INTERMEDIATE ACTION FORM

REFERENCE NUMBERS

Source & SNM Licenses

PROG. CODE	03. DOCKET NO.	09. TASK NO.	42. PURPOSE OF TASK	12. CONTROL NO.	18. LICENSE NUMBER
62	40-6940	T01	Amendment Req.	109	STB-849

APPLICANT: Kawecki Chemical Company

54. AM. NO. RESULTING FROM TASK:

STREET & BUILDING: 220 East 42nd Street

45. CLASSIFICATION: U

63. ASG. TO:

CITY	27. STATE	30. ZIP
New York	NY	10017

33. RECEIVED YR.	MO.	DAY	36. ISSUED YR.	MO.	DAY	39. EXPIRED YR.	MO.	DAY
67	01	11				68	08	31

APPLICANT'S COMMUNICATION DATED: YR. 67 MO. 01 DAY 10

59. ENCLOSURES (4 cys. each)

AEC-2 dtd. 1-10-67 for amendment to STB-849...
Attachments 1-3
Drawing - Supplemental Sheets to AEC-2

DESCRIPTION (MUST BE UNCLASSIFIED)

tr. trans. the following:

60. DISTRIBUTION

1-PDR Copy

INTERMEDIATE ACTIONS TYPE	ON YR.	MO.	DAY	ACTIV.	RETURNED YR.	MO.	DAY
PPL. INFO. EQUESTED ROM APPLICANT	68. 2			1	77. 03.		
EFERRED O:	68. 2			2	80. 11		
EFERRED O:				3			

OTHER REFERRALS

DO NOT REMOVE

Nussbaumer: w/file cy. & file
1-compliance
1-extra

ACKNOWLEDGED

DATE YR.	MO.	DAY
67	01	12

40-6940

File Copy

KAWECKI CHEMICAL COMPANY

Manufacturers of Chemicals, Metals and Alloys

BOYERTOWN • PENNSYLVANIA

Telephone: Area Code 215, 367-2181

CABLE ADDRESS: KAWECKIREM NEWYORK

January 10, 1967

Division of Materials Licensing
U. S. Atomic Energy Commission
Washington, D.C.

Attn: Mr. Don Harmon

Dear Sirs:

Enclosed is an application for amendment of our Source Materials License STB-849 to permit our processing of tin slags containing source materials (thorium and uranium) at our new plant in Reading, Pennsylvania. Our operations were discussed with you and Mr. C. McDonald on January 5, 1967 by our consultant, R. G. Gallaghar, of Applied Health Physics, Inc. In accordance with our discussions on January 11, we are submitting the enclosed Form AEC-2 and the supplemental information and attachments.

As described in the attached materials, Applied Health Physics, Inc. has monitored a production plant demonstration involving the processing of slags containing source materials using essentially the same processes we will use at our new facility in Reading, Pennsylvania. Their surveys did not detect any conditions which resulted in radiation levels in excess of prescribed limits. A copy of their report is attached. We have a contract with Applied Health Physics, Inc. to provide a comprehensive radiological safety program including monitoring of these processes, training our personnel, revising our procedures manual and assisting us in our operations involving source materials.

In view of the urgent demand for processing of these materials, we will appreciate your assistance in obtaining these amendments of our license and will be glad to provide any additional information to facilitate your expediting this request.

Sincerely your,

KAWECKI CHEMICAL COMPANY

Robert A. Gustison

Robert A. Gustison
Manager - Chemical Processing

RAG:des

109

40-6940

FORM AEC-2
(3-64)
Previous editions are obsolete.

FORM APPROVED
BUREAU OF BUDGET NO. 38-R002.

RECEIVED
JAN 11 1967

UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

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)
- ☐ (a) New license
- ☒ (b) Amendment to License No. STB-849
- ☐ (c) Renewal of License No. _____
- ☐ (d) Previous License No. _____

2. NAME OF APPLICANT
Kawecki Chemical Company

3. PRINCIPAL BUSINESS ADDRESS
220 East 42nd Street
New York, New York 10017

4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED (Additional locations)
Kawecki Chemical Company, Tulpehockin Street - Lehigh Valley RR, Reading, Pennsylvania
~~Kawecki Chemical Company, Boyertown, Pennsylvania~~ RG 4 return 1/11/67

5. BUSINESS OR OCCUPATION
Manufacturers of Chemicals, Metals and Alloys See Attachment 1

6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP

(b) AGE

7. DESCRIBE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED

Recovery of rare metals from various slags and ore residues containing natural thorium and uranium as unwanted contaminates.

