

V 討議議事録、年次計画書

- (1) 昭和58年度年次計画書
- (2) 昭和57年度年次計画書
- (3) 昭和56年度年次計画書
- (4) 討議議事録（ R/D ）
- (5) 協力実施計画（ T S I ）

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(1) 昭和58年度年次計画書

ANNUAL WORK PLAN FROM APRIL 1983 TO DECEMBER 1983

THE TECHNICAL COOPERATION ON THE TECHNOLOGICAL DEVELOPMENT OF
MINERAL PROCESSING AND METALLURGY IN THE UNITED MEXICAN STATES

November 26th, 1982 in Mexico City

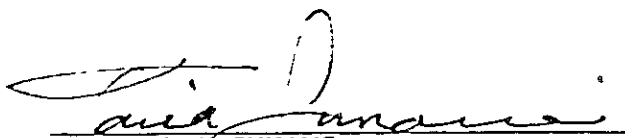
Japanese Technical Guidance Team
Japan International Cooperation Agency (JICA)

and

Comisión de Fomento Minero (CFM)
Secretaría de Patrimonio y Fomento Industrial

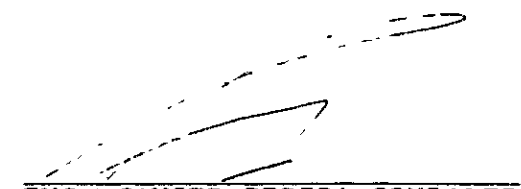
In accordance with I-2 of the Record of Discussions signed on December 5th, 1979 in Mexico City, the Japanese Technical Guidance Team sent by the Japan International Cooperation Agency (JICA), and the Comisión de Fomento Minero (CFM), mutually agreed upon the Annual Work Plan from April 1983 to December - 1983 as attached hereto, in order to promote Technical Cooperation on the Technological Development of Mineral Processing - and Metallurgy, in the United Mexican States .

November 26th, 1982 in Mexico City .



Mr. TAIRA SUNAMI

Leader
Japanese Technical Guidance Team
Japan International Cooperation
Agency
Japan



ING. JAVIER PERERA GONZALEZ
Technical Underdirector
Comisión de Fomento Minero
Secretaría de Patrimonio y
Fomento Industrial
The United Mexican States

1. ANNUAL WORK PLAN:

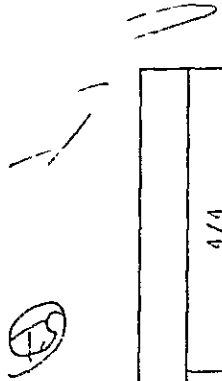
Technical Cooperation Program

| Scope of Technical Cooperation | 1982 | | 1983 | | 12/4 | |
|--|------|--|-------------------------|---------|------|--|
| | 4/4 | 1/4 | 2/4 | 3/4 | 4/4 | |
| 1. Mineral Processing of Complex Sulphide Ores . | | Application for SO ₂ Method For Another Sulphide Ore | | Complex | | |
| | | Test of Continuous Flotation Cell | | | | |
| | | Test of Tower Mill | Application to the Mill | | | |
| 2. Processing of Copper Ores - from Sta. Rosalia with Segregation Method . | | Segregation Tests Using Small Rotary Furnace For Obtaining Design Data for Pilot Plant . | | | | |
| | | 1) Confirmation of Optimum Conditions 2) Confirmation of Conditions for Flotation | | | | |
| | | Others : | | | | |
| | | a) Segregation Tests Using Furnace of Tube b) Study of Wet Process | | | | |

| Japanese Fiscal Year | 1983 | | | 12/4 |
|--------------------------------------|------|-----|-----|------|
| | 1/4 | 2/4 | 3/4 | |
| 3. Analytical Technology of Minerals | 4/4 | | | 4/4 |
| | | | | |
| | | | | |
| | | | | |

- 1) Pretreatment Technology of Sample for Fluorescent X-Ray Determination
- 2) Micro and Semimicro Determination by Spectrometric Method
- 3) Application of Atomic Absorption Method
- 4) Other Methods

NOTE : (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the Project .
 (2) This Scope of Technical Cooperation is subject to change within the scope of the provisions given in the "Record of Discussions".



(25)

2. ANNUAL WORK PLAN :
 Dispatch of Japanese Experts, Training of Mexican Counterpart Personnel in Japan and Provision of Machinery and Equipment .

| Item | Japanese Fiscal Year | | | | |
|---|----------------------|----------|----------------------------------|------|-----|
| | 1982 | 1983 | | 12/4 | |
| | 4/4 | 1/4 | 2/4 | 3/4 | 4/4 |
| 1. Dispatch of Japanese Experts | | | | | |
| 1) Chief Advisor Long-Term | | 1 Expert | | | |
| 2) Mineral Processing of Complex Sulphide Ores Long-Term | | 1 Expert | | | |
| 3) Processing of Copper Ores from Sta. Rosalia with Segregation Method Long-Term | | 1 Expert | | | |
| 4) Analytical Technology of Minerals Long-Term | | 1 Expert | | | |
| 2. Training of Mexican Counterpart Personnel in Japan : | | | | | |
| 1) Mineral Processing of Complex Sulphide Ores : | | | | | |
| 2) Processing of Copper Ores from Sta. Rosalia with Segregation Method : | | | 2 Counterparts - for 3 months | | |
| 3) Analytical Technology of Minerals : | | | | | |

