3756

IL.19

IL.19-2

3pgs

CM

MEMORANDUM

TO: FILE

DATE 11/11/87

FROM: Andrew Wallo

SUBJECT: Elimination of Kaiser Aluminum Co.

SITE NAME: Kaiser Aluminum Corp. ALTERNATE NAME: _____

CITY: Dalton STATE: IL

OWNER(S)
Past: Kaiser Aluminum Current: _____
Owner contacted ☐ yes ☒ no; if yes, date contacted _____

TYPE OF OPERATION
☒ Research & Development
- ☐ Production scale testing
- ☐ Pilot Scale
- ☐ Bench Scale Process
- ☐ Theoretical Studies
- ☐ Sample & Analysis
- ☐ one time Production of extruded U

☐ Production
☐ Disposal/Storage

☐ Facility Type
- ☐ Manufacturing
- ☐ University
- ☐ Research Organization
- ☐ Government Sponsored Facility
- ☐ Other _____

TYPE OF CONTRACT
☐ Prime
☐ Subcontractor
☐ Purchase Order

☐ Other information (i.e., cost + fixed fee, unit price, time & material, etc) _____

Contract/Purchase Order # _____

CONTRACTING PERIOD: Identify Records of only one extrusion operation in 1959 for ANL

OWNERSHIP:

	AEC/MED OWNED	AEC/MED LEASED	GOVT OWNED	GOVT LEASED	CONTRACTOR OWNED	CONTRACTOR LEASED
LANDS	☐	☐	☐	☐	☒	☐
BUILDINGS	☐	☐	☐	☐	☒	☐
EQUIPMENT	☐	☐	☐	☐	☒	☐
ORE OR RAW MATL	☐	☐	☐	☐	☐	☐
FINAL PRODUCT	☒	☐	☐	☐	☐	☐
WASTE & RESIDUE	☐	☐	☐	☐	☐	☐

Kaiser extruded some fuel elements (Normal Uranium) for ANL Reactor CP-5.

AEC/MED INVOLVEMENT AT SITE

Control
- ☐ AEC/MED managed operations
- ☐ AEC/MED responsible for accountability
- ☑ AEC/MED overviewed operations
- ☐ Contractor had total control
- ☐ unknown

ANL Monitored the operation and found no residual radioactivity

☑ Health Physics Protection
- ☐ Little or None
- ☑ AEC/MED responsibility
- ☐ Contractor responsibility

MATERIALS HANDLED:

Type (on basis of records reviewed)

- ☐ No Radioactive
- ☑ Natural Radioactive from Feed Materials Production
  - ☐ Ore
  - ☐ Refined Source Material
  - ☐ Residue
- ☐ Natural Radioactive Material from Non-Nuclear Activities
- ☐ Man-Made
- ☐ Other _____

Comment Normal Uranium Oxide

Quantities (on the basis of records reviewed)

- ☐ None
- ☐ Production Quantities
- ☐ Small Amounts

Comment Extruded several Billets total quantity unknown appears to involve only a few days of activity

OTHER PERTINENT FACTS:

- ☐ Facility was Licensed
  - ☐ During AEC/MED-Related Operations
  - ☐ For Similar Activities
  - ☐ For Other Activities

  Comment _____
- ☐ Commercial Production Involving Radioactive Material during AEC/MED Operations
- ☐ Facility was Decontaminated and Released
  - ☐ Availability of Close Out Records
    - ☐ None
    - ☐ Some
    - ☐ Sufficient
- ☑ Radioactive Status:

	YES	MAYBE	PROBABLY NOT	NOT	
Contaminated	___	___	___	X	Based on ANL Survey Report
Potential for Exposure (accessible)	___	___	___	X	

QUANTITY OF RECORDS AVAILABLE:

☒ Very Little ☐ Some ☐ Sufficient

PROBABILITY OF FINDING ADDITIONAL RECORDS:

☒ Low ☐ Possible ☐ High

RECOMMENDATIONS:

☒ Eliminate
☐ Consider for Remedial Action
☐ Collect More Data

Comment This operation was only for a few days and ANL monitoring indicated No residual activity.

