

MARINE FOOD PROCESSING AND TECHNOLOGY (水産食品加工)

1. PERIOD

January 18, 1988 to June 17, 1988 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Japanese eating habits, Food supply in Japan, Food self-supply through technical advancement, Food packaging and storage, Food distribution and its problems, Law concerned with food, Agricultural products, Livestock products, Marine products, etc.
 - In-plant training (Meat products, Frozen food, Marine products operation and application of analytical instruments, Analysis of food)
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Hyogo International Center, JICA
- 2) Public Research Institutions
- 3) Food Processing Factories (Food Manufacturing Plants)
- 4) Yaizu College of Fisheries

6. REMARKS

MINING AND MINERALS

GROUNDWATER RESOURCES DEVELOPMENT (地下水資源開発)

1. PERIOD

August 3, 1987 to December 11, 1987 (4.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University or college graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

I. INTRODUCTION (two weeks)

- 1) General orientation by JICA
- 2) Country report presentation by participants

3. Utilization of Groundwater (one week)

- 1) Water quality
- 2) Microorganism
- 3) Others

II. LECTURE ON BASIC TOPICS (one week)

- 1) Geology of Japan
- 2) *Hydrogeology*
- 3) Geochemistry of groundwater
- 4) Geophysics related to groundwater

4. Groundwater Management (two weeks)

- 1) Water balance
- 2) Water management
- 3) Groundwater simulation

III. LECTURES, OBSERVATION AND PRACTICE

1. Groundwater Exploration (three weeks)

- 1) Groundwater survey
- 2) Photogeology
- 3) Geophysical exploration

IV. SPECIAL TOPICS (one week)

V. STUDY TOUR (three weeks)

2. Water Well Engineering and Evaluation (three weeks)

- 1) Drilling technique
- 2) Water well logging
- 3) Water well design
- 4) Aquifer test
- 5) Pumps

5. FACILITIES AND INSTITUTIONS

- 1) Geological Survey of Japan, Ministry of International Trade and Industry
- 2) Tsukuba International Centre, JICA

6. REMARKS

Well drilling practice is not included in the training programme.

OFFSHORE PROSPECTING (沿海鉱物資源探査)

1. PERIOD

May 11, 1987 to December 14, 1987 (7.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Geophysicists, geologists or engineers presently engaged in geoscience
- 3) Occupational experience of more than 3 years
- 4) Not more than forty (40) years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Geology (marine geology, petroleum geology, mineral deposits, etc.)
 - Geophysics (Seismic, gravitational, magnetic, electric and logging methods, etc.)
 - Applied mathematics, computer use
 - Laboratory and field work
 - Petroleum exploration
 - Remote sensing, etc.
- 2) Observation tours
 - To related facilities

5. FACILITIES AND INSTITUTIONS

- 1) Geological Survey of Japan, Ministry of International Trade and Industry
- 2) Tsukuba International Centre, JICA

6. REMARKS

MINING ENGINEERING (鉱山)

1. PERIOD

August 13, 1987 to November 4, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

- 1) University graduates or the equivalent with basic knowledge of mineral mining
- 2) Qualified in their respective fields with more than three (3) years of practical experience
- 3) Under 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
— Technology, policy and administration of mining industry in Japan
- 2) Observation tours
Visits to:
 - * Mines and Smelters
 - * A geothermal Power Plant
 - * Manufacturers of Related Equipments
 - * National Research Institute for Pollution and Resources
 - * Geological Survey of Japan

5. FACILITIES AND INSTITUTIONS

- 1) Japan Mining Industry Association (JMIA)
- 2) Institute for International Mineral Resources Development (IIMRD)

6. REMARKS

MINE SAFETY (鉱山保安)

1. PERIOD

February 29, 1988 to May 28, 1988 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent who have basic knowledge of mine safety with occupational experience of more than 3 years
- 2) Under 35 years of age in principle
- 3) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
Outline of Mining in Japan; Administration and Mine Safety Law; Approval Test Methods of Mine Appliances; Rock Mechanics, Ventilation; Gas, Coal and Dust Explosion; Mine Fire; Gas Detections; Explosion Proof; Dust Measurement; Explosives and Blasting
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) National Research Institute for Pollution and Resources
- 2) Tsukuba International Centre, JICA