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	Any	Any up to 0.04% U	24,000 as U (nat)
URANIUM DEPLETED IN THE U-235 ISOTOPE			
THORIUM (ISOTOPE)	Any	Any up to 0.2% Th.	120,000 as Th (nat.)

(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (*in pounds*)
60,000,000# in slags (0.1 - 0.2% Th) or approximately 120,000#

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.

Metallurgical processing of tin slags in electric furnace to be evaluated for radiological safety by qualified personnel from Applied Health Physics, Inc.

See supplemental sheets

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).

40 hour radiation safety orientation course or equivalent. Company RSO will be assisted by R. G. Gallaghar and/or other consultant health physicists from Applied Health Physics, Inc.

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).

Air sampling equipment, survey instruments as required by Applied Health Physics, Inc. and leased or used by Kawecki as part of radiological safety program recommended by consultants from Applied Health Physics, Inc. following their study of these processes.

(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).

Air samplers calibrated annually, survey meters quarterly by Applied Health Physics, film badges obtained from AHP, processed by Radiation Detection Company Radiation calibrations traceable to National Bureau of Standards sources.

109

11(c). VENTILATION EQUIPMENT WHICH WILL BE USED IN OPERATIONS WHICH PRODUCE DUST, FUMES, MISTS, OR GASES, INCLUDING PLAN VIEW SHOWING TYPE AND LOCATION OF HOOD AND FILTERS. MINIMUM VELOCITIES MAINTAINED AT HOOD OPENINGS AND PROCEDURES FOR TESTING SUCH EQUIPMENT.

To be determined on basis of results of air sampling during initial test runs; however, results of similar processing of tin slags have not indicated a need for special ventilation.

12. DESCRIBE PROPOSED PROCEDURES TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE AND PROPERTY AND RELATE THESE PROCEDURES TO THE OPERATIONS LISTED IN ITEM 9; INCLUDE: (a) SAFETY FEATURES AND PROCEDURES TO AVOID NONNUCLEAR ACCIDENTS, SUCH AS FIRE, EXPLOSION, ETC., IN SOURCE MATERIAL STORAGE AND PROCESSING AREAS.

Specific operating procedures will be prepared as a part of this research and development program for the processing of tin slags.

(b) EMERGENCY PROCEDURES IN THE EVENT OF ACCIDENTS WHICH MIGHT INVOLVE SOURCE MATERIAL.

See 12 (a).

(c) DETAILED DESCRIPTION OF RADIATION SURVEY PROGRAM AND PROCEDURES.

Radiation survey program will be under the direction of a certified health physicist and will conform to the recommendation of the National Council Radiation Protection & Measurement (NCRP).

13. WASTE PRODUCTS: *If none will be generated, state "None" opposite (a), below. If waste products will be generated, check here* ☒ *and explain on a supplemental sheet:*

(a) Quantity and type of radioactive waste that will be generated.

(b) Detailed procedures for waste disposal.

14. IF PRODUCTS FOR DISTRIBUTION TO THE GENERAL PUBLIC UNDER AN EXEMPTION CONTAINED IN 10 CFR 40 ARE TO BE MANUFACTURED, USE A SUPPLEMENTAL SHEET TO FURNISH A DETAILED DESCRIPTION OF THE PRODUCT, INCLUDING:

(a) PERCENT SOURCE MATERIAL IN THE PRODUCT AND ITS LOCATION IN THE PRODUCT.

(b) PHYSICAL DESCRIPTION OF THE PRODUCT INCLUDING CHARACTERISTICS, IF ANY, THAT WILL PREVENT INHALATION OR INGESTION OF SOURCE MATERIAL THAT MIGHT BE SEPARATED FROM THE PRODUCT.

(c) BETA AND BETA PLUS GAMMA RADIATION LEVELS (*Specify instrument used, date of calibration and calibration technique used*) AT THE SURFACE OF THE PRODUCT AND AT 12 INCHES.

(d) METHOD OF ASSURING THAT SOURCE MATERIAL CANNOT BE DISASSOCIATED FROM THE MANUFACTURED PRODUCT.

