

775013

GHQ/SCAP Records(RG 331)
Description of contents



- (1) Box no. 2724
- (2) Folder title/number: (12)
 Miscellaneous
- (3) Date: May 1950, Sept. 1950
- (4) Subject:

Classification	Type of record
9616	e

- (5) Item description and comment:
 Tochigi, Gumma

- (6) Reproduction: * Yes No
- (7) Film no.

Sheet no.

COPY

KANTO
INFORMATION:O.D. 11/11

OCT. 12 1950

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
Economic and Scientific Section
Public Finance Division
APO 500

123(28 Sept 50)ESS/PF

28 September 1950

SUBJECT: Counterpart Fund Loan to Seika Mining Co., Ltd.

TO: Ministry of Finance, No. 6 Honshio-cho, Yotsuya, Tokyo

1. References are:

a. Application for loan from the U.S. Aid Counterpart Fund for Japanese Stabilization submitted by the Seika Mining Co., Ltd.

b. Memorandum for Economic and Scientific Section, GHQ, SCAP, from Ministry of Finance FCO 1496/50 (FI/CF-314), dated 10 August 1950, subject: Application for release of Counterpart fund for a Loan to Seika Kogyo K.K. (Seika Mining Co., Ltd.)-continuing project from 1949 JFY.

2. No objection is offered to approval of a Counterpart fund loan to Seika Mining Co., Ltd. in the amount of ¥ 80,000,000, funds to be released as needed. Proceeds will be used to finance continuing projects of development in the Akabira Mine, pits 1 to 4.

3. Loan is subject to the following conditions:

a. Interest rate is 7.5% per annum.

b. Security and repayment will be as set forth in reference

1b.

c. The company will submit in advance for review to the Ministry of Finance its plans for new construction, sale of securities, and disposition of the proceeds thereof to insure against diversion of funds to non-essential developments and to make certain that programs detrimental to repayment of Counterpart fund loans are not undertaken.

/s/ W. F. Marquat
W. F. MARQUAT
Major General, U.S. Army
Chief, Economic and Scientific Section

Mr Jones

June

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KANTO
INFORMATION
O.D.

JUN - 6, 1950

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
Natural Resources Section

NR 631 (15 May 50)MG

HGS/RYG/CHH/1b
15 May 1950

MEMORANDUM FOR: Record

SUBJECT: Technical Examination of Metallurgical and Operational Practices at Zinc and Copper Plants in Gumma and Tochigi Prefectures

1. Authorization: LO 79-36, GHQ, FEG, 30 March 1950

2. Mission: To examine operational and metallurgical practices at Annaka electrolytic zinc plant, Gumma Prefecture, Ashio copper smelter and Nikko electrolytic copper refinery, Tochigi Prefecture; to discuss metallurgical problems, and ascertain what action has been taken on recommendations previously made by NR personnel.

a. Reference, Memorandum for Record, NR 631 (4 Oct 48)MG, subject: Inspection of Annaka electrolytic zinc plant, Gumma Prefecture, Kamioka lead and zinc metallurgical plants, Gifu Prefecture, and Ogoya copper smelter, Ishikawa Prefecture.

b. Reference Memorandum for Record, NR 631 (6 Jan 49)MG, subject: Inspection of Hitachi copper smelter and refinery, Ibaragi Prefecture, and Nikko copper refinery and Ashio copper smelter, Tochigi Prefecture.

c. Reference Memorandum for Record, NR 631 (27 Nov 48)MG, subject: Inspection of Nikko copper refinery, Tochigi Prefecture.

3. Personnel:

Messrs C. B. Hoskins, non-ferrous metallurgist, and T. Kasahara, technical consultant, NR.

4. Summary of Results:

a. Monthly cathode zinc production at Annaka electrolytic zinc plant is 400 metric tons per month, additional plant facilities being installed will increase capacity to nearly 500 metric tons monthly. At present, roasting is being done elsewhere but a new roaster section plus a 50°B tower sulfuric acid unit is under contract. A 20 metric tons per month Betts electrolytic plant is operating. Construction is being completed on a 200 metric tons per month Betts lead refining plant to handle crude bullion produced from company's Taishu mine and smelted in the newly acquired Chigirishima lead smelter. Present power rates are a

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source of increasing anxiety because allocation cuts the average cost to nearly the break-even point.