②

| Japanese Fiscal Year | 1983 | | | | 12/4 |
|---|-------------|--|-----|-----|------|
| | 1982 4/4 | 1/4 | 2/4 | 3/4 | |
| 3. Provision of Machinery and Equipment . | | 1) Supplement parts and accessories for equipments . | | | |
| | | | | | 4/4 |

NOTE : (1) This Schedule is subject to conditions that necessary budget will be acquired for the implementation of the Project .
 (2) This Scope of Technical Cooperation is subject to change within the scope of the provision given in the "Record of Discussions".

(2) 昭和57年度年次計画書

ANNUAL WORK PLAN FROM APRIL 1982 TO MARCH 1983

THE TECHNICAL COOPERATION ON THE TECHNOLOGICAL DEVELOPMENT OF
MINERAL PROCESSING AND METALLURGY IN THE UNITED MEXICAN STATES

February 9TH., 1982 at Mexico City

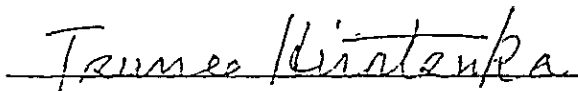
Japanese Technical Guidance Team
Japan International Cooperation Agency (JICA)

and

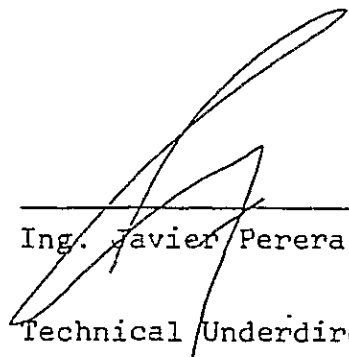
Comisión de Fomento Minero (CFM)
Secretaría del Patrimonio y Fomento Industrial

In accordance with I-2 of the Record of Discussions signed on December 5TH., 1979 at Mexico City, the Japanese Technical Guidance Team sent by the Japan International -- Cooperation Agency (JICA), and the Comisión de Fomento Mi- nero (CFM), mutually agreed upon the Annual Work Plan from April 1982 to March 1983 as attached hereto, in order to - promote Technical Cooperation on the Technological Develop- ment of Mineral Processing and Metallurgy, in the United - Mexican States.

February 9TH., 1982 at Mexico City.


Mr. Tsuneo Hiratsuka

Leader
Japanese Technical Guidance Team
Japan International Cooperation
Agency.
Japan


Ing. Javier Perera González
Technical Underdirector
Comisión de Fomento Minero
Secretaría del Patrimonio y
Fomento Industrial.
The United Mexican States

1. Annual Work Plan:

Technical Cooperation Program

T.R.

| Scope of Technical Cooperation | 1982 | | | | 1983 |
|--|--|---|--|---|------|
| | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 |
| <p>1. Mineral Processing of Complex Sulphide Ores. (Transfer of Basic Technology: Separation Test of Complex Sulphide Ores with Flotation Method.)</p> | Test for New Sample | Test of Continuous Flotation Cell | Test of Tower Mill | Application of SO ₂ Method for Another Complex Sulphide Ore. | |
| | <p>Segregation Tests: Research for Optimum Segregation for Each Ore, Especially Development of Segregation Process for the other Ores.</p> | Condition for New Applicable Ore | Segregation Tests Using Small Rotary Furnace: For Obtaining Design Data for Pilot Plant. 1) Confirmation of Optimum Conditions 2) Confirmation of Conditions for Flotation. | | |
| <p>2. Processing of Copper Ores from Sta. Rosalia with Segregation Method. (Transfer of Basic Technology: Processing Test of Copper Ores with Segregation Method.)</p> | Flotation Tests for Research for Optimum | Condition of Segregated Ore: Condition of Flotation | | | |
| | | | | | |

7.1d

| Scope of Technical Cooperation | 1981 | | | | 1982 | | | | 1983 |
|--------------------------------------|------|--|---|--|---|-----|-----|-----|------|
| | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 |
| 3. Analytical Technology of Minerals | | <p>Determination of High - Concentrate Mg, Ca, Sr. and Ba. in Minerals. - Comparison and Study of JIS Method and Mexican Method which used Tritration and Gravimetry. - Zn. Pb. etc.</p> | <p>Maintenance and Operation of X-ray Diffractometer and Fluorescence X-ray Spectrometer.</p> | <p>Quantitative Analysis by Fluorescence X-ray Spectrometer:</p> <ol style="list-style-type: none"> 1) Powder Dilution Method. 2) Glass Bead Method. 3) Chemical Preparation Method. 4) Other Methods Ti. Zr. Nb. etc. | <p>Micro and Semimicro -- Determination by Spectrophotometric Method. W. As. Ti. etc.</p> | | | | |

NOTE : (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the Project.
 (2) This Scope of Technical Cooperation is subject to change within the scope of the provisions given in the "Record of Discussions".