REFERENCES:

A Hubbard

SUMMARY This site was evaluated because of some extrusion work (uranium fuel) done for ANL for CP-5 reactor. The period of time was small and the ANL survey indicated No residual activity.
The Kaiser company was also considered by the AEC as a participant in the program to develop sources of Uranium (from a pilot plant) However, it appears they were not selected to participate.

alternate

KAISER ALUMINUM

DATE	FILE#	FROM	TO	SUBJECT	SITES	BOX #	
08/19/54	3.1RMD	REPORT	DISTRIBUTION	RECOMMENDATIONS ON CERTAIN PHASES OF THE PROCESS DEVELOPMENT PROGRAM	ARMOUR & CO., A.D. LITTLE, COLUMBIA UNIVERSITY, DOW, BATTELLE, INTERNATIONAL MINERALS & CHEMICAL CORP., ROHM & HAAS, DAVISON CHEMICAL CO., KAISER ALUMINUM CO.	4/8	1862
03/20/59	IL.19	McKEE, C.	NOVAK, J.	EXTRUSION OF BILLETS, KAISER ALUMINUM CORPORATION, DOLTON, IL (CONTAINS AIR SAMPLE DATA)	KAISER	XZ2	2178
~~06/30/5~~	~~WA.1~~	REPORT	Envir file	MANAGER'S DATA BOOK - HANFORD	HANFORD BLAW-KNOX, KAISER, UNION CARBIDE, SPEER CARBON, CHARLES T. MAIN	1604	3591

Chicago Occupational Health + Safety
Jot II 6.35
Box X 22, Bldg 14
162D6

OPERATED BY THE UNIVERSITY OF CHICAGO
BOX 299 LEMONT, ILL.
TELEPHONE LEMONT 800
TELEGRAM WUX LB LEMONT, ILL.

ll. 19

INDUSTRIAL HYGIENE & SAFETY
Info
RECD MAR 20 1959 TELETYPE WX LEMONT, ILL. 1710
Reply
Log File KAISER AL.

March 20, 1959

To: J. R. Novak Industrial Hygiene & Safety

From: C. S. McKee Industrial Hygiene & Safety

Subject: Extrusion of Billets, Kaiser Aluminum Corporation, Dolton, Illinois

C. S. McKee monitored the extrusion of three CP-5 type fuel elements on February 17, 1959. The extrusion operation was accomplished at the Kaiser Aluminum Corporation, Dolton, Illinois. The extrusions were carried out by Kaiser personnel under the supervision of L. C. Hymes (MET) and T. N. Czaplicki (MET). Normal U_3O_8 was used in the elements.

The billets had been transported to the plant by Mr. Hymes on February 16. The billets had been placed in the furnace overnight in order to obtain the proper temperature for extrusion.

Mr. McKee made a preliminary survey of the area around the press and run-out table before the operation began. No activity was detected in this survey.

An air sample was collected during the entire operation. This sample revealed no long lived airborne activity.

A survey of the area around the press and run-out table was made following the operation. No activity was detected in this survey.

The press, furnace and run-out table were the only facilities used.

C. S. McKee

CSM:ni
Att.
cc: L. C. Hymes, w/att.
A. G. Januska, w/att.
G. T. Lonergan, w/att.
R. A. Noland, w/att.
Reading File, w/o att.
File, w/att.
CF, w/o att.

~~Location~~	~~Requestor~~	~~Surveyor~~	~~Request~~		~~Results~~
			Portable Instrument Survey		
Billet #	Time Extruded	Tape Shear of Plate	Beta-Gamma	Alpha	Remarks
F2	0925	NAD	11/1" H&S	NAD	Slight rippling of cladding
Pushed Cleanout Billet	1000	NAD	NAD	NAD	Extruded Tube surveyed both inside & outside.
F1	1015	NAD	15/1" H&S	3-4M	Bad tearing of cladding
F3	1020	NAD	14/1" H&S	10-20M	Rough blistering of cladding.
Pushed Cleanout	1030	NAD	NAD	NAD	Surveyed both inside and outside.

HS-39 (11-54)

AIR SAMPLE DATA

1. DATE	5. TIME ON	6. TIME OFF	7. RUN TIME	SUSPECTED ACTIVITY	14. PROTECTION WORN	15. FIRST COUNT FACTOR $\frac{\beta\gamma}{\alpha}$ =
2-17-59	0925	1115	110 MIN	11. URANIUM (Nor.)	SUPPLIED AIR ☐	
2. ROOM: 8000 T Press	8. FLOW RATE: 15 M³/hr ÷ 60 = .25 M³/min; ____ cfm ÷ 35.4			12. MPC ~~OPC~~ α-70 d/m/M³	ASSAULT MASKS ☐	16. FINAL COUNT FRACTION OF: MPC OR OPC (whichever used) — α / βγ: ≥1X ☐ ☐; ≥10% ☐ ☐; <10% ☒ ☒
3. BLDG.: Kaiser Aluminum				13. MPC ~~OPC~~ β-2200 d/m/M³	RESPIRATORS ☐	
4. OPERATION CODE	9. SAMPLER TYPE: F.Q.	10. VOLUME: 27.5 M³			NONE ☒	

17. REMARKS: Taken during extrusion of the CP-5 type fuel rods containing normal U_3O_8 at Kaiser Aluminum Corp, Dolton, Ill.

