee also provides miscellaneous protective clothing and the requirement that employees bath or wash thoroughly after their work shift is yet in effect.

DETAILS

GENERAL INFORMATION

9. This was an announced reinspection no. 6 conducted at this facility on June 12, 1968 by C. D. Hampleman. Mr. Gerald Sinke, Safety Engineer and RSO, was notified of this impending inspection on June 10, 1968.
10. The Illinois State Department of Health was not notified of this inspection due to lack of time period. The AEC representative was not accompanied during the inspection.
11. All information in this report is from the results of observations by the inspector or through interview with the following people:

Mr. Bruce J. Bennett, General Manager; Mr. Gerald Sinke, Safety Engineer and RSO; Mr. Edward Maryniw, Radiation Hygienist, Technician; and Mr. Parsons, Marketing.

INSPECTION HISTORY

12. The American Potash and Chemical Corporation has a general inspection history of several items of noncompliance during each inspection. Reinspection no. 2 conducted in 1961 resulted in four items of noncompliance, reinspection no. 3 conducted in 1962 resulted in four items of noncompliance, reinspection no. 4 conducted in 1964 also resulted in four items of noncompliance, and during reinspection no. 5 conducted in 1966 and February of 1967, one item of noncompliance was noted but was corrected prior to the end of the inspection. *No items of non-compliance were noted during the present inspection.*

PROGRAM

13. The licensee's facilities at the West Chicago Plant pertaining to this licensed program is a production of thorium and rare earth compounds from monosite sands. The maximum capacity of the plant is 25 tons per day of sands which can be sent to the plant from such places as Africa, Malaya, and Georgia. These sands consist of approximately 45% rare earth oxide and 6% thorium oxide.
14. At the time of this inspection, the licensee is not processing monosite ores. With respect to the thorium program, the licensee is drawing from an on-hand stockpile of thorium nitrate with which he performs a "limited" process for the current production of thorium oxide and mantle-grade thorium for sale. As a result of this reduction of the thorium process, the licensee is currently reduced to approximately 50% of his past thorium production process. The twin-shell blender is yet used on a schedule of 24 hours per day and the thorium room (production of thorium oxide) is yet in operation as are also certain equipment on the first and second floor such as centrifuges and presses. Presently, no operations are being conducted on the third and fourth floor with respect to the thorium process. Mr. Sinke stated that no monosite ores had been processed since approximately December of 1967 and probably none would be processed until about the first of the year of 1969. The present scope of operations result in approximately 50% less process work but with almost the same production of end-grade thorium for sale as previously due to the use of the thorium nitrate stockpile.
15. The licensee is now concentrating on the production of rare earth oxides as obtained from basnasite, which is being shipped to them from Mountain Pass, California. Mr. Sinke explained that the process of basnasite is less detailed than the process of monosite ores. Basnasite

REPORT COMPILED SHEET

Identifying Information

Type Report (circle)
591 592

1. Licensee American Potash and Chemical Corporation
2. Address 258 Ann Street
West Chicago, Illinois 60185
3. License No(s) STA-583
4. Date of Inspection June 12, 1968
5. Inspector C. D. Hampleman
6. Status of Compliance compliance

Items of Noncompliance

- | 7. Section of Regulation
or
License Condition | Details Paragraph |
|---|-------------------|
| A. <u>None</u> | A. _____ |
| B. _____ | B. _____ |
| C. _____ | C. _____ |
| D. _____ | D. _____ |
| E. _____ | E. _____ |
| F. _____ | F. _____ |
| G. _____ | G. _____ |

Classified Information

8. This report contains classified or business confidential information.
Yes No

C. D. Hampleman 6-20-68
Inspector Date
J. Mallon 6-20-68
Reviewer Date

American Potash and Chemical Corp.
License No. STA-583
June 13, 1968

HEALTH PHYSICS ANALYSIS

It is the opinion of this inspector that operations conducted under this licensed program can be considered to be acceptable.

The production process of thorium has diminished to approximately one-half of its previous amount which has considerably reduced the health physics problems of the licensee. The licensee is yet maintaining detailed records with respect to radiation exposure and air sampling. As a result of this inspection, it appears that the licensee is quite adequately controlling whole body exposures and exposure to airborne radioactive materials. ~~_____~~
Air samples greater than restricted mpc's are being observed, but time waited averaging has shown that no employees are exposed to greater than 40 mpc of airborne contamination in any 7 consecutive day period. ~~_____~~

It is the general opinion of this inspector that control of health physics problems of this licensed facility has improved considerably within the last few years.

Ch