2. Annual Work Plan :

Dispatch of Japanese Experts, Training of Mexican Counterpart Personnel in Japan and Provision of Machinery and Equipment.

T.H.C.

| Item | 1981 | | 1982 | | 1983 |
|---|------|--|------|------------------------------|------|
| | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 |
| 1. Dispatch of Japanese Experts: 1) Chief Advisor. Long-Term | | | | | |
| 2) Mineral Processing of Complex Sulphide Ores: Long-Term Short-Term | | 1 Expert (General Advice on Technological Matters) | | | |
| 3) Processing of Copper Ores from Sta. Rosalia with Segregation Method: Long-Term | | 1 Expert (Investigation of Flowsheet with Cleaning Tests and Locked Cycle Tests, etc.) 1 Expert for 2 months (Lower Mill Installation) | | | |
| 4) Analytical Technology of Minerals: Long-Term Short-Term | | 1 Expert (Setting of Reaction Condition of Segregation Process, etc.) | | | |
| 2. Training of Mexican Counterpart Personnel in Japan: 1) Mineral Processing of Complex Sulphide Ores: 2) Processing of Copper Ores from Sta. Rosalia with Segregation Method: 3) Analytical Technology of Minerals: | | 1 Expert (Infrared Spectrophotometry and its Application, etc.) 1 Expert for 2 months (X-Ray Diffraction and Fluorescence Installation) | | 3 Counterparts for 2 months. | |

(3) 昭和56年度年次計画書

ANNUAL WORK PLAN FROM APRIL 1981 TO MARCH 1982

THE TECHNICAL COOPERATION ON THE TECHNOLOGICAL DEVELOPMENT OF
MINERAL PROCESSING AND METALLURGY IN THE UNITED MEXICAN STATES

December 5th, 1980 at Mexico City.

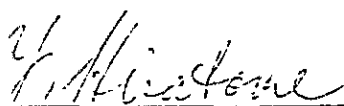
Japanese Consultation Team,
Japan International Cooperation Agency (JICA)

and


Comisión de Fomento Minero (CFM),
Secretaría del Patrimonio y Fomento Industrial

In accordance with I-2 of the Record of Discussions signed on December 5th, 1979 at Mexico City, the Japanese Consultation Team - sent by the Japan International Cooperation Agency (JICA), and the Comisión de Fomento Minero (CFM), mutually agreed upon the Annual - Work Plan from April 1981 to March 1982 as attached hereto, in or-- der to promote Technical Cooperation on the Technological Develop-- ment of Mineral Processing and Metallurgy, in the United Mexican -- States.

December 5th, 1980 at Mexico City.



Mr. Yoshio Hisatome



Ing. Víctor E. Villa Jiménez

Leader
Japanese Consultation Team
Japan International Cooperation
Agency.
Japan

Technical Assistant Manager
Comisión de Fomento Minero
The United Mexican States

1. Annual Work Plan
 Technical Cooperation Program.

| | 1980 | | 1981 | | 1982 |
|--|--|---|--|-----|------|
| | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 |
| Scope of Technical Cooperation | | | | | |
| 1. Mineral Processing of Complex Sulphide Ores. (Transfer of Basic Technology: Separation Test of Complex Sulphide Ores with Flotation Method.) | Investigation of Flowsheet with Cleaning Tests and Locked Cycle Tests. (1) Quality of Each Concentrate (2) Material Balance (3) Economical Examination. | Application of Flowsheet to other Complex Sulphide Ores which are similar to Ores from Japan. | Investigation of Fine Grinding (Met) (1) Establishment and Test Operations of Tower Mill. (2) Application of Tower Mill to Flotation of Mineral Processing of Complex Sulphide Ores. | | |
| 2. Processing of Copper Ores from Sta. Rosalia with Segregation Method. (Transfer of Basic Technology: Processing Test of Copper Ores with Segregation Method.) | Setting of Reaction Condition of Segregation Process. (1) Temperature (2) Time (3) Atmosphere (4) Particle Size (5) Amount of Chlorides (6) Size of Carbon and its Form. | Examination Tests of Copper Metal. (1) Condition of pH (2) Flotation Reagent (3) Particle Size (4) Quartz | Smelting, Test of Copper Concentrate. (1) Grade of Copper (2) Extraction of Copper | | |

Y.P. L.H.

| | | | | |
|--|--|---|---|---|
| <p>3. Analytical Technology of Minerals.</p> | <p>Basic Study of Infrared Spectrophotometry and Theory of Identification.</p> | <p>Typical Analysis of Organic and Inorganic Samples with Infrared Spectrophotometry.</p> | <p>Applied Technology of Infrared Spectrophotometry. (1) Identification of Mineral and Inorganic Substance by means of KBr Tablet Method and Powder Reflective Method. (2) Examination of Metallic Surface, Powder Surface and its Chemical and Physical Treatment.</p> | <p>Other Instrumental Analysis. (1) Determination of S in Mineral and Metal by means of High Frequency Induction Furnace. (2) Application of Differential Thermal Gravimetric Analysis.</p> |
|--|--|---|---|---|

NOTE: (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the Project.

