

UNITED STATES ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE

INSPECTION FINDINGS AND LICENSEE ACKNOWLEDGMENT

II - A. II J. H. H.

1. LICENSEE <i>AMERICAN POTASH & CHEMICAL CORPORATION 238 ANN STREET WEST CHICAGO, ILLINOIS</i>	2. REGIONAL OFFICE <i>REGION III, DIV. OF COMPLIANCE OAKBROOK PROFESSIONAL BLDG. OAK BROOK, ILLINOIS 60521</i>
3. LICENSE NUMBER(S) <i>STA-583</i>	4. DATE OF INSPECTION <i>MAY 6, 1965</i>
5. INSPECTION FINDINGS <p><input checked="" type="checkbox"/> A. No item of noncompliance was found.</p> <p><input type="checkbox"/> B. Rooms or areas were not properly posted to indicate the presence of a RADIATION AREA. 10 CFR 20.203(b) or 31.302</p> <p><input type="checkbox"/> C. Rooms or areas were not properly posted to indicate the presence of a HIGH RADIATION AREA. 10 CFR 20.203(c) (1) or 31.302</p> <p><input type="checkbox"/> D. Rooms or areas were not properly posted to indicate the presence of an AIRBORNE RADIOACTIVITY AREA. 10 CFR 20.203(d)</p> <p><input type="checkbox"/> E. Rooms or areas were not properly posted to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(e)</p> <p><input type="checkbox"/> F. Containers were not properly labeled to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(f) (1) or (f) (2)</p> <p><input type="checkbox"/> G. Storage containers were not properly labeled to show the quantity, date of measurement, or kind of radioactive material in the containers. 10 CFR 20.203(f) (4)</p> <p><input type="checkbox"/> H. 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)</p> <p><input type="checkbox"/> I. Form AEC-3 was not properly posted. 10 CFR 20.206(c)</p> <p><input type="checkbox"/> J. Records of the radiation exposure of individuals were not properly maintained. 10 CFR 20.401(a) or 31.203(b)</p> <p><input type="checkbox"/> K. Records of surveys or disposals were not properly maintained. 10 CFR 20.401(b) or 31.303(d)</p> <p><input type="checkbox"/> L. Records of receipt, transfer, disposal, export or inventory of licensed material were not properly maintained. 10 CFR 30.41, 40.61 or 70.51</p> <p><input type="checkbox"/> M. Records of leak tests were not maintained as prescribed in your license, or 10 CFR 31.105(c).</p> <p><input type="checkbox"/> N. Records of inventories were not maintained. 10 CFR 31.106</p> <p><input type="checkbox"/> O. Utilization logs were not maintained. 10 CFR 31.107</p>	
8507110150 850408 PDR FOIA RAPKIN85-30 PDR <i>Elmer G. Buckley</i> (AEC Compliance Inspector)	
6. LICENSEE'S ACKNOWLEDGMENT <p>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.</p> <p>_____ (Date)</p> <p>_____ (Licensee Representative - Title or Position)</p>	

COPIES: 1 LICENSEE 6 COMPLIANCE REGION 1 DIV. OF ST. & LIC. REL. 1 DIV. OF COMPLIANCE

Mailed 5-7-65

61

REPORT COMPILED SHEET

Identifying Information

Type report (circle) 591 592

- ✓1. Licensee American Potash and Chemical Corporation
- ✓2. Address 258 Ann Street
West Chicago, Ill.
- ✓3. License No(s) STA-583
- ✓4. Date of Inspection May 6, 1965
- ✓5. Inspector Edgar B. Ashley
- ✓6. Status of Compliance Clear (follow-up)

Items of Noncompliance

✓7. Section of Regulation or License Condition	Details Paragraph
A _____	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

<u>Edgar B. Ashley</u>	<u>5-13</u>
Inspector	Date
<u>sgm</u>	<u>5-24-65</u>
Reviewer	Date

