


UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

REGULATORY FILE CY

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter 1, Part 40, application is hereby made for a license to receive, possess, use, transfer, deliver or import into the United States source material for the activity or activities described.

| | | | |
|---|---|---|--|
| 1. (Check one) <input type="checkbox"/> (a) New license <input type="checkbox"/> (b) Amendment to License No. _____ <input checked="" type="checkbox"/> (c) Renewal of License No. <u>SUA-551</u> <input type="checkbox"/> (d) Previous License No. _____ | | 2. NAME OF APPLICANT <u>Petrotomics Company</u> | |
| 3. PRINCIPAL BUSINESS ADDRESS <u>P.O. Drawer 2459</u> <u>Casper, WY 82601</u> | |  | |
| 4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED <u>Shirley Basin, Wyoming</u> <u>Carbon County</u> | | | |
| 5. BUSINESS OR OCCUPATION <u>Mining and Milling Uranium Ore</u> | | | |
| 6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP (b) _____ | | | |
| 7. DESCRIBE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED <u>Source Material in the form of uranium bearing ores will be processed and the uranium concentrated to the form of Ammonium Diuranate (NH₄)₂U₂O₇ by normal uranium milling methods and subsequently transferred on private contract.</u> | | | |
| 8. STATE THE TYPE OR TYPES, CHEMICAL FORM OR FORMS, AND QUANTITIES OF SOURCE MATERIAL YOU PROPOSE TO RECEIVE. POSSESS, USE, OR TRANSFER UNDER THE LICENSE | | | |
| (a) TYPE | (b) CHEMICAL FORM | (c) PHYSICAL FORM (Including % U or Th.) | (d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds) |
| NATURAL URANIUM | Natural Uranium Ores (NH ₄) ₂ U ₂ O ₇ (Yellowcake) | +0.05 U as Ore; -1/4" dried solids 75-83% | Unlimited U Unlimited |
| URANIUM DEPLETED IN THE U-235 ISOTOPE | N/A | N/A | N/A |
| THORIUM (ISOTOPE) | N/A | N/A | N/A |
| (e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds) <u>Unlimited</u> | | | |
| 9. DESCRIBE THE CHEMICAL, PHYSICAL, METALLURGICAL, OR NUCLEAR PROCESS OR PROCESSES IN WHICH THE SOURCE MATERIAL WILL BE USED, INDICATING THE MAXIMUM AMOUNT OF SOURCE MATERIAL INVOLVED IN EACH PROCESS AT ANY ONE TIME, AND PROVIDING A THOROUGH EVALUATION OF THE POTENTIAL RADIATION HAZARDS ASSOCIATED WITH EACH STEP OF THOSE PROCESSES <u>Please refer to supplemental sheet.</u> | | | |
| 10. DESCRIBE THE MINIMUM TECHNICAL QUALIFICATIONS INCLUDING TRAINING AND EXPERIENCE THAT WILL BE REQUIRED OF APPLICANT'S SUPERVISORY PERSONNEL INCLUDING PERSON RESPONSIBLE FOR RADIATION SAFETY PROGRAM (OR OF APPLICANT IF APPLICANT IS AN INDIVIDUAL) <u>Supervisory personnel responsible for radiation safety will be qualified by education, and/or instructions and experience making them fully capable of conducting surveys, calculating results and carrying out the other requirements as set forth in 10 CFR Part 20</u> | | | |
| 11. DESCRIBE THE EQUIPMENT AND FACILITIES WHICH WILL BE USED TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE OR PROPERTY AND RELATE THE USE OF THE EQUIPMENT AND FACILITIES TO THE OPERATIONS LISTED IN ITEM 9. INCLUDE: (a) RADIATION DETECTION AND RELATED INSTRUMENTS (including film badges, dosimeters, counters, air sampling, and other survey equipment as appropriate. The description of radiation detection instruments should include the instrument characteristics such as type of radiation detected, window thickness, and the range(s) of each instrument). <u>Please refer to supplemental sheet</u> | | | |
| (b) METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED IN (a) ABOVE, INCLUDING AIR SAMPLING EQUIPMENT (for film badges, specify method of calibrating and processing, or name supplier). <u>Please refer to supplemental sheet</u> | | | |

ACKNOWLEDGED

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Supplemental Information

- Item 9. Processing Uranium ores at grades of +0.05% (Average Feed .25% U_3O_8) through the following steps for the final concentrated product, ammonium diuranate:

| <u>Process Step</u> | <u>Approximate Circuit Inventory</u> |
|-----------------------------------|--------------------------------------|
| 1. Stockpile | Unlimited |
| 2. Crushing & Ore Storage | 8,000 lbs. U_3O_8 |
| 3. Grinding | 500 lbs. U_3O_8 |
| 4. Sulfuric Acid Leach | 6,000 lbs. U_3O_8 |
| 5. Counter Current Decantation | 13,000 lbs. U_3O_8 |
| 6. Clarification & Liquor Storage | 3,500 lbs. U_3O_8 |
| 7. Solvent Extraction & Stripping | 18,000 lbs. U_3O_8 |
| 8. Ammonia Precipitation | 80,000 lbs. U_3O_8 |
| 9. Final Product Drying | 3,000 lbs. U_3O_8 |
| 10. Product Packaging | 5,000 lbs. U_3O_8 |
| Total | > 137,000 lbs. U_3O_8 |

Dust samples which have been frequently taken throughout all the process areas and over a number of years of operation, indicate that the only potentially hazardous areas are those where the drying and packaging of the final product (yellowcake) are carried out. Both areas are enclosed and entry restricted to authorized personnel who must wear U. S. Bureau of Mines approved respirators. Special protective apparel is furnished by the Petrotomics Company and laundered within the plant.