2. Annual Work Plan

Dispatch of Japanese Experts, Training of Mexican Counterpart Personnel in Japan and Provision of Machinery and Equipment.

| Japanese Fiscal Year ITEM | 1980 | | | 1981 | | | 1982 |
|---|---|-----|-----|------------------------------|-----|-----|------|
| | 4/4 | 1/4 | 2/4 | 3/4 | 4/4 | 1/4 | |
| 1. Dispatch of Japanese Experts (1) Chief Advisor Long-Term | 1 Expert for 2 Years (General Advice on Technological Matters) | | | | | | |
| (2) Mineral Processing of Complex Sulphide Ores. Long-Term Short-Term | 1 Expert for 2 Years (Investigation of Flowsheet with Cleaning Tests and Locked Cycle Tests, etc) | | | | | | |
| (3) Processing of Copper Ores from Sta. Rosalía with Segregation Method. Long-Term Short-Term | 1 Expert for 2 Months | | | | | | |
| (4) Analytical Technology of Minerals Long-Term Short-Term | 1 Expert for 3 Years and 3 Months (Setting of Reaction Condition of Segregation Process, etc) | | | | | | |
| 2. Training of Mexican Counterpart Personnel in Japan. (1) Mineral Processing of Complex Sulphide Ores. (2) Processing of Copper Ores from Sta. Rosalía with Segregation Method. (3) Analytical Technology of Minerals. Long-Term Short-Term | 1 Expert for 2 Months | | | | | | |
| | | | | 4 Counterparts for 2 Months. | | | |

(4) 討議議事録 (R/D)

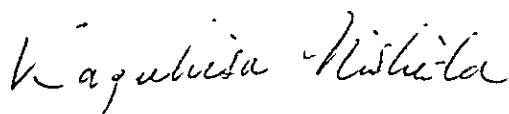
THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE
IMPLEMENTATION SURVEY TEAM AND THE
AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE UNITED MEXICAN STATES
ON THE JAPANESE TECHNICAL COOPERATION
FOR THE PROJECT ON TECHNOLOGICAL DEVELOPMENT
OF MINERAL PROCESSING AND METALLURGY

The Japanese Implementation Survey Team (hereinafter referred to as " the Team ") organized by the Japan International Cooperation Agency (hereinafter referred to as " JICA ") and headed by Mr. Kazuhisa Nishida, General Manager in charge of Mineral Processing, Mining Division, Dowa Mining Co, Ltd., visited the United Mexican States from November 24th to December 8th for the purpose of working out the details of the technical cooperation program concerning the Technological Development Project of Mineral Processing and Metallurgy in the United Mexican States.

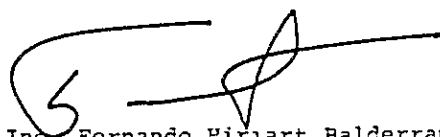
During its stay in the United Mexican States, the Team exchanged views and had a series of discussions with the Mexican authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Mexican authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Mexico City, December 5th. 1979.



Mr. Kazuhisa Nishida
Leader
Japanese Implementation Survey Team
Japan International Cooperation Agency
Japan.



Ing. Fernando Miriart Balderrama
Undersecretary of Mines and Energy
Sria. Patrimonio y Fomento
Industrial
United Mexican States

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the United Mexican States will cooperate with each other in implementing the Project on Mineral Processing of Complex Sulfide Ores and Processing of Copper Ores from Santa Rosalva with Segregation Method (hereinafter referred to as " the Project ") for the purpose of contributing to the Technological Development of Mineral Processing and Metallurgy in the United Mexican States.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese Experts as listed in Annex II through the normal procedures under the Technical Cooperation Scheme of the Government of Japan.
2. The Japanese Experts referred to in 1 above and their families will be granted in the United Mexican States the privileges, exemptions and benefits as listed in Annex III and will be granted privileges, exemptions and benefits no less favourable than those granted to experts of third countries or international organizations performing similar missions in the United Mexican States.

III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex IV, through the normal procedures under the Technical Cooperation Scheme of the Government of Japan.
2. The articles referred to in 1 above will become the property of the Government of the United Mexican States upon being delivered c.i.f. to the Mexican authorities concerned at the ports and / or airports of disembarkation, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese Experts referred to in Annex II.

IV. TRAINING OF MEXICAN PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Mexican Personnel connected with the Project for technical training in Japan through the normal procedures under the Technical Cooperation Scheme of the Government of Japan.
2. The Government of the United Mexican States will take necessary measures to ensure that the knowledge and experience acquired by the Mexican Personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE UNITED MEXICAN STATES

1. In accordance with the laws and regulations in force in the United Mexican States, the Government of the United Mexican States will take necessary measures to provide at its own expense :
 - (1) Service of the Mexican counterpart personnel and administrative personnel as listed in Annex V;
 - (2) Land, buildings and facilities as listed in Annex VI;
 - (3) Supply or replacement of machinery, equipment, instrument, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than those provided through JICA under III above;
 - (4) Transportation facilities and travel allowance for the Japanese Experts for the official travel within the United Mexican States;
 - (5) Suitably furnished accommodations for the Japanese experts and their families.