CERTIFICATE

(*This item must be completed by applicant*)

15. *The applicant, and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 40, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.*

KAWECKI CHEMICAL COMPANY
(*Applicant named in Item 2*)

Dated January 10, 1967

BY: John A. Cenerazzo
(*Print or type name under signature*)

Vice President - Operations
(*Title of certifying official authorized to act on behalf of the applicant*)

WARNING: 18 U.S.C. Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U.S. GOVERNMENT PRINTING OFFICE: 1964—O-706-977

40-6940

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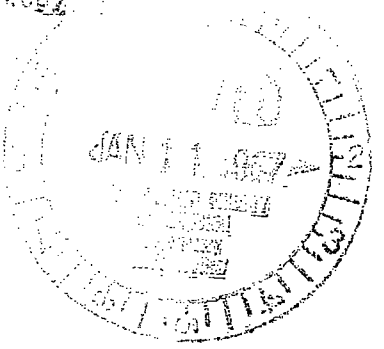


APPLICATION FOR AMENDMENTS OF

SOURCE MATERIALS LICENSE STB-849

SUPPLEMENTAL INFORMATION TO FORM AEC-2

Item 4 Location of Source Materials

Authorization is requested for two additional locations at which source material will be stored and processed.

Present locations: (1) B-11 Yard
Canton Railroad Pier
(Storage only) Baltimore, Md.

(2) Vanadium Corporation of America
Cambridge, Ohio

Additional locations:

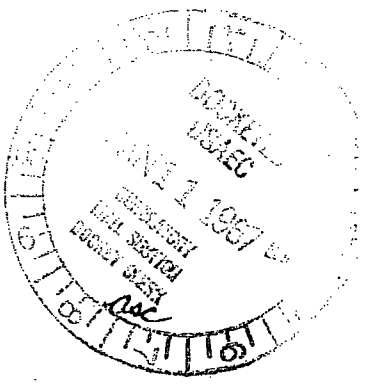
(1) Kawecki Chemical Company
Tulpehockin St., and Lehigh Valley Railroad
Reading, Pa. 19600

~~(2) Kawecki Chemical Company~~
~~County Line Road~~
~~Boyertown, Pa. 19512~~

R C Hunsicker 1/11/67

It is further requested that the following location be deleted from License STB-849:

Vanadium Corporation of America
Cambridge, Ohio



Item 5 Description of Business and Products

See Attachment 1. "Product List".

Item 7 Use of Source Materials

Source materials (natural thorium and uranium) are contained in tin slags as unwanted contaminates. These slags are obtained from various sources throughout the world to be processed by Kawecki

Chemical Company for recovery of rare metals (eg. tantalum and columbium).

Item 8 (a) Description of Source Materials

Natural uranium (30,000 lbs. maximum) in concentrations up to 0.05% is requested as addition to License STB-849.

Item 8 (c) Analyses of tin slags purchased thus far have shown thorium concentrations of about 0.11% and about 0.02% natural uranium. However, it is conceivable that these concentrations might change slightly but probably not exceed 0.2% Th and 0.04% U.

Item 8 (d) At the above concentrations the maximum amount of thorium (0.2%) available for processing at any location would be 60 million pounds of tin slags containing no more than 120,000 pounds natural thorium and about 24,000 pounds of natural uranium.

Item 9 Description of Metallurgical Processing of Tin Slags

The tin slags are shipped to our storage location in Baltimore (Location #1). These slags are stored in an open stock pile. The tin slags purchased thus far consist of glassy flakes, 6 mesh by down with less than 2% below 100 mesh and contain 0.11% thorium as ThO_2 plus about 0.02% uranium as U_3O_8.

A. Mix and Charge System

The tin slags will be shipped from Baltimore to Reading by rail in closed hopper cars. The slag will be dumped from the hopper cars into large concrete storage bins which hold about 250,000 pounds per bin. Slag will be carried in a closed conveyer

system to the mix-system hoppers where automatic weighing of the tin slags, coke and recycled non-magnetic alloys will be accomplished. The mixture will flow from feed hoppers into a traveling weigh larry that will discharge into a rake type mixer. Attachment 2 contains a diagramatic outline of the mixing and smelting operations showing estimated maximum concentrations of source materials involved in each phase of the process.

After mixing, the materials will be discharged into bottom discharge hopper cars that will be moved by crane to the furnace feed hoppers which will charge the furnace via two vibratory feeders.