18 DATE AND TIME OF COUNT	GROSS COUNT: 19 RECORDERS	20 SCALERS	21 TOTAL COUNTS	22 COUNT TIME (MINUTES)	23 COUNTS PER MINUTE	BKGD: 24 COUNTS PER MINUTE	NET: 25 COUNTS PER MINUTE	26 COUNTER YIELD	27 SELF ABSORPTION FACTOR	28 DISINTEGRATIONS PER MINUTE	29 d/m/M³	30 PER CENT OF MPC OR OPC	31 TYPE OF ACTIVITY	32 DECAY TIME	33 INITIALS
2-17 (1357)	—	37	37	2	19	2	17	.17	1.3	130	4.7	6.7%	α	2H 43M	CLM
2-17 (1359)	—	115	115	2	58	32	26	$^{10}_{20}$	—	1300	47	2.1%	β	2H 45M	CLM

3.1 RniD 4/8 RMD

D. E. Kentro
A. E. Brown
J. C. Johnson

ARCH & DEVELOPMENT

As a result of the meeting held last Wednesday, August 11th, in Mr. Johnson's office, the following action is recommended concerning certain phases of the process development program.

1. Armour and Company

The small development contract we have with Armour is expiring September 30th. It will be permitted to expire at that time. However, should Armour wish to continue some studies on their own, using the Government equipment which we have at Armour, permission will be granted to do so.

2. Arthur D. Little, Inc.

They will continue at the approved level on support work on alkaline processes for the Grand Junction pilot plant. However, the work on the modified char process for recovering uranium from Plateau ores will be brought to a conclusion as soon as practicable. Discussions will be held to determine the possibilities of utilizing the modified char technique to recover uranium from leached zone. It is felt that it is particularly important that this approach be studied because at the moment a modified char technique holds promise of being the best method of recovering uranium from phosphate pulps. RIP techniques do not appear encouraging because of the general failure of using ion exchange resins in phosphate solutions. In addition, the preliminary investigations of solvent extraction on leached zone pulps did not prove satisfactory due to bad emulsion formation. To implement the above change in program, Arthur D. Little will be contacted and a meeting arranged to discuss the reorientation of their program.

Vice President

HAdler/ek-Encl.

approved rate. However, close supervision will be required to insure that time schedules are met as closely as possible. The two programs are the laboratory work on alkaline processing for the pilot plant and the non-aqueous (HCl-acetone) process. The latter holds promise of high uranium recovery at lower capital cost.

4. Columbia University

It is estimated that it will require approximately two years, with an expenditure of $1,000,000 a year, to develop a process up to but not including pilot plant scale to recover uranium from shale. Because of the probability that by the end of two years we will be in a position to go directly into pilot plant operation, it is deemed advisable to consider a stretch-out of the shale program; the advantages being that less money will be spent annually and at the conclusion of the laboratory scale program, if it is stretched out, we may be close to the time when piloting will be necessary. For the immediate picture, Columbia will be contacted regarding cutting back current operations from the approved level which was a million dollars a year to a rate equivalent to last year's expenditures which was $700,000 a year.

To implement this action, a visit will be made to Prof. Hassialis to discuss these new plans.

5. Dow Chemical Company

The approved program on solvent extraction and assistance to ammonia acid recovery units and TVA pilot plant will continue at the approved level. The proposed program for working on an alkaline process to recover uranium and phosphate chemicals from leached zone will be re-evaluated. Because of

Vice President

HAdler/ek-Encl.

3. Battelle Memorial Institute

The two programs Battelle is undertaking will continue at the approved rate. However, close supervision will be required to insure that time schedules are met as closely as possible. The two programs are the laboratory work on alkaline processing for the pilot plant and the non-aqueous (HCl-acetone) process. The latter holds promise of high uranium recovery at lower capital cost.

4. Columbia University

It is estimated that it will require approximately two years, with an expenditure of $1,000,000 a year, to develop a process up to but not including pilot plant scale to recover uranium from shale. Because of the probability that by the end of two years we will be in a position to go directly into pilot plant operation, it is deemed advisable to consider a stretch-out of the shale program; the advantages being that less money will be spent annually and at the conclusion of the laboratory scale program, if it is stretched out, we may be close to the time when piloting will be necessary. For the immediate picture, Columbia will be contacted regarding cutting back current operations from the approved level which was a million dollars a year to a rate equivalent to last year's expenditures which was $700,000 a year.

To implement this action, a visit will be made to Prof. Hasialis to discuss these new plans.