6. REMARKS

MINERAL PROCESSING AND METALLURGY (選鉱精錬)

1. PERIOD

July 23, 1987 to August 14, 1988 (13 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) Engineers or researchers who have graduated from universities, majoring in mining and metallurgy programmes or similar subjects or those who have an equivalent academic background, with more than three years of occupational experience in the related field.
- 2) Between twenty-five (25) and thirty-five (35) years of age.
- 3) Presently engaged in the research work at universities, vocational institutes, research and development divisions in industries.
- 4) A sufficient command of spoken and written English.

4. DESCRIPTION OF TRAINING

I) Subjects.

- (1) Applied Mineralogy
Physical Chemistry of Minerals, Mineral Engineering, Resource and Environment Management.
- (2) Mineral Processing
Crushing and Grinding of Ore, Particulate Technology, Physical Chemistry of Flotation
- (3) Ferrous Extractive Metallurgy
Pretreatment of Ore, Ironmaking, Steelmaking, Solidification
- (4) Non-ferrous Extractive Metallurgy
Pyrometallurgy, Hydrometallurgy, Electrometallurgy, Environmental Chemistry
- (5) Process Analysis and Simulation of Metallurgical Process
Transport Phenomena, Process Simulation, Optimum Design of Processes
- (6) Materials Science for Metallurgist
Introduction to Materials Science, Ceramics and Metal Processing.
- (7) Selected Topics in Mineral Processing and Metallurgy
Energy Resources, Data Bank System, System Engineering, Seminar.

II) Methodology

- 1) Group Study with Lectures
 - a) Physical Chemistry of Minerals and Mineral Processing*
 - b) Fundamentals in Metallurgical Thermodynamics*
 - c) Fundamentals in Metallurgical Kinetics*
 - d) Applied Mineralogy and Mineral Processing
 - e) Ferrous Extractive Metallurgy
 - f) Non-Ferrous Extractive Metallurgy
 - g) Transport Phenomena and Process Analysis
 - h) Japanese Language and Culture*
 - i) Advanced course in Mineral Processing and Metallurgy (optional programme)
- 2) Group Study with Lectures and Practice

Instrumental Analysis (Principle and Experiments)	
X-ray Diffraction*	
X-ray Fluorescent Analysis*	
Atomic Absorption Spectroscopy*	
Electron Probe Microanalysis*	
Calorimetry (DSC, DTA)	(on demand)
Materials Testing	(on demand)
C Computer Training	(on demand)
Chemical Analysis	(on demand)
Laboratory Automation	(on demand)
- 3) Independent Study

Participants are expected to have more professional experiences in respective research programmes under supervision of the professors of SENKEN.

*: All participants may be suggested to have the credit of this subject.
- 4) Observation tours

6. FACILITIES AND INSTITUTIONS

Research Institute of Mineral Dressing and Metallurgy (SENKEN), Tohoku University

6. REMARKS

Japanese language lesson is also offered in this course.

INDUSTRY

SMALLER ENTERPRISE DEVELOPMENT (SEMINAR) (中小工業開発セミナー)

1. PERIOD

June 25, 1987 to August 8, 1987 (1.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Senior administrative officials in development works for smaller enterprises
- 3) Occupational experience of more than 7 years
- 4) Between 30 and 55 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Economic development and smaller enterprise
 - Smaller enterprise development measures in Japan
 - Position of smaller enterprises in the developing countries and the government measures taken for their development
 - Entrepreneurship development & characteristics of Japanese corporate management
 - Management consultation & business diagnosis for smaller industries
 - International & domestic trade of smaller enterprises and their marketing
 - Transfer of technology
 - Subcontracting system
 - Technology and human resources development
 - Local traditional industries (localized industries)
 - Smaller enterprises and economic development in developing countries
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Chu-San-Ren (Central Japan Industries Association)