- 11 (a). All new employees are orientated in radiological safety procedures as established in the processing operation. Employees working in final product areas are furnished coveralls, respirators and gloves for their protection which are laundered and serviced within the restricted areas. Adequate shower facilities are available in the processing plant and employees are required to bathe before leaving the plant. Emergency eye and face baths and showers are strategically located throughout the plant area. Caution signs, labels and signals are prominently displayed as required.

Air samples are collected, analyzed and computed for job exposure records. A geiger counter survey of all areas is conducted periodically and film badges are worn by personnel working in potentially radiation hazardous areas.

The total monitoring program is concurrent with conditions amended on the date of November 11, 1969 on present AEC license SUA-551 as renewed August 27, 1968.

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(b). Radiation Monitoring Equipment Data

Equipment - Low volume dust samplers (0-25) liter/minute, adjustable flow and manufactured by Research Appliance Corporation. Equipment - High volume sampler 50 cfm FIXT-Flow and manufactured by Mine Safety Appliances. Equipment - Eberline Geiger Counter for beta-gamma count. Equipment - Film badge service (beta-gamma) by R. S. Laundauer Jr. and Company of Glenwood Springs, Ill.

- 12 (a). Employee safety meetings are conducted monthly; this is a mandatory requirement by Petrotomics Company. Safety programs are supplemented by posters, placards, caution signs, locks, special orientation for new employees in all facets of general safety and radiological protection. (Radiological safety program includes personal hygiene, use of respirators and film badges and specific rules for yellowcake areas).

The fire protection system for the processing plant is approved by the Factory Insurance Association and is thoroughly inspected by them semi-annually. The solvent extraction circuits are protected by automated water-foam sprinkler systems. The administrative offices and buildings are protected by water sprinklers, water hose stations and a mobil foam fire unit. Alarm systems are checked weekly. All gas (propane) systems are Factory Insurance Association approved. Boilers are approved and inspected periodically by the insurer as well as by our own personnel.

Other programs are listed as follows:

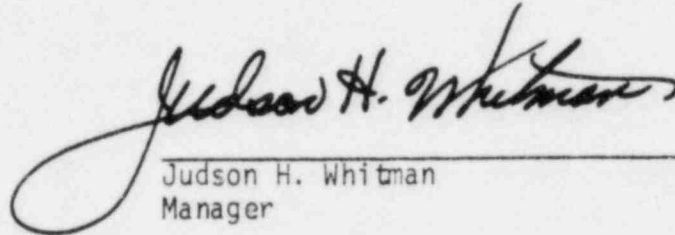
| <u>Agency</u> | <u>Subject of Compliance</u> | <u>Frequency</u> |
|--|--|--------------------------|
| Inspector - U. S. Bureau of Mines | Compliance with Federal Metal & Nonmetal Safety Act | Annually or as required |
| Dust Team - U. S. Bureau of Mines | Dust Emission | Irregular |
| Accident Reports U. S. Bureau of Mines | Accident Frequency Rates | Quarterly or as required |
| U. S. Public Health Service | Sputum and Blood Tests | Annually |
| Atomic Energy Commission | Compliance with Source Material License Requirements, regulations, material transfer, production, etc. | Irregular |
| State Mine Inspector | Compliance with State laws | Quarterly or as required |
| Kemper Insurance | Inspection of Boiler and Electrical Equipment | Semi-Annual |

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- 12 (c). Radiation survey programs and procedures will be basically maintained as outlined in prior license applications and renewals. The experience gained through a number of years of operation will be applied to the benefit of all controls.

Based upon recommendations and suggestions resulting from compliance inspections, insurer inspections, the mine inspector's visits, etc., programs may be modified and improved to provide the best possible protection. Such modifications may consist of but not necessarily limited to, changes in sampling frequency or location, type of equipment used, etc.



Judson H. Whitman
Manager

JHW/cs
March 9, 1973

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|--|---|----------------------------------|---|------------------------|--------------------------|
| DOCKET NUMBER 040-00430 | | MAIL CONTROL NO. 01633 | DATE REQUEST REC'D 03/12/73 | PROGRAM CODE (PRIMARY) | |
| SECONDARY PROGRAM CODES: | | | | | |
| #1 | #2 | #3 | #4 | #5 | |
| INDIVIDUAL LICENSEES | NAME | | NAME | | |
| | NAME | | NAME | | |
| | NAME | | NAME | | |
| ORGANIZATION LICENSEE | ORGANIZATION NAME Petrochemical Company | | | | |
| | DEPARTMENT OR BUREAU | | TYPE OF ORGANIZATION | | |
| | | | U. S. GOVERNMENT AGENCY EDUCATIONAL INSTITUTION MEDICAL INSTITUTION <input checked="" type="checkbox"/> INDUST OTHER | | |
| ADDRESS | BUILDING, STREET P. O. Drawer 2439 | | CITY Casper | STATE WY | ZIP CODE 82401 |
| | APPLICANT'S COMMUNICATION DATED: 03/09/73 | | CLASSIFICATION U | ASSIGNED TO: | RESULTING AMD. NO. |
| ENCLOSURES: (4 cys. rec'd.) Supplemental sheets to Form AEC-2 | | | | | |
| UNCLASSIFIED DESCRIPTION: (4 cys. rec'd.) AEC-2 for renewal of SUA-551..... | | | | | |
| DISTRIBUTION: 1-PDR cy. 1-R. O. | | | | | |
| OTHER REFERRALS | | | | | |
| NAME | | DATE | NAME | | DATE |
| Davis w/file cy. & file 1-extra cy. | | 03/13 D.TQ | | | |
| ACKNOWLEDGED | | | | | |