HEALTH PHYSICS ANALYSIS

✓ The licensee has expanded his radiation safety program in order to reduce exposure of the employees to both external whole body radiation and to airborne ^{contamination} ~~contamination~~. He is conducting an adequate number of direct reading radiation level surveys and recording the same. In conjunction with these direct reading radiation level surveys, he is transferring his material-in-storage to areas where ^{occupational exposure} ~~occupational exposure~~ is not as great and has reduced to a minimum the amount of material being stored in working areas. In addition to making evaluations concerning the exposure to personnel from airborne radiation as a result of high airborne sample results, the licensee has taken steps in the form of installing a new hood and dust collector in order to reduce the possible exposure to personnel of airborne contamination. The scheduling of all thorium workers on a weekly film badge schedule allows the licensee to be ^{more} ~~be~~ aware of the whole body exposures being received by the thorium workers. The use of the weekly film badge versus the monthly film badge for thorium workers allows the licensee to initiate job rotation at an earlier date when it is seen that a thorium worker is receiving excess whole body exposures.

It was noted during this inspection that Mr. Edward Maryniw, the licensee's Industrial Hygiene and Health Physics Technician, is still the only licensee representative actually making the ^{physical} ~~physical~~ radiation surveys, air samples, etc. However, Mr. Maryniw's methods are more efficient now than at the time of the last previous inspection. An example of this increased efficiency is that Mr. Maryniw performs beta-gamma radiation surveys while air samples are being taken. Therefore both samples can be taken simultaneously. The inspector feels, however, that the licensee is still understaffed at the health physics level.

The inspector ^{however} is of the opinion ^{that} ~~that~~ there are no current health and safety problems ⁱⁿ ~~in~~ this program at this time.

AMERICAN POTASH & CHEMICAL CORP.
CHICAGO, ILLINOIS
LICENSE NO. STA-583

GENERAL INFORMATION

- ✓9. The announced inspection was conducted on May 6, 1965. The licensee representatives were notified of this forthcoming inspection May 5, 1965.
- ✓10. The State of Illinois Department of Health was not notified of this inspection due to lack of time. The inspector was unaccompanied.
- ✓11. The following persons were interviewed:
 - Mr. Gerald Sinke, Safety Engineer and RSO
 - Mr. Edward Maryniw, Radiation Hygienist (Technician)
 - Mr. Bruce J. Bennett, Plant Manager (telephone conversation)

BASIS FOR FOLLOW-UP INSPECTION

- ✓12. The last inspection of this licensee was conducted on December 15, 16 and 17, 1964. As a result of that inspection, the licensee was cited for four items of noncompliance. In addition, the licensee was instructed as to the proper procedures to be followed concerning scrap material prior to release from the licensee's facilities. The four items of noncompliance are as follows:
 - a. Two licensee employees received whole body radiation doses in excess of those specified in 10 CFR 20.101.
 - b. Surveys of radiation levels within the plant were inadequate to assure compliance with 10 CFR 20.101 with respect to the external radiation doses received by employees contrary to 10 CFR 20.201(b).
 - c. Surveys were inadequate to evaluate the extent of personnel exposure to airborne contamination in violation of 10 CFR 20.201(b) pursuant to 10 CFR 20.103.
 - d. A thorium prep room area was not posted in accordance with 10 CFR 20.203(e)(2). In addition to the four items of noncompliance outlined above, the Division of State and Licensee Relations advised the licensee of the proper procedures to be taken concerning the handling of scrap material used in the thorium process prior to release to the unlicensed recipients.
- ✓13. A notice of violation was sent to the licensee by the Commission on March 4, 1965. The licensee responded by letter dated March 24, 1965 describing the corrective action taken by the licensee. This letter in turn was acknowledged by the Commission by letter dated April 7, 1965.