5. Dow Chemical Company

The approved program on solvent extraction and assistance to phosphoric acid recovery units and TBA pilot plant will continue at the approved level. The proposed program for working on an alkaline approach to recover uranium and phosphate chemicals from leached zone will be re-evaluated. Because of

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Vice President

the personal commercial interest that Dow may have in this work, their interest in pursuing the work at their own expense will be solicited. This phase of the program will probably be cut back as soon as practicable.

Because of Dow's background in the phosphate program, it is possible that they may be of some value in conducting some studies perhaps in conjunction with Davison and Merrill on recovering uranium alone from leached zone particulary ore from the Clark James ~~body~~.

To implement the above action, Dow will be contacted and a meeting arranged to discuss the reorientation of this year's program.

6. International Minerals & Chemical Corporation

IMCC will wind-up the work they are doing on a one-product system. In order to do this a meeting will be held sometime in September to study the results of the laboratory work for the purpose of determining whether or not it is advisable to develop a process through pilot plant work. If the laboratory work does not indicate any possibility of favorable results from this source, the pilot plant activities will not be undertaken. In any event, it is hoped that the entire project will be concluded by the end of Fiscal Year 1955.

The initial action for setting up the meeting in September has already been taken.

7. Rohm and Haas Company

The Rohm & Haas program will be reviewed to determine the advisability of continuing to support activities which may be of interest to the commercial aspects of the company. Rohm & Haas has already been presented with the problem and they are reviewing the situation from their point of view and will advise us of their recommendations in the near future.

Vice President

HAdler/ek-Fncl.

In addition to the above, two proposed contracts were discussed at this meeting:

1. Davison Chemical Company Leached Zone Project: It is recommended that they be contacted and encouraged to continue the work on their leached zone at their own expense, because of the commercial interest they may have in this source. We have already contacted Davison and told them that any further action concerning the leached zone program would have to be delayed until we get the final exploration report. Since the preliminary results of this exploration report are exceeding our ~~highest~~ expectations, we believe that a different course of action might be advisable. Therefore, as soon as the final report of the exploration program is received, a meeting will be held with Davison personnel to discuss leached zone development. No action will be taken to financially support Davison on this work at this time.

2. Kaiser Aluminum Company: We have already indicated to Kaiser that we are inclined to favor entering into a development contract at this time to provide for their testing certain alkaline approaches on leached zone in their pilot plant. However, as a result of the meeting, it is recommended that Kaiser be notified that due to possible budget cuts and program reorientation, we will be unable to enter into a contract with them for this work. In addition, it will be pointed out to them the advantages to them of carrying on the work at their own expense and they will be encouraged to do so. We, in turn, will supply them with all

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Vice President

the information and cooperation that we can in order to develop the leached zone as a source of alumina and uranium. To implement this recommendation, Kaiser will be contacted and a meeting arranged where the above items will be presented to them.

No action will be taken to financially support Kaiser on this work at this time.

about a dozen pages on status follow (not typed)

HAdler/ek-Fnal.

Vice President

NAME AND ADDRESS	DOCKET NUMBER	LICENSE NUMBER	PROGRAM CODE	EXPIRATION DATE	STATUS
JOLIET DIAGNOSTIC IMAGING LTD. 330 NORTH MADISON ST. JOLIET IL 60435	030-18577	12-24394-01	02200	01/31/90	0
JOSEPH J KOZMA MD 1440 W. WALNUT JACKSONVILLE IL 62650	030-01492	12-08943-01	02200	11/30/73	4
JUSTICE, DEPARTMENT OF 723 MAIN POST OFFICE BLDG. 433 CHICAGO IL 60607	030-04278	12-13358-01	03120	07/31/79	4
KABRE, MD.D., NEELIMA D. 600 E. FIRST STREET SPRING VALLEY IL 61362	030-28569	78105	02201	/ /	3
KAISER CHEMICALS 14200 COTTAGE GROVE DOLTON IL 60419	030-10076	12-15941-01	03120	02/28/79	4
KARIM S. VALIKA MD. 1559 WEATHERSTONE LANE ELGIN IL 60120	030-11756	59694	02200	/ /	4
KATALCO CORP. 4099 W. 71ST STREET CHICAGO IL 60629	030-20871	12-20220-02	03120	12/31/88	0
KATALCO CORPORATION 4099 WEST 71ST STREET CHICAGO IL 60629	030-18111	12-20220-01	03120	01/31/87	4
KATHERINE SHAW BETHEA HOSPITAL 403 EAST FIRST STREET DIXON IL 61021	030-13069	12-17622-01	02120	10/31/87	0

For measuring cysterns and gages

NAME AND ADDRESS	DOCKET NUMBER	LICENSE NUMBER	PROGRAM CODE	EXPIRATION DATE	STATUS
KAY-RAY INC 516 W. CAMPUS DRIVE ARLINGTON HTS IL 60004	030-11023	X-12-718	03800	11/01/76	4