B. Smelting Operation

The arc furnace is a 116 cubic foot 3-phase, 3000 KVA nose pour electric furnace manufactured by Universal Machinery Corporation. The furnace will be operated at about 2800 degrees F. The slag will be poured into a silica lined Whiting type bucket and placed on a pouring cradle mounted on a truck. The molten slag will be poured over the side of the slag dump where it will cool to form a black glassy mass containing most of the source materials. The alloy will be raked from the furnace into a periclase-padded cast iron ladle and taken to a cooling area.

After the hearth has cooled sufficiently, the ladle will be up-ended and the alloy button removed and smashed by a cast iron drop ball operated from an overhead crane. The alloy will be further reduced in size using a Blake-type jaw crusher. From the jaw crusher, the product will flow in a closed system to a

hydrocone crusher and magnetic separator. The magnetic fraction will be further crushed in a vibratory ball mill and sized on a closed Gyratory screen. This ground product will be chemically processed by Kawecki Chemical Company for recovery of the tantalum and columbium. The non-magnetic fraction will be recycled to the furnace.

C. Health Physics

Attachment 3 contains a copy of a report by Applied Health Physics, Inc. of health physics surveys made during pilot studies conducted at Vanadium Corporation of America's plant in Cambridge, Ohio. These studies were performed under the direction of Mr. Robert Gustison of Kawecki Chemical Company using essentially the same tin slags and procedures as will be used at Kawecki Chemical Company's plant in Reading, Pa. The pilot studies were done under contract from Kawecki Chemical Company and were covered by Vanadium Corporation of America's License SMB-850. Docket No. 40-7397 contains health physics information and license applications originally prepared by Applied Health Physics for Vanadium Corporation of America's use in these studies.

Results of radiological surveys conducted throughout various phases of the pilot studies at Vanadium Corporation of America showed air and surface contamination levels were below the current maximum permissible limits. When these data are adjusted for time of occupancy by personnel and the actual work schedules for the smelting and crushing operations, the average air contamination levels will fall well below those stated in the report by Dr. R. J. Augustine, Technical Director of Applied Health Physics, Inc.

Applied Health Physics, Inc. will monitor each step in the smelting operations described above. Samples will be taken of the products, wastes, and surface contamination. The concentrations of radioactivity in the air will be determined during various phases of the operations. Analyses and interpretation of the results of these samples will be made by Applied Health Physics, Inc. and reviewed with Mr. Robert Gustison. Based upon previous radiological surveys, we do not anticipate finding any concentration of radioactivity that will be in excess of maximum permissible limits, however we intend to thoroughly analyze any operation that creates levels of 1/10 of the limits specified in 10-CFR-20, Appendix B.

Item 10 Radiological Safety Qualifications and Training

A 40 hour radiological safety orientation course will be presented by Applied Health Physics, Inc. for selected supervisory and safety personnel of Kawecki Chemical Company. Attachment 4 contains a typical outline of this training program that has been used by Applied Health Physics, Inc. in training radiological safety officers for Du Pont, General Electric, Pittsburgh Testing Laboratories and other licensees.

Francis T. Coyle has been given the responsiblity and authority to serve as corporate radiological safety officer. He will be assisted by Robert G. Gallaghar and/or other consultant health physicists from Applied Health Physics, Inc.

Item 11 Radiological Safety Instrumentation & Equipment

The following instrumentation and equipment will be available for use in evaluating and controlling radiation risks:

Radiation Survey Meters:

(a) Alpha-beta: Eberline Model PAC-3 G alpha, beta survey meter
0-250,000 cpm 0.09 mg/cm^2

(b) Beta-gamma:

Mfg.	Model	Sensitivity	Window (mg/cm^2)	Range (mRad/hr)
Victoreen	Thyac	beta-gamma	2	0-20
Picker		beta-gamma	2	0-20
Nuclear Measurements Corp.	SGM	beta-gamma	2	0-20

Air Sampling Equipment:

Nuclear Measurements Corp. "Windjammer" 1 cfm.

Staplex High Volume air sampler 30 cfm.

Gelman Low Volume air sampler 0.5 cfm.

Air Filter Media:

(a) Gelman membrane

(b) Hurlburt HV-70

Smear Sampling Media:

(a) self-adhesive WP-1 from Applied Health Physics, Inc.

Lab. Analyses Instrumentation for Air, Product, Smears, etc.