6. REMARKS

MEASURES FOR SMALLER INDUSTRY (中小企業対策)

1. PERIOD

January 7, 1988 to March 28, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 5 years
- 4) Under 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and discussions
- Japanese measures pertaining to promotion of small business, especially particulars of development of smaller businesses and practices in financing, grouping, structural improvement and managerial/technical guidance
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

Osaka International Training Centre, JICA

6. REMARKS

**CONSULTANCY SERVICE FOR THE PROMOTION OF
SMALL INDUSTRIES (中小企業振興指導者訓練)**

1. PERIOD

April 9, 1987 to September 28, 1987 (6.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Thirteen (13)

3. QUALIFICATIONS

- 1) Be such personnel as assigned to business diagnostic services, management consultancy, and extension services at the organization engaged in the assistance for development and promotion of small scale industries
- 2) University graduate or those who have equivalent academic background and/or professional experience
- 3) Have at least three years of experiences
- 4) Between 30 and 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) System & measures for small industries promotion in Japan
- 2) Basic understanding of business management
- 3) Techniques & methods of business diagnosis
- 4) Program implementation & training
- 5) Observation tours
- 2) Central Japan Industries Association (CHU-SAN-REN)

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) CHU-SAN-REN (Central Japan Industries Association)

6. REMARKS

INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL (工業標準化)

1. PERIOD

June 25, 1987 to September 6, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Sixteen (16)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Presently engaged in standardization or quality control work
- 3) Occupational experience of more than 3 years
- 4) Under 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures

- Industrial standardization
- Outline of industrial standardization
 - Present aspect of industrial standardization
 - Company standardization

- Quality control
- Outline of quality control
 - Improvements and Advancements in Quality Control
 - Statistical methods
 - Q.C. circle activities

2) Technical visits

3) Observation tour

5. FACILITIES AND INSTITUTIONS

- 1) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- 2) Japanese Standards Association (JSA)

6. REMARKS

INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL (SENIOR SEMINAR)

(工業標準化・品質管理シニアセミナー)

1. PERIOD

November 2, 1987 to November 27, 1987 (1 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

- 1) Senior-class officials (directors of departments) in charge of decision-making for the administration of industrial standardization
- 2) University graduates or equivalent
- 3) More than 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Industrial Standardization and Quality Control
 - Certification and Inspection System
 - Development of Japanese Industries
 - Industrial Standardization Activities based on Industrial Policy
 - International Standardization and National Standardization
 - National Standardization and Company Standardization
 - Prospective Standardization Tactics
 - Introduction and Promotion of Total Quality Control
 - Mutual Exchange of Opinions with QC Promoters from Companies
- 2) Technical visits
- 3) Observation tour

5. FACILITIES AND INSTITUTIONS

- 1) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- 2) Japanese Standards Association (JSA)

6. REMARKS

METROLOGY AND MEASUREMENT STANDARDS (計量標準)

1. PERIOD

June 1, 1987 to December 14, 1987 (6.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Presently engaged in measurement or inspection of measuring instruments at governmental, semi-governmental or local metrology services
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Essentials of metrology and measurement standards
 - International system of units
 - Regulations related to metrology
 - Standardization related to metrology
 - Export inspection system
 - Fundamental theory of measurement
 - Maintenance of measurement standards
 - Specialized practical training
- 2) Observation tours
 - To related institutions

5. FACILITIES AND INSTITUTIONS

- 1) National Research Laboratory of Metrology (NRLM)
- 2) Japan Measuring Instruments Federation
- 3) Tsukuba International Centre, JICA

6. REMARKS

BUSINESS FEASIBILITY STUDY AND MANAGEMENT PRACTICE

(工業開発計画実務)

1. PERIOD

September 24, 1987 to March 13, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

