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American Potash and Chemical
Corporation
Lindsay Chemical Division
258 Ann Street
West Chicago, Illinois

Attention: Mr. P. J. Bennett
Plant Manager

Gentlemen:

This refers to the inspections conducted on April 30, May 1, May 2, May 3, June 14 and August 16, 1962 of your activities authorized under AEC Source Material License No. 2-234.

It appears that certain of your activities were not conducted in full compliance with the requirements of the AEC's "Standards for Protection Against Radiation," Part 20, Title 10, Code of Federal Regulations, in that:

1. Two employees received radiation doses of 1390 millirems and 1460 millirems respectively during the first calendar quarter of 1962, and one employee received a radiation dose of 1260 millirems during the second calendar quarter of 1962, contrary to 10 CFR 20.101(a), "Exposure of individuals to radiation in restricted areas." No determination was made of the employees' accumulated occupational dose to the whole body on Form AEC-4 or its equivalent. The employees were therefore limited to a dose of 1-1/4 rads for these calendar quarters.
2. The quantities of radiation existing in the unrestricted areas outside the fence surrounding the area where the thorium was stored were such that an individual could have received a radiation dose in excess of 100 millirems in any seven consecutive

REGISTERED MAIL
RETURN RECEIPT REQUESTED

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2. continued

days, contrary to 10 CFR 20.103(b), "Permissible levels of radiation in unrestricted areas."

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3. Surveys conducted of the thorium storage area were not adequate to assure that employees would not be exposed to radiation in excess of the limits of 10 CFR 20.101, contrary to 10 CFR 20.201(b), "Surveys." Also, airborne surveys conducted during the monazite ore roasting operation were not adequate to assure that employees would not be exposed to airborne concentrations of thorium in excess of the limits of 10 CFR 20.103, contrary to 10 CFR 20.201(b).

This notice is sent to you pursuant to the provisions of Section 2.201, "Notice of violation," of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of which is enclosed. You are hereby required to notify this office in writing within twenty (20) days of your receipt of this notice, specifying the corrective steps which have been taken or will be instituted to achieve compliance and prevent further violations and the date when full compliance has been or will be achieved.

With regard to Item 2 above, your application which requests authority pursuant to 10 CFR 20.105(a) for levels of radiation in unrestricted areas in excess of the limits specified in 10 CFR 20.103(b) is being evaluated.

At the time of the inspection the adequacy of your environmental air survey program in unrestricted areas to determine compliance with 10 CFR 20.103(b) appeared questionable in view of the limited number of sampling stations and the low frequency at which samples were taken at each location. A more comprehensive air survey program appeared necessary for you to determine adequately that air concentrations of radioactive material in unrestricted areas would not exceed the specified limits. Your air survey program should include provisions for taking air samples down wind from your plant. Further, samples should be taken at a frequency which will assure that representative measurements of actual conditions are made. In your reply to this letter you are requested to describe the air sampling program for unrestricted areas which you have instituted or will institute to assure that concentrations of radioactive material in unrestricted areas will not exceed the limits specified in 10 CFR 20.

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We understand that three employees may have been exposed during the early part of January, 1962 to concentrations of airborne thorium in excess of the limits specified in 10 CFR 20.103, "Exposure of individuals to concentrations of radioactive material in restricted areas." In your reply to this letter, please specify the steps you will take to assure that employees will not be exposed to concentrations of airborne thorium in restricted areas in excess of the limits specified in 10 CFR 20.103.

Very truly yours,

Eber R. Price
Assistant Director
Division of Licensing
and Regulation

Enclosures:

1. 10 CFR 20
2. 10 CFR 2

cc: Compliance Div., HQ
Compliance Div., III
Public Document Room

LR:EB
RH:lrm:RCP

CO

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E. R. Price

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