Nuclear Measurements Corp. PC-1A gas proportional counter. Also Eberline alpha scintillation counter (modified by Applied Health Physics, Inc.) will be used for analyses of samples.

Film badges will not be required routinely since the concentration and type of source materials cannot be accurately monitored by existing dosimetry techniques.

Item 11 (c) Ventilation

The roof ventilated furnace system has an estimated exhaust capacity of 100,000 cfm. and will be operated during all smelting operations.

Item 12

Applied Health Physics, Inc. has prepared a Radiological Safety Procedures Manual covering uranium rolling at Kawecki Chemical Company. This manual will be modified to include safety procedures for routine and emergency conditions for all operations involving radiation. Copies of this manual will be issued to personnel and submitted to AEC and the Pennsylvania Health Dept.

Any proposed changes in procedures involving source materials will be reviewed in detail with our consultants from Applied Health Physics, Inc. and will be thoroughly evaluated and approved by them prior to being put into routine operation. Quarterly radiation surveys will be performed by Applied Health Physics, Inc. of all operations involving radiation.

KAWECKI CHEMICAL COMPANY

Manufacturers of Chemicals, Metals and Alloys

BOYERTOWN • PENNSYLVANIA

Telephone: Area Code 215, 367-2181

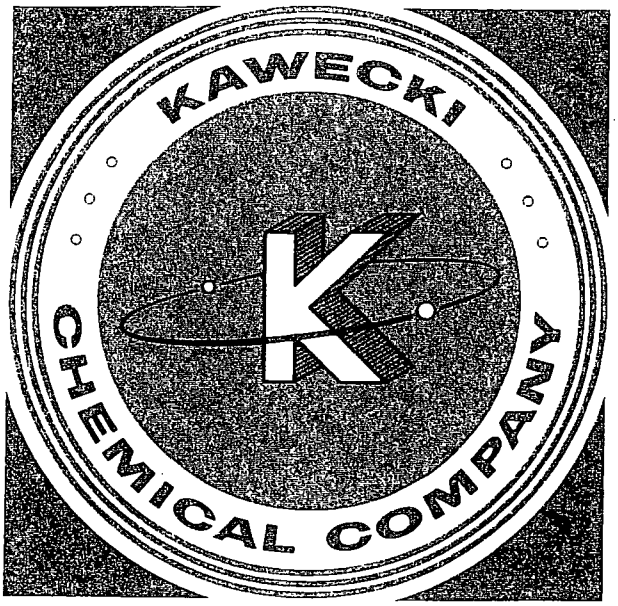
CABLE ADDRESS: KAWECHIKEM NEWYORK

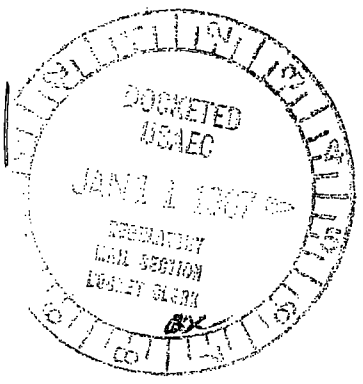
Supplemental Information Re: Item 13 WASTE PRODUCTS

Thorium and uranium wastes generated from metallurgical processing of tin slags will amount to about nine million pounds of slag per year. These wastes will be in the form of molten slag from electric furnaces and will be poured on our slag dump and allowed to cool to a glassy constituency at the western boundary of the Reading plant site. Other thorium and uranium wastes resulting from other research and development processes will be retained in a solid form for burial on site in concentration that will not exceed 1% U. or Th.

Attachment 1

40-6940





1965 Annual Report

To the Stockholders of Kawecki Chemical Company:

We are pleased to report that consolidated net sales for 1965 reached a record high of $19,037,106, as compared with $14,776,645 in 1964, an increase of over 28%. Consolidated net income after Federal and State taxes was $613,140 or 53¢ per share based on 1,159,049 shares outstanding as of December 31, 1965, in contrast with a loss of $882,188, after a special adjustment, in 1964.

The Company has resumed its steady growth which has characterized its operations since its organization.