CORRECTION OF PREVIOUS ITEMS OF NONCOMPLIANCE

- ✓14. Concerning the first item of noncompliance noted above, notices of overexposure to external radiation in accordance with 10 CFR 20.405 were submitted to the Commission following the exposure results. The licensee has since placed all thorium handlers on a weekly film badge program instead of the previous monthly schedule. A copy of the weekly film badge results for thorium workers beginning on January 4, 1965 is attached to the field notes of this inspection report. Additional action taken by the licensee to reduce personnel whole body exposures has been to reduce the storage of radioactive material in working areas to a minimum working quantity.
- ✓15. Concerning the second item of noncompliance, it was noted during this inspection that the licensee is conducting adequate beta-gamma surveys of his thorium work areas. The results of these surveys are being recorded on maps made for each individual area of concern.

- ✓16. Concerning the third item of noncompliance, it is noted that the licensee has, in the past, been making a sufficient number of airborne samples. However, the problem here ~~was~~ the licensee's failure to evaluate the possible exposures received by personnel in conjunction with high airborne alpha results for natural thorium. ~~Since~~ the last previous inspection it was noted that one case of high airborne alpha contamination occurred. This took place in the warehouse shipping room on March 2, 1965. One employee, a Mr. J. Broglin, was transferring thorium nitrate $\text{Th}(\text{NO}_3)_4$ mantle ~~thorium~~ from a 55 gallon fiber drum to a small 112 pound plastic lined steel can. A total of 8 five minute breathing zone air samples were taken during the one hour transfer operation. The licensee's air sample data sheet shows the following results. The maximum permissible concentration (mpc) for natural thorium is 3×10^{-11} mpc/cc. The results of the 8 air samples beginning from the first and going to the last are, in multiples of mpc; 70, 46, 16.2, 49, 17, 0.14, 0.17, and 0.09. The average of these eight air samples was noted to be $37.5 \times \text{mpc}$. When divided by 40, the one hour result would be $0.94 \times \text{mpc}$. All other air samples taken involving this one employee were noted to be of insignificant amounts. As a result of this one high air sample, the licensee has installed a new hood and dust collector (TORIT) ~~in the warehouse transferring area~~. This new hood and dust collector will be used in conjunction with all future transfers. In addition, the transfer operations in the warehouse has been isolated, at the new hood, from the repacking and storage areas of the warehouse. It was noted that the personnel evaluation made in conjunction with the high air sample was recorded on the backside of the air sample data sheet in question.
- ✓17. With respect to the fourth item of noncompliance, it is noted that the prep room was properly posted in accordance with 10 CFR 20.203(e)(2) at the time of the last previous inspection in the presence of the inspectors.
- ✓18. Concerning the release of scrap equipment to areas of the general public the licensee representative stated that no scrap has been released since the last previous inspection. In addition, it was noted that the licensee has established a procedure for evaluating the contamination contained on and in various pieces of scrap material prior to the release in accordance with the de minimus letter sent to the licensee by the Commission entitled "Radioactivity Contamination Limits For Abandonment of Facilities and Equipment." For this purpose the licensee possesses operable survey meters. These survey meters are a beta-gamma survey meter with a 30 milligram per square centimeter probe and a Nuclear-Chicago alpha survey meter containing an alpha probe of approximately 50 centimeter square area. The methods of surveys demonstrated by the licensee representatives appear to be adequate from these surveys. In addition, a special form is being made up to record all scrap surveys.

MISCELLANEOUS

- ✓19. It was noted during this inspection that the licensee has posted in thorium work areas 18 inch x 24 inch lucite ~~plates~~ ^{placards} which contain spelled out personnel ~~restrictions~~. These restrictions include no smoking, no eating or drinking, wash hands before eating, etc.
- ✓20. A summation of this inspection was given to Mr. Bruce J. Bennett, Plant Manager, by telephone call from Mr. Sinke's office. A clear Form AEC-591 was issued to Mr. Sinke at this time. Mr. Bennett was advised that the form was issued to Mr. Sinke.