- 1) University graduates or those who possess equivalent professional qualifications in this field. In addition, the basic knowledge to prepare financial statements of a business corporation is prerequisite.
- 2) More than three year experience in this field
- 3) Under 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Methods & techniques of planning
- 2) Necessary functions for business feasibility examination and techniques of study in preconstruction
- 3) Techniques of project execution in construction
- 4) Operations & improvement for better performance in post-construction
- 5) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) CHU-SAN-REN (Central Japan Industries Association)

6. REMARKS

CERTIFICATION SYSTEMS (認証検査制度)

1. PERIOD

January 7, 1988 to March 7, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Introduction of various certification systems in Japan
 - Summary of JIS certification mark system
 - Summary of export inspection system
 - Review of basic knowledge on standardization and quality control
- 2) Technical visits
- 3) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry (MITI)
- 2) International Trade Administration Bureau, MITI
- 3) Japanese Standards Association (JSA)

6. REMARKS

INDUSTRIAL PROPERTY SYSTEM (工業所有権制度)

1. PERIOD

August 27, 1987 to October 23, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Officers with experience as an examiner in the respective fields
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Brief introduction to Industry Property Systems
 - Promotion of Inventive activities and the role of Industrial Property System
 - Industrial Property Information Services
 - Transfer of technology and licencing
 - Consultation and agential activities
 - Practical use of Industrial Property System in enterprises
 - Outline of the Japanese Patent Law and Utility Model Law, the Japanese Design Law, and the Japanese Trademark Law
- 2) Practical training
 - Examination practice (Group and Individual)
- 3) On-the-spot training
 - At Japanese Patent Office (JPO), and Japan Institute of Invention and Innovation (JIII)
- 4) Case studies
 - Actual development of new products, industrial property management in large enterprises and in medium and smaller enterprises
- 5) Observation tour
 - Private Enterprises

5. FACILITIES AND INSTITUTIONS

- 1) Patent Office (JPO), Ministry of International Trade and Industry
- 2) Japan Institute of Invention and Innovation (JIII)

6. REMARKS

INDUSTRIAL PROPERTY (SEMINAR) (工業所有権セミナー)

1. PERIOD

May 18, 1987 to June 11, 1987 (1 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Senior-class officials (directors of departments) in charge of decision-making for the administration of industrial property
- 3) Between 30 and 50 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Promotion of inventive activities and effective use of patent information
 - Actual maintenance of documents and retrieval of patent documentation in JPO
 - Industrial property information services
 - The role of patent in transfer of technology
 - Consultation and agential activities
 - The use and economic value of patents
- 2) On the Spot training
 - At Japanese Patent Office (JPO) and Japan Institute of Invention and Innovation (JII)
- 3) Observation tour
 - Private Enterprises

5. FACILITIES AND INSTITUTIONS

- 1) Patent Office (JPO), Ministry of International Trade and Industry
- 2) Japan Institute of Invention and Innovation (JII)

6. REMARKS

CERAMIC ENGINEERING (窯業技術)

1. PERIOD

April 9, 1987 to December 20, 1987 (8.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) More than 3 year practical experience at educational and research institute
- 3) Between 25 and 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Introduction to ceramics
 - Ceramics in Japan
 - Body preparation
 - Glaze preparation
 - Raw materials
 - Analysis of raw materials
 - Kiln and firing
 - Quality control
- 2) Practice
 - Body preparation and Glaze preparation
 - Measurement and experiment on the properties on materials and body
- 3) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Government Industrial Research Institute, Nagoya
- 3) Others

6. REMARKS

No. 150

GLASS TECHNOLOGY (ガラス工学)

1. PERIOD

January 7, 1988 to March 25, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Engineers who have been engaged in the glass production for more than three (3) years or researchers who are desirous to obtain practical knowledge of glass production.
- 3) Between 25 and 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture and practical training
 - Machinery and mold
 - Furnace
 - Batch handling
 - Sheet glass
 - Container glass
 - Other products
- 2) Observation tour

5. FACILITIES AND INSTITUTIONS

- 1) Government Industrial Research Institute, Osaka
- 2) Osaka International Training Centre, JICA

6. REMARKS

PLASTICS (プラスチック)