All of our major product lines contributed to the improved results for the year. The greater use of tantalum in the electronics industry, which was forecast in our Report to Stockholders last year, has been realized. The gains in technology and product development made by the Company, and more efficient production processes by manufacturers of tantalum capacitors, resulted in new and broadened commercial applications for these devices, particularly utilizing tantalum powder and tantalum wire in the production of solid electrolyte tantalum capacitors. By utilization of the improved chemical quality and much higher electrical capacitances of our tantalum powders, capacitor manufacturers have been able to reduce prices to levels that have opened up entirely new fields of application for devices such as computers, television and radio receivers, other communications equipment and electronic systems where reliability, miniaturization and transistorized equipment are important. We believe these markets will continue to grow substantially. In addition, new and interesting applications are developing for tantalum and tantalum alloys in the chemical, nuclear and high temperature fields.

Since our last annual report the price of tantalite ore has increased steadily due to increased demand and political instability in the areas where tantalite occurs as a by-product. We have adequate reserves of ore and, in addition, have the world's largest "tantalum mine above ground" in the form of tin slags which we have purchased during the past five years. We expect to have in operation a tin slag recovery and concentrating plant during the next twelve to eighteen months. This will further protect our position in this critical tantalum raw material.

We continue to be a major supplier of aluminum base master alloys and double fluoride salts to the aluminum industry, due to our technical competence and ability to provide superior products and excellent technical sales service to our customers. The primary aluminum industry is operating near capacity and should continue to grow steadily. We are involved in many research and development programs in this field and in 1967 will expand our production facilities substantially.

We have become an important supplier to the high temperature superalloy (nickel and cobalt base alloys) industry because of the extremely high purity and quality of our ferro-columbium and nickel-columbium alloys. The demand for these superalloys is growing quite rapidly and our capacity to produce will be taxed for the next several years. Requirements for columbium, as columbium base alloys, are increasing. We have introduced to the aerospace and high temperature industries the recently developed SU-16, a columbium base alloy, for which we are the exclusive United States manufacturing and sales licensee of Imperial Metals Industries, a subsidiary of Imperial Chemical Industries, Ltd., England. Initial interest in this alloy is highly promising. The interest in columbium-zirconium, columbium-titanium and columbium-tin alloys for use in superconducting magnets is increasing and we are supplying these materials both as wire and foil. We anticipate that the superconducting magnet, which is a close approximation to perpetual motion, will have important commercial applications in the years immediately ahead.

Our subsidiary, Duramic Products Inc., increased its sales and profits substantially. Sales benefited from the improved activity of the semiconductor industry and from the research and development work of our Company. Additional equipment of a more sophisticated variety was added in 1965, doubling the plant capacity. The new equipment not only increased our productive capacity and efficiency, but also has enabled us to work with materials which were beyond our previous capabilities. We are now able to fabricate and supply parts made from boron nitride, tantalum, columbium, molybdenum, stainless steel and a variety of ceramics. Based on current backlog of sales orders, increased activity of the electronics industry and our wider range of products, we expect a further increase in sales and profits for Duramic Products in the current year.

Sales of Penn Rare Metals increased satisfactorily above previous levels as a result of greatly improved operations and quality of product. The quality of our germanium and our technical service will assure our position as an important supplier to manufacturers of germanium devices. Sales of cesium and rubidium in research and pilot plant quantities to leading research laboratories, universities and corporations continue at an accelerated rate. Exciting and important technical developments have taken place in a number of interesting programs such as ion engines using cesium as a fuel propellent, and in the field of magneto-hydrodynamics where heat will be converted directly into electrical energy. This encourages us to expect increased future sales of cesium and rubidium and their compounds.

Our Metalonics division has been utilized as a research and development facility, in addition to producing copper-phosphorous and copper-phosphorous-silver brazing alloys. The development of our copper-cored glass sealing wire for the electrical industry has reached the stage of initial commercial production. The nuclear and atomic energy fields continue to be interested in our extruded thin wall tungsten tubing and transition joints of dissimilar metals and materials.

N. V. Kawecki-Billiton Metaalindustrie, which we own jointly with N. V. Billiton Maatschappij, operated at a small overall loss in 1965. However, acceptance of its aluminum base master alloys abroad was most gratifying. During 1966 its master alloy facilities in Arnhem, Holland, will be doubled and a new plant facility at Darley Dale, England, will be built to take care of United Kingdom requirements. We expect 1966 to be profitable.

Since the future growth of our Company is primarily based upon advanced research and development, we increased our expenditures in this area during 1965. We continue to make progress in improving the overall quality of our products

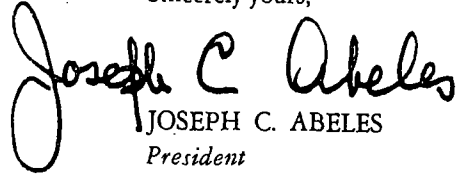
and in opening up new potential sales areas. We have developed materials for the maser, laser and fibre optic fields and believe that these will be important commercial products in the near future. We continue to operate on the philosophy that our customers' problems are our research department's number one assignment and, when solved, provide new products for our Company to produce and sell.

The financial position of our Company is strong. As shown in the accompanying consolidated balance sheet, cash and certificates of deposit in current assets increased by $2,116,117 over 1964's year end cash position. Of significance in 1965 was the repayment of all short-term bank obligations amounting to $1,802,250, and the prepayment of long-term debt of $314,000. Because of our strong fiscal position, we can finance internally our expected growth and take advantage of any interesting opportunities which may arise in our fields of interest.

The refusal of our hourly paid employees to go along with the terms of a new contract negotiated by their union representatives resulted in a strike shutdown of our Boyertown plant on March 1, 1966. The strike was settled on March 15 with a two-year contract. The plant was reopened on March 16 and our normal good relations with our employees have been resumed.

The outlook for 1966 is excellent. There is strong demand for all our major product lines. Our continuing cost reduction programs are resulting in more satisfactory margins of profit. All indications are that sales will increase during 1966 and profits will increase proportionately even more.

Sincerely yours,



JOSEPH C. ABELES
President

March 24, 1966

KAWECKI CHEMICAL COMPANY

AND SUBSIDIARY

COMPARATIVE CONSOLIDATED STATEMENT OF INCOME AND EARNED SURPLUS / DEFICIT

For the year ended December 31, 1965-1964

	1965	*1964*
Net sales	$19,037,106	$14,776,645
Costs and expenses (including depreciation of $548,438—1965 and $480,788—1964):		
Cost of sales	14,874,833	12,155,893
Selling, general, administrative, research and development expenses	2,579,553	2,643,161
Interest expense—net	299,580	417,686
	17,753,966	15,216,740
Net income or (loss) before Federal and state taxes based on income and charge described below	1,283,140	(440,095)
Provision for or (refund of) Federal and state taxes based on income—net	670,000	(311,200)
Net income or (loss) before charge described below	613,140	(128,895)
Adjustments in inventory valuation due to changes in market conditions, net of applicable income tax refunds of $819,400		(753,293)
Net income or (loss)	613,140	(882,188)
Earned Surplus/(Deficit) as at December 31, 1964-1963	(667,636)	214,552
	(54,496)	(667,636)
Charge—Note E	59,000	
(Deficit) as at December 31, 1965-1964	($113,496)	($667,636)

Red figures are denoted by ( ).

The accompanying notes are an integral part of this statement.

ATTACHMENT 2

56,670 lb. TIN SLAG (420 Cu. Ft.)
(8 BATCHES) 62.3 lbs ThO_2
12.5 " U_3O_8

MIXER ← 8000 lb. 1/4" X D COKE (≈100 Cu. Ft.)
(1000 lb/BATCH)

TRANSPORTABLE
FEED HOPPER (8)

ARC FURNACE ← 56,670 KWH

8 TAPS

SLAG
32,000 lb.
320 Cu. Ft.
55. lb ThO_2
11. lb. U_3O_8

HEARTH
20,000 lb.
80 Cu. Ft.

DROP BALL
12" X D

CRUSHER
3/4" X D

HYDROCONE
8M X D

MAG. SEP.

7.3 lb ThO_2 MAG. FRAC. 16,000 lb.
1.5 lb U_3O_8

NON. MAG. — 4,000 lb.

BASIS: PER 24 HR. DAY

KAWECKI CHEMICAL CO. BOYERTOWN, PENNSYLVANIA			
LIMITS UNLESS OTHERWISE NOTED: FRACTIONAL ± 1/64" DECIMAL ± .010" ANGULAR ± ½°		~~THIS DRAWING IS OUR PROPERTY AND MUST BE USED ONLY IN CONNECTION WITH OUR WORK. ALL RIGHTS RESERVED.~~	
SCALE	DATE 10/9/57	SMELTING OPERATION	SHEET NO. ____ OF ____
DRAWN RCS	APPROVED		DRAWING NUMBER 109
CHECKED			REV.