2. In accordance with the laws and regulations in force in the United Mexican States, the Government of the United Mexican States will take necessary measures to meet :
 - (1) Expenses necessary for the transportation within the United Mexican States of the articles referred to in III above as well as for the installation, operation and maintenance thereof;
 - (2) Customs duties, internal taxes and any other charges, imposed in the United Mexican States on the articles referred to in III above;
 - (3) All running expenses necessary for the implementation of the Project.

VI. ADMINISTRATION OF THE PROJECT

1. The Director General of Comisión de Fomento Minero (hereinafter referred to as " CFM ") will bear overall responsibility for the implementation of the Project and the Director of Laboratorio de Tecamachalco will be responsible for the administrative and managerial matters of the implementation of the Project.
2. The chief Adviser and the other Experts will give instruction and advice on the technical matters concerning the implementation of the Project.
3. For the effective and successful implementation of the Project, a Joint Committee (hereinafter referred to as " the Committee ") will be established with the members as listed in Annex VII. The Committee will have the functions to prepare the Annual Work Plan and to consult any other related matters arising from the implementation of the Project, and will be held when necessity arises.

VII. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the United Mexican States undertakes to bear claims, if any arises, against the Japanese Experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the United Mexican States except for those arising from the willful misconduct or gross negligence of the Japanese Experts.

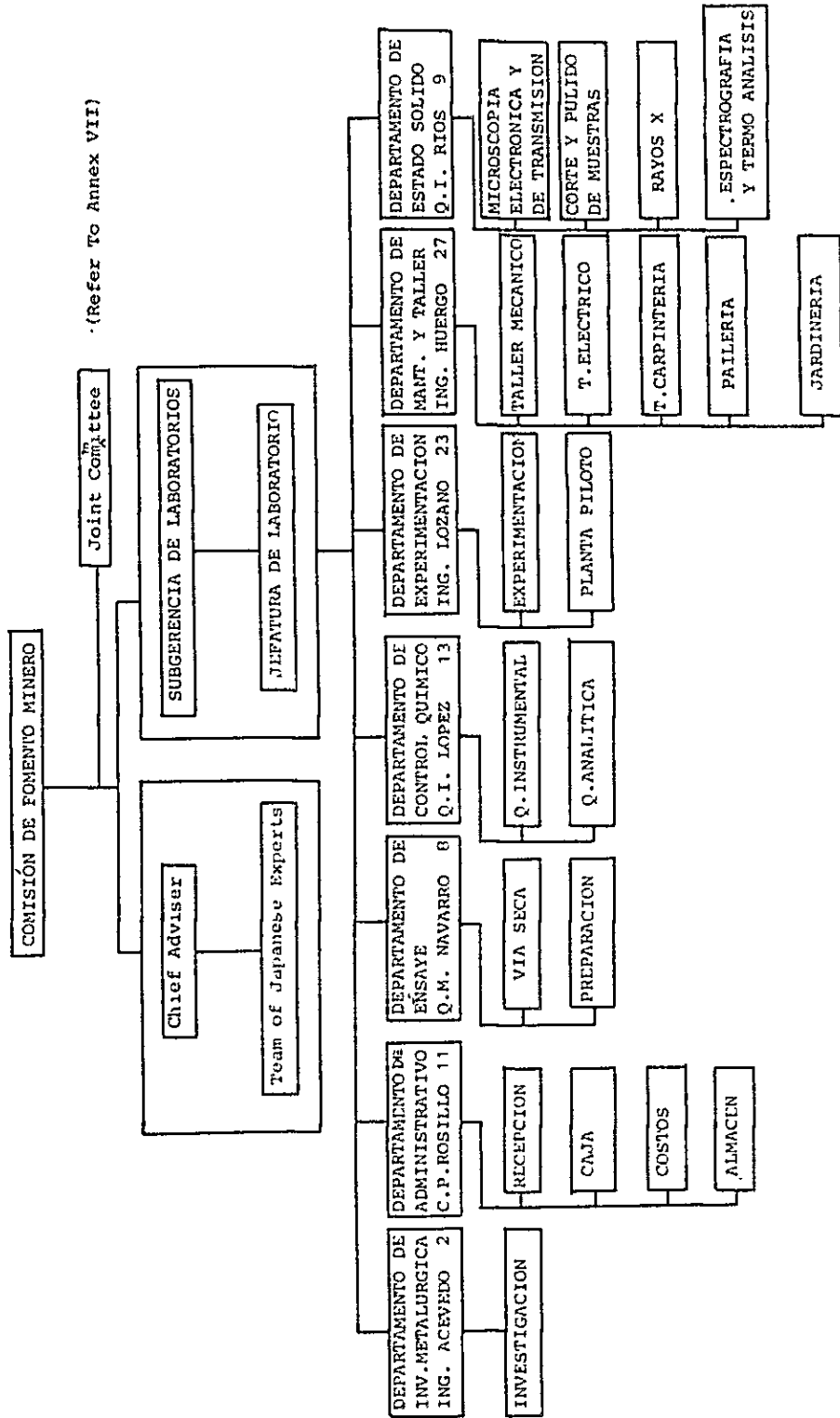
VIII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be 4 years from December 5th, 1979.

(2) Organization for Implementation



Experts in the fields of ;

1. Mineral Processing of Complex Sulfide Ores
 - (1) Mineral Processing,
 - (2) Metallurgy,
 - (3) Analytical Technology.

2. Processing of Copper Ores from Santa Rosalía with Segregation Method
 - (1) Mineral Processing,
 - (2) Metallurgy,
 - (3) Analytical Technology.

Foot Note:

- (1) One of the above-mentioned Experts will be appointed to the Chief Adviser as a representative of the Experts.
- (2) Short-term Experts may be dispatched, if necessity arises, for the installation of the machinery and equipment provided by the Government of Japan and for other objectives.

1. Exemptions from the income tax and charges of any kind imposed on or in connection with the living allowances remitted from abroad.
2. Exemptions from import and export duties and any other charges in respect of personal and household effects, including one motor vehicle per family, which may be brought into the United Mexican States from abroad.
3. Free medical and dental services and facilities to the Japanese Experts and their families.
4. Issue of identification cards to the Japanese Experts, to secure the cooperation of the authorities concerned of the United Mexican States, necessary for the performance of the duties of the Japanese Experts and their families.

1. Atomic Absorption Spectrophotometer.
2. Electroplating Apparatus.
3. Power Source.
4. Infrared Spectrophotometer.
5. Sample Grinder.
6. X-ray Fluorescence Spectrometer.
7. Solvent Extraction Apparatus.
8. Differential Thermal Balance.
9. Combustion Furnace.
10. Testing Machine.
11. Sulfurous Acid Gas Corrosion Testing Apparatus.
12. Thickness Tester.
13. Vacuum Evaporation Apparatus.
14. X-ray Energy Spectrometer (EDX).
15. Electronic Computer & Teletypewriter.
16. Roller for Lead.

1. Technical Staff;

- (1) Engineers (Corresponding to the fields of the Experts referred to in Annex II),
- (2) Technicians.

2. Administrative Staff ;

- (1) Administration officers,
- (2) Clerical Staff,
- (3) Other necessary personnel.

1. Space of land and building necessary for installation and operation of the machinery, equipment and other materials.
2. Office room(s) for the Experts.
3. Laboratory.
4. Conference Room(s).
5. Library.
6. Others.

1. Chairman : Director General of CFM,
Secretaría de Patrimonio y Fomento Industrial.

2. Member :
 - (1) Japanese side;
 - (i) Chief Adviser,
 - (ii) Representative of JICA,
 - (iii) The other Experts and personnel concerned to be dispatched by JICA, if necessary.

 - (2) Mexican side;
 - (i) Director of Laboratorio de Tecamachalco, CFM,
 - (ii) The other personnel concerned.

Foot Note: Staff of the Embassy of Japan will be able to attend the Joint Committee meeting as observer.

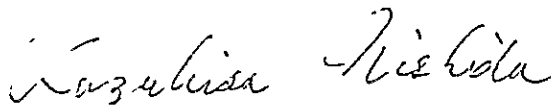
(5) 協力実施計画 (T S I)

TENTATIVE SCHEDULE OF IMPLEMENTATION AND ANNUAL
WORK PLAN OF THE TECHNICAL COOPERATION PROJECT
FOR TECHNOLOGICAL DEVELOPMENT OF MINERAL PROCESSING
AND METALLURGY IN THE UNITED MEXICAN STATES

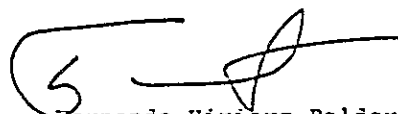
The Japanese Implementation Survey Team and Comisión de Fomento Minero, Secretaría de Patrimonio y Fomento Industrial, have jointly formulated the Tentative Schedule of Implementation of the Project as Annexed hereto.

This has been formulated in connection with I-2 of the Attached Document of the Record of Discussions signed between the Japanese Implementation Survey Team and Comisión de Fomento Minero, Secretaría de Patrimonio y Fomento Industrial, for the Technical Cooperation Project for Technological Development of Mineral Processing and Metallurgy on the conditions that necessary budget will be allocated for the implementation of the Project by both sides, and that the schedule is subject to change within the framework of Record of Discussions when necessity arises in the course of implementation of the Project.

México City, December 5 th, 1979.



Mr. Kazuhisa Nishida
Leader
Japanese Implementation Survey Team
Japan International Cooperation Agency
Japan



Ing. Fernando Hiriart Balderrama
Undersecretary of Mines and Energy
Secretaría de Patrimonio y Fomento
Industrial
United Mexican States

I. TENTATIVE SCHEDULE OF IMPLEMENTATION

Tentative Schedule of Implementation is given in Annex I.