b. The Ashio mill mine-water treatment plant and copper smelter is handicapped by a decreasing grade of ore, worn-out equipment, and the necessity of treating 350 cubic feet per minute of mine water to prevent river pollution. The mill handles 1,100 metric tons a day of 0.8 percent copper ore to produce concentrate for ore blast furnace. Copper matte is blown to blister copper and shipped to Nikko refinery. The company is considering the smelting of concentrates in electric furnaces and the recovery of available sulfur dioxide as sulfuric acid. Company-owned electric power is available.

c. The Nikko copper refinery is supplied with blister anodes from Ashio, Ooarizawa, and Haseei smelters, and electric power comes from a company-owned source. The cathode copper is fabricated into wire or sheet, or is sold as wire-bar copper. The refinery comprises one unit of a big fabricating industry and is dependent on it but receives little metallurgical attention.

5. Recommendations:

a. Annaka Refinery.

- (1) Consideration should be given to vacuum distilling brass scrap to replace the present complicated electro-winning of zinc and copper from brass scrap. Increasing electric power costs and a decreasing supply of brass scrap necessitates serious consideration of a cheaper method.
- (2) Present stores of brass scrap, zinc residues, and intermediates should be stored under cover. In accordance with previous NR recommendations, this has been partially done.
- (3) Efforts should be made to "eliminate" dusting in the present methods of handling calcine.
- (4) Intermediates and residues bearing metallic values should be processed and not allowed to accumulate. The metallurgical staff is in agreement but are busy expanding the existing plant and planning new sections.
- (5) Permanent, accurate operating data should be kept. The staff is in agreement, but because of other immediate demands is unable to set up and maintain such a system.

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b. Ashio mill and copper smelter

- (1) Clay and foreign material should be removed from the ore by "log-washing", the overflow thickened, and the thickener spigot product sent to be fine ground prior to flotation. The washed mill-heads should be closed-circuit crushed to uniform size and washed well before delivery to the heavy-density separation plant.
- (2) Wet grinding and classification of ferrosilicon should replace dry grinding and air classification as at present.
- (3) It was recommended that Ashio manufacture its own ferrosilicon. Experimental work has produced a product superior to the present purchased supply.
- (4) Reagent feeders in the mill should be replaced with types that give better control; and better mill lighting should be installed.
- (5) Experiments should be conducted using electrophoretic filtration of the mine-water treatment slurry; and using spray drying.
- (6) Intermediates, residues, and scrap should be processed and not allowed to accumulate.
- (7) The smelter flue system should be cleaned but be followed by a study of the system to more effectively remove dust and fume.
- (8) The entire smelter should be cleaned up; following this, study should be made to eliminate fume and dust at working places.
- (9) Metallurgical accounting would convince management that a large amount of money is tied up in plant byproducts, and the loss in interest on that money is considerable.
- (10) Plant lighting should be improved and industrial hazards removed.

c. Nikko copper refinery

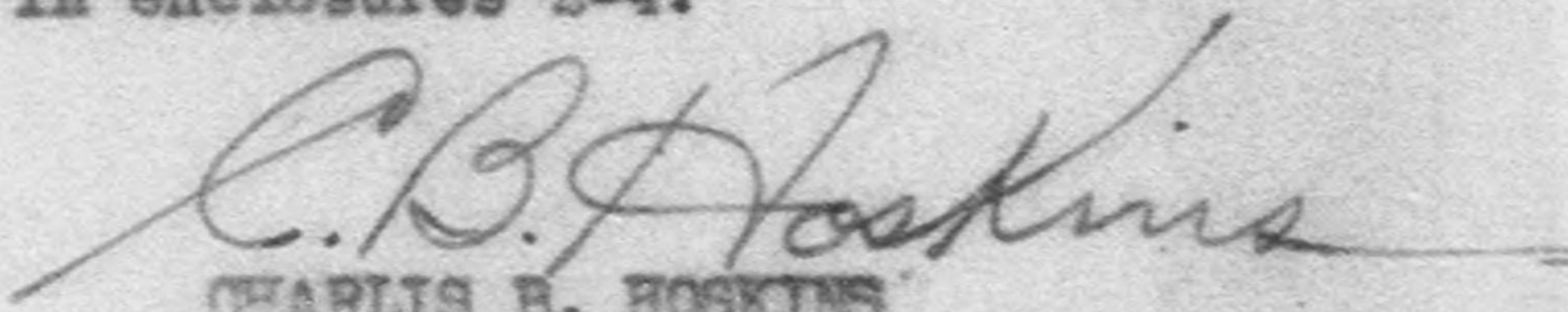
- (1) Improved methods of sampling incoming blister anodes should be investigated.

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- (2) The electrolytic refinery is unnecessarily dirty and should be cleaned up.
- (3) The entire wire bar casting process should be modified in accordance with previous NR recommendations, if the company hopes to produce wire bars satisfactory for export.

6. Detailed discussion is contained in enclosures 2-4.

4 Incls
1 Itinerary and Personnel
Interviewed
2-4 as indic par 6


CHARLES B. HOSKINS
Scientific Consultant
Mining and Geology Division

Copy furnished:
ESS/ISB
CAS
Kanto CA Region

Itinerary

		<u>April 1950</u>
Lv	Tokyo	15
Ar	Annaka-machi	15
Lv	Annaka-machi	18
Ar	Nikko	18
Lv	Nikko (By Auto)	18
Ar	Ashio	18
Lv	Ashio (By Auto)	21
Ar	Nikko	21
Lv	Nikko	21
Ar	Tokyo	21
		2004

Personnel Interviewed

1. Kanto CA Region personnel:

Messrs P. S. Kemake, and W. J. Jones, Economics Division.

2. Japanese personnel:

Annaka zinc plant

Messrs I. Matsui, general manager, and O. Murakami, chief metallurgist.

Ashio mill and copper smelter

Messrs I. Okana, manager, T. Katsuki, chief engineer, E. Muto, chief metallurgist, S. Kai, mill superintendent, R. Shimada, chief, Research, T. Horiuchi, chief, Analysis.

Nikko Copper Refinery

Messrs S. Nishimura, chief, Technical Division, M. Oyama, chief, Copper Refinery, H. Tanaka, chief, Research, T. Okumura, chief, Analytical Section.

End

Annaka Electrolytic Zinc Plant, Gunma Prefecture

A roaster section of two-10-hearth wedge roasters and a 50⁰B tower sulfuric acid plant are scheduled for construction. An addition to the zinc tank house and a 200 metric tons per month Betts electrolytic lead plant to handle crude bullion from the recently acquired Chigirishima smelting plant is under construction. A new assay laboratory has been built. These developments keep the small engineering staff well occupied, leaving little time for work on plant metallurgical problems. The zinc and copper sections were clean and orderly. The majority of previous NR recommendations have been adopted. The increase of electric power rates and the lowering of allocation power has caused considerable anxiety.

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Ashio Mill, Mine water Treatment Plant, and Copper Smelter, Tochigi Prefecture

Clay adhering to the mine-run ore at Ashio Mill is not eliminated prior to entering the heavy-density media separating cone. This causes density variation and poor separation. Management will investigate washing methods outlined by NR personnel. The ferrosilicon used as a medium is erratic in grade; management was urged to continue efforts to produce a pure ferrosilicon. The mine water treatment eliminates the objectionable matter but leaves a slurry containing 70 percent water and 4 percent copper (dry basis) to handle. Electrophoretic filtration and spray drying were suggested as possible solutions of the dewatering problem.

Little improvement was observed in physical appearance at the Ashio copper smelter. Intermediates and byproducts are still allowed to pile up; the plant is unreasonably dirty and poorly lighted. Investigation is under way to replace the blast furnace with two electric furnaces for smelting copper concentrates. If successful, this will give a concentrated source of sulfur dioxide for sulfuric acid manufacture. Many operating problems remain to be solved.

Nikko Copper Refinery, Tochihi Prefecture

The Nikko copper refinery is one unit of a large fabricating plant. The staff displayed little interest in improving refinery operations. Current efficiency is 82 percent at 18 amperes per square foot. Attention to details leading to higher operating efficiency is lacking. In contrast, the exceptionally well equipped physical metallurgy laboratories indicated stress on this phase of operations. This is understandable in view of the importance of fabrication at Nikko but the refinery deserves more attention.

Because wire bars recently shipped to the United States did not meet standards, they had to be recast in the United States at additional expense to Nikko refinery. Emphasis was placed on the necessity of attention to details if Japanese copper products are to compete in the world market.



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