1. PERIOD

September 10, 1987 to December 19, 1987 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) University or college graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 25 and 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Compression molding, transfer molding and injection molding of thermosets
 - Extrusion and blow molding
 - Injection molding of thermoplastics, etc.
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

Osaka Municipal Technical Research Institute (OMTRI)

6. REMARKS

REFRACTORY MANUFACTURING TECHNOLOGY (耐火物製造技術)

1. PERIOD

September 24, 1987 to March 13, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Be presently engaged in refractory production or research work
- 3) Occupational experience of more than 3 years
- 4) Between 26 and 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Raw materials
 - Testing of raw materials
 - Testing of one component bricks
 - Trial manufacturing of refractory bricks
 - Testing of refractory bricks
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Technical Research Laboratory of Mino Yogyo Co., Ltd.

6. REMARKS

CERAMIC GLAZE AND DECORATION (釉・着彩技術)

1. PERIOD

April 9, 1987 to September 28, 1987 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Ceramic materials & bodies
 - Glaze preparation & its application
 - Pigment making & colouring
 - Decoration techniques (screen printing etc.)
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Tajimi City Pottery Design and Technical Centre
- 3) Government Industrial Research Institute, Nagoya
- 4) Gifu Prefectural Ceramic research Institute
- 5) Ceramic Industries

6. REMARKS

TILE MANUFACTURING TECHNOLOGY (タイル製造技術)

1. PERIOD

August 13, 1987 to March 13, 1988 (7 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 26 and 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Body preparation
 - Forming
 - Analysis and evaluation of raw materials for the better-suited tile manufacturing
 - Kiln and firing
 - Quality control
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Government Industrial Research Institute, Nagoya
- 2) INAX Corporation
- 3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

PETROCHEMICAL INDUSTRY FOR MIDDLE EAST COUNTRIES

(石油化学工業)

1. PERIOD

January 21, 1988 to March 5, 1988 (1.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Presently engaged in responsible assignment and development planning in the field of petrochemical industry
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- Characteristics of petrochemical industry
- Products and plant technology of petrochemical industry
- Requirements for petrochemical industry substantialization
- Schemes and planning
- Petrochemical industries in Japan
- The role of Japan in the establishment of petrochemical industries in developing countries
- Technical Meeting with lectures
- Plant observations and field trips to relevant industries

5. FACILITIES AND INSTITUTIONS

- 1) Tokyo International Centre (TIC), JICA
- 2) The member companies of the Association of Petrochemical Industries in Japan

6. REMARKS

ENZYME TECHNOLOGY (酵素工学)

1. PERIOD

April 6, 1987 to October 2, 1987 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Master's or Doctor's degree and have majored chemistry, biochemistry, agricultural chemistry, food chemistry or applied microbiology
- 2) 3 or more years of experience in fermentation technology or enzyme technology
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and experimental training
 - Cultivation of microorganisms for enzyme production
 - Purification of enzymes
 - Properties of enzyme
 - Action of enzyme
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

Osaka Municipal Technical Research Institute (OMTRI)

6. REMARKS

RESEARCH ON CHEMICAL TECHNOLOGY (化学技術研究)**1. PERIOD**

September 7, 1987 to September 6, 1988 (12 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent in the field of chemical technology, most preferably holders of Ph. D. or M. A.
- 2) Occupational experience as researchers of more than (3) years in respective fields of chemical technology
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Orientation at JICA and the Laboratory

2) List of themes for individual studies (- see Appendix)