II. ANNUAL WORK PLAN

Annual Work Plan is given in Annex II.
Dispatch of the Experts, Training for Mexican Personnel and Provision of Machinery, Equipment and Other Materials are as follows:

1. The appropriate number of Experts will be assigned to the Project in consideration of the availability of Experts in Japan for the period of December 1979 to March 1981.
2. The appropriate number of Mexican personnel will be received for technical training in Japan for the period of December 1979 to March 1981.
3. The provision of machinery, equipment and other materials (hereinafter referred to as " the Machinery ") will be considered, if necessity arises, within the limit of the budget available.

III. PREPARATION OF EACH SIDE

1. Japanese Side:

- (1) Budgeting for Japanese technical cooperation,
- (2) Recruitment of the Experts,
- (3) Training program in Japan for Mexican personnel,
- (4) Specifications of Machinery and Equipment,

2. Mexican Side:

- (1) Staffing of the Project,
- (2) Preparation of Application Forms, A-1,A-2,A-3 and A-4,
- (3) Cost estimates and Budgeting of local portion of the Project,
- (4) Office rooms for the Experts,
- (5) Specifications and Layout plan for the Machinery and Equipment to be installed.

IV. LIMIT OF JAPAN'S TECHNOLOGICAL TRANSFER

Japan's technological transfer on a Government to Government basis is limited to be extent of publicly generalized technology, which therefore rules out technology exclusively owned by the private sector and individuals, in such forms as patents, technological know-how and so on.

TENTATIVE SCHEDULE OF IMPLEMENTATION

(1) Technical Cooperation Program of the Project

| PHASE Japanese Fiscal Year Item | PHASE I (Basic Establishment) | | PHASE II (Development) | PHASE III Self-Reliance |
|---|----------------------------------|---|---|---|
| | 1980 | 1981 | | |
| I. Mineral processing of Complex Sulfide Ores. | Data Collection and its Analysis | 1. Transfer of Basic Technology Separation Test of Complex Sulfide Ores with Flotation Method (1) Mineral and Chemical Analysis of Ores. (2) Crushing and Grinding of Ores (3) Setting of Separation Condition of Ores (Separation of Cu, Pb, Zn & Fe Sulfides and Recovery of Au, Ag) a. Conditioning of pH b. Flotation Reagent c. Particle Size d. Others | 2. Transfer of Applied Technology (1) Operation of Pilot Plant a. Development of Process b. Examination of Feasibility. (2) Improvement of Pilot Plant. | 3. Application to the Mill (1) Establishment of Pilot Plant at the Site (2) Operation of Pilot Plant and training of Technicians and Engineers (3) Preparation of Operation Manual (4) Preparation for the Construction of Pilot Plant. a. Location of Plant b. Specification of Plant c. Utilities (Power, Water Supplies, etc.) d. Others (Analysis, Materials, etc.) |
| | | 1982 | 1983 | 1984 |
| II. Processing of Copper Ores from Santa Rosalia with Segregation Method. | | 1. Transfer of Basic Technology Processing Test of Copper Ores with Segregation Method (1) Mineral and Chemical Analysis of Ores. (2) Crushing and Grinding of Ores | 2. Transfer of Applied Technology (1) Operation of Pilot Plant a. Development of Process b. Examination of Feasibility. | 3. Application to the Smelter (1) Establishment of Pilot Plant at the Site (2) Operation of Pilot Plant and training of Technicians and Engineers. |
| | | | | Self-Operation of the Process by Mexican Side |
| | | | | Self-Operation of the Process by Mexican Side |

| Japanese Fiscal Year Item | 1980 | 1981 | 1982 | 1983 | 1984 |
|--|---|------|--------------------------------|---|------|
| | (3) Temperature Distribution in Reaction Furnace (4) Settling of Reaction Condition of Segregation Process a. Temperature b. Time c. Atmosphere d. Particle Size e. Amount of Chlorides f. Size of Carbon and its amount (5) Separation Test of Copper Metal (6) Smelting Test of Copper Concentrate | | (2) Improvement of Pilot Plant | (3) Preparation of Operation Manual (4) Preparation for the Construction of Pilot Plant a. Location b. Specification of Plant c. Utilities (Power, Water Supplies, etc.) d. Others (Analysis, Materials, etc.) (5) Improvement of Process (6) Examination of Feasibility | |
| III. Analytical Technology of Minerals | 1. X-ray Fluorescence Analysis (1) Formation of calibration Curve with Standard Sample (Cu, Pb, Zn, Fe, etc.) (2) Analysis of Ores (Cu, Pb, Zn, Fe, etc.) 2. Application of Infrared Spectrometer Method to Mineral Analysis 3. Application of Atomic Absorption Method to Mineral Analysis (1) Determination of Au and Ag in Ores (2) Atomic Absorption Analysis with Carbon Furnace (3) Analysis with High Temperature Burner 4. Other Instrumental Analysis (1) Determination of Hg with Atomic Absorption Method (2) Determination of S with High Frequency Furnace (3) Applied Technology of X-ray Fluorescence Analysis a. Analysis of High Grade Sn Ores b. Glass Bead Method | | | | |
| Self-Operation of the Project by Mexican Side | | | | | |
| Foot Note: (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the project. (2) This scope of Technical Cooperation is subject to change within the scope of the provisions given in the "Record of Discussions". | | | | | |

(2) Tentative Schedule of Dispatch of the Experts, Training of Mexican Counterparts and Provision of Equipment

| PHASE Japanese Fiscal Year Item | PHASE I (Basic Establishment) | | PHASE II (Development) | PHASE III (Self-Reliance) |
|--|--|--|---|---|
| | 1980 | 1981 | | |
| 1. Dispatch of Expert (1) Setting of Separation Condition of Ores Long-Term Short-Term (2) Processing of Copper Ores from Santa Rosalia with Segregation Method Long-Term Short-Term (3) Analytical Technology of Minerals Long-Term Short-Term | 1 Expert for 2 Years (Setting of Separation Condition of Ores) | 1 Expert for 2 Years (Setting of Separation Condition of Ores) | 1 Expert for 2 Years | Self-Operation of the Project by Mexican Side |
| | 2 Experts for 2 Years (Setting of Reaction Condition of Segregation Process Smelting Test of Copper Concentrate) | 2 Experts for 2 Years (Setting of Reaction Condition of Segregation Process Smelting Test of Copper Concentrate) | 2 Experts for 2 Years | |
| | 1 Expert for 1.5 Years (Application of X-ray Fluorescence Analysis Infrared Spectrometer Method) | 1 Expert for 1.5 Years (Application of X-ray Fluorescence Analysis Infrared Spectrometer Method) | 1 Expert for 1 Year | |
| 2. Training of Counterpart (1) Setting of Separation Condition of Ores (2) Processing of Copper Ores from Santa Rosalia with Segregation Method (3) Analytical Technology of Minerals | 2 Experts for 2 Months | 2 Experts for 2 Months | Application of Atomic Absorption Method 2 Experts for 2 Months | Other Instrumental Analysis 2 Experts for 2 Months |
| | 1 Expert for 2 Months (X-ray Fluorescence Analysis) | 2 Experts for 2 Months (Infrared Spectrometer Method Atomic Absorption Method) | 1 Expert for 2 Months (High Frequency Furnace) | |
| | | | | |
| Collection & Analysis of Data | | | | |

| PHASE Japanese Fiscal Year Item | PHASE I Basic Establishment | | PHASE II Development | | PHASE III Self Reliance |
|---------------------------------------|--|------|--|------|--|
| | 1980 | 1981 | 1982 | 1983 | 1984 |
| 3. Provision of Equipment | Atomic Absorption Spectrophotometer Electroplating Apparatus Power Source Infrared Spectrophotometer Sample Grinder X-ray Fluorescence Spectrometer Solvent Extraction Apparatus | | X-ray Energy Spectrometer (EDM) Electronic Computer & Teletypewriter Roller for Lead | | Differential Thermal Balance Combustion Furnace Testing Machine Sulfurous Acid Gas Corrosion Testing Apparatus Thickness Tester Vacuum Evaporation Apparatus |

Foot Note:

- (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the Project.
- (2) This Scope of Technical Cooperation is subject to change within the scope of the provisions given in the " Record of Discussions " .

Annex II_ Annual Work Plan from December 1979 to March 1981

| | 1979 (FY) | | | 1980 (FY) | | | 1981 (FY) |
|---|-----------|-----|-----|--|-----|-----|-----------|
| | 4/4 | 2/4 | 3/4 | 1/4 | 2/4 | 3/4 | 4/4 |
| Scope of Technical Cooperation | | | | | | | 1/4 |
| 1. Mineral Processing of Complex Sulfide Ores | | | | Separation Test of Complex Sulfide Ores with Floatation Method (Mineralogical and Chemical Analysis, Crushing and Grinding, Setting of Separation Condition of Ores) | | | |
| 2. Processing of Copper Ores from Santa Rosalia with Segregation Method | | | | (Assignment of 1 Expert and Receiving of 2 Mexican Personnel in Japan) | | | |
| 3. Analytical Technology of Minerals | | | | Processing Test of Copper Ores with Segregation Method Mineralogical and Chemical Analysis, Crushing and Grinding of Ores, Temperature Distribution in Reaction Furnace, Setting of Reaction Condition of Segregation Process, Separation Test of Copper Metal, Smelting Test of Copper Concentrate | | | |
| | | | | (Assignment of 2 Experts) | | | |
| | | | | X-ray Fluorescence Analysis Application of Infrared Spectrometer Method and Atomic Absorption Method to Minerals | | | |
| | | | | (Assignment of 1 Expert and Receiving of 1 Mexican Personnel in Japan) | | | |

Foot Note (1) This schedule is subject to conditions that necessary budget will be acquired for the implementation of the project.

(2) This Scope of Technical Cooperation is subject to change within the scope of the provisions given in the "Record of Discussions".

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