- (1) DNA Chemical Syntheses and Structure Analyses by NMR Spectroscopic Methods.
- (2) NMR Spectroscopy: The Techniques of Measurement and Analytical Methods of NMR Spectra for Organic Compounds.
- (3) Determination of Molecular Weight and Molecular Weight Distribution of Polymers.
- (4) Synthetic Organic Chemistry - Homogeneous Catalysis.
- (5) Applied Organic Photochemistry.
- (6) Synthesis of Micro-porous Materials involving Zeolites and their Characterization.
- (7) Design and Characterization of Catalyst for Hydrotreating Heavy Oil.
- (8) Catalysts to Prevent Air Pollution.
- (9) Industrial Organic Chemistry and Catalyst Preparation.
- (10) Catalyst of Hydrocracking of Heavy Oils.
- (11) Preparation and Characterization of Catalysts for Syngas Chemistry.
- (12) Development of Anticancer Platinum Complexes.
- (13) Oil and Fat Chemistry.
- (14) Oil and Fat Chemistry - The production of a special liquid by cultivation of fungi.
- (15) Production of high quality non-wood pulp by PA process. (Hydrogen Peroxide - Alkaline process).
- (16) Utilization of Biomass - Saccharification of Cellulosic Materials.
- (17) Application of Enzyme Reactions to Organic Syntheses.
- (18) Photochemistry and photographic chemistry.
- (19) Genetic engineering - Gene expression in yeast.
- (20) Chemical Reaction Engineering.
- (21) Power Processing Technology.

cf. The above theme of (1) and (2) are offered by Basic Chemistry Division, (3) by Analytical Chemistry Division, (4) and (5) by Synthetic Chemistry Division, (6) by Energy Chemistry Division, (7) to (11) by Catalysis Division, (12) to (19) by Bio-organic Chemistry Division, and (20) and (21) by Process Research and Development Division.

5. FACILITIES AND INSTITUTIONS

- 1) National Chemical Laboratory for Industry, Ministry of International Trade and Industry
- 2) Tsukuba International Centre, JICA

6. REMARKS

1. Introduction for the above themes are shown at Appendix.
2. Applicants can choose three themes from the above with indication of priority order.
3. Acceptable number of participant at each theme is in principle only one.

1. PERIOD

February 1, 1988 to July 30, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates
- 2) Presently engaged in Catalytic Science
- 3) A sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

- 1) Research for catalytic science
- 2) Observation and study tours to related facilities

5. FACILITIES AND INSTITUTIONS

Research Institute for Catalysis, Hokkaido University

6. REMARKS

FOUNDRY ENGINEERING (鑄造技術)

1. PERIOD

August 13, 1987 to March 13, 1988 (7 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Presently engaged in foundry engineering at research institutes, educational institutes or industries
- 3) Occupational experience of more than 2 years
- 4) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Foundry sands
 - Mould properties and sand mixtures
 - Moulding processes
 - Foundry raw materials
 - Fuels
 - Melting furnaces and melting
 - Casting design
 - Modernization of foundry shops
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Government Industrial Research Institute, Nagoya
- 3) Aichi Prefectural Industrial Research Institute
- 4) Metal Industries Institute, Mie Prefecture
- 5) Foundry Industries

6. REMARKS

METAL FINISHING ENGINEERING (金属表面处理技术)

1. PERIOD

April 9, 1987 to September 28, 1987 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 2 years
- 4) Under 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Basis metals
 - Electroplating
 - Electroless plating
 - Aluminium anodising
 - Pollution control
 - Physical and chemical vapour deposition
 - Related industries
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Industrial Research Institute, Aichi Prefecture
- 2) Nagoya Municipal Industrial Research Institute
- 3) The Plating Industrial Association of Aichi Prefecture
- 4) Nagoya International Training Centre (NITC), JICA
- 5) Industries

6. REMARKS

METAL WORKS AND ENGINEERING (金属加工技術)

1. PERIOD

October 22, 1987 to June 26, 1988 (8 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent (mechanical engineering)
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 26 and 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Metallic materials and practical metallurgy
 - Heat treatment
 - Foundry
 - Welding
 - Mechanical engineering
 - Plastic forming of metals
 - Industrial management
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Government Industrial Research Institute, Nagoya
- 3) Industrial Research Institute, Aichi Prefecture
- 4) Metal Working Industries
- 5) Universities
Nagoya University and other related university

6. REMARKS

WELDING TECHNOLOGY (溶接技術)

1. PERIOD

April 2, 1987 to November 8, 1987 (7.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Between 26 and 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Introduction to classified welding processes
 - Arc Welding:
 - Welding machinery and equipment, and their application
 - Aluminum alloys welding processes
 - Welding theory, design and inspection method
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Tokai Branch, The Japan Welding Society
- 2) The Faculty of Engineering, Nagoya University
- 3) The Japan Welding Engineering Society

6. REMARKS

ELECTRICAL STEEL MAKING (電気製鋼技術)

1. PERIOD

October 22, 1987 to March 13, 1988 (4.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 2 years
- 4) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Introduction of current situation of electrical steel making in Japan
 - Management of electrical furnaces, dissolution method, material control
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Government Industrial Research Institute, Nagoya
- 2) Daido Steel Corporation, Aichi Steel Co., Ltd.
- 3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

No. 164

PROPERTIES AND TESTINGS OF STEEL PRODUCTS (鉄鋼材試験検査技術)

1. PERIOD

May 7, 1987 to August 8, 1987 (3.1 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates in metallurgy, mechanics or chemical engineering
- 2) Practical experience of more than 2 years in production or fabrication of steel
- 3) Under 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Introduction of steel production
 - Properties of steel products
 - Fundamental properties of steel
 - Testing and inspection technics of steel products
- 2) Observation tours
 - Producers of various kinds of steel products

5. FACILITIES AND INSTITUTIONS

Nippon Steel Corporation

6. REMARKS

HEAT TREATMENT TECHNOLOGY (熱処理技術)

1. PERIOD

January 7, 1988 to June 26, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8) /

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of over 2 years
- 3) Mechanical or metallurgical engineer
- 4) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Theory of metallic materials
 - Fundamental practice on heat treatment
 - Related technology
 - Applied technology of heat treatment
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Nagoya Municipal Industrial Research Institute

6. REMARKS

TOOLING AND PRODUCTION FACILITY PRACTICAL ENGINEERING

(治工具生産技術)

1. PERIOD

December 10, 1987 to June 10, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of more than 5 years
- 3) In charge of tool engineering, production management, production engineering, etc.
- 4) Under 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Basic knowledge of machining
 - Process design for product manufacturing
 - Materials for making jigs and tools, and heat treatment
 - Design work management and control for tools and jigs
 - Basics for jigs and tools designing
 - Theories of tools and jigs design
 - Tool making equipment and measuring instruments
 - Practical knowledge of tools
 - Tools and factory management
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) CHU-SAN-REN (Central Japan Industries Association)
- 3) Industries

6. REMARKS

SHIPBUILDING (船舶技術)

1. PERIOD

January 7, 1988 to December 20, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) Be presently engaged in the field of maritime industries or its related industries.
- 2) Meet one of the following requirements:
 - a. Be university graduate who majored in engineering, and have more than three (3) years of occupational experience in shipbuilding industries. (But, he who majored in naval architecture is not required this occupational experience.)
 - b. Have the academic background equivalent to the above.
- 3) Have a sufficient command of spoken and written English
- 4) Be male and be not more than thirty (30) years of age.
- 5) Be in good health, both physically and mentally, to undergo the 12-month training.

4. DESCRIPTION OF TRAINING

- 1) Japanese Language
- 2) Orientation on Shipbuilding Industries
- 3) Lectures on Shipbuilding Industries
- 4) Observation Study Tours
- 5) Practice at Shipyards

5. FACILITIES AND INSTITUTIONS

- 1) Maritime Technology and Safety Bureau, Ministry of Transport
- 2) Overseas Shipbuilding Cooperation Centre

6. REMARKS

MAINTENANCE OF CONSTRUCTION MACHINERY (建設機械整備)

1. PERIOD

May 14, 1987 to August 10, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates (mechanical engineering), or equivalent with occupational experience of more than 3 years
- 2) Presently engaged in or expected to be engaged in near future in planning and administration work in the field of construction machinery
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Development and present situation of mechanized construction work and use of construction machinery
 - Planning of mechanized construction work and use of construction machinery
 - Function, structure and performance of construction machinery
 - Maintenance, repair, inspection, troubleshooting and field construction machinery
 - Planning, layout, parts control, tool control and administration of work shop
 - Construction sites and related manufacturing firms
- 2) Practical training
 - Fundamental Practice: Engine, Clutch, Torqueconverter, Transmission, Final drive, Differential gear, Brake, Steering, Hydraulic System, Power shift transmission, Undercarriage, etc.
 - Specialized Practice: Bulldozer, Scarper, Grader, Wheel-loader, Hydraulic excavator, Crane, Compaction Machinery, Dump Trunk, etc.
- 3) Presentation of country report
- 4) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Ministry of Construction
- 2) Japan Construction Mechanization Association

6. REMARKS

**TECHNIQUES D'ENTRTIEN ET DE PREPARATION DE L'EQUIPEMENT
DE CONSTRUCTION (建設機械整備(仏語))**

1. PERIOD

From October 8, 1987 to December 6, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates, or equivalent with occupational experience of more than 3 years
- 2) Presently engaged in or expected to be engaged in future in planning and administration work in the field of construction machinery
- 3) Under 40 years of age
- 4) Good working knowledge of French

4. DESCRIPTION OF TRAINING

- 1) Lecture
 - Planning of mechanized construction work and use of construction machinery
 - Function, structure, performance of construction machinery
 - Maintenance, repair, inspection, troubleshooting and field construction machinery
 - Planning, layout, parts control, tool control and administration of work shop
- 2) Practical training
 - Fundamental practice = Engine, Clutch, Transmission Differential gear etc.
 - Specialized practice = Bulldozer, Scarper, Grader Excavator, Crane
- 3) Presentation of country robot
- 4) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) Japan Construction Mechanization Association

6. REMARKS

This course will be conducted in French or through the interpretation of Japanese into French.

No. 170

MECANIQUE AUTOMOBILE VEHICULES DIESEL (AUTOBUS,
CAMIONS POIDS-LOURD) (バス・トラック整備技術(仏語))

1. PERIOD

From January 14, 1988 to March 26, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

- 1) Qualified educational background in their respective field
- 2) Occupational experience of more than 3 years in maintenance and repair of diesel vehicles
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of French

4. DESCRIPTION OF TRAINING

- 1) Lecture and practical training
- Fundamental knowledges about mechanism and function of diesel vehicles
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) HINO Motors, Ltd.

6. REMARKS

This course will be conducted in French or through the interpretation of Japanese into French.

PLANT MAINTENANCE ENGINEERING (プラント・メンテナンス)

1. PERIOD

May 11, 1987 to August 16, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Engaged or expected to be working on their return in this line
- 3) Between 30 and 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Maintenance in Japan
 - Maintenance at Steel Plant, Electrical Machinery MFG Plant, Chemical Plant, Machine Assembly Plant

- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Nippon Steel Corporation
- 2) Sumitomo Metal Industries Ltd.
- 3) Mitsubishi Chemical Industries Ltd.
- 4) Nissan Motor Co., Ltd.
- 5) Yasukawa Electric MFG. Co., Ltd.
- 6) Kyushu Institute of Technology
- 7) Sumitomo Metal Industries, Ltd.

6. REMARKS

AUTOMATIC CONTROL (自動制御)**1. PERIOD**

July 16, 1987 to October 21, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- (1) Have two years' occupational experience or more in the field of production, planning of plants and machineries, or laboratory research and be engaged in the automation at present or in the near future.
- (2) Be those who graduated from university's engineering department of mechanics, electricity or instrumentation, or have the equivalent academic background,
- (3) Have a sufficient command of spoken and written English, and
- (4) Be not more than forty (40)
- (5) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the training.

4. DESCRIPTION OF TRAINING

- 1) The course will be conducted in the form of:
Lecture/discussions, studies by simulators, field trips, etc.

The following major subjects will be covered in the course:

- | | |
|--|---|
| a. Theory of Feedback control and feedforward Control | h. Programmable Logic Controller (PLC), programming methods, operation and maintenance techniques |
| b. Modeling and its application in practical situations | i. Practice of operation and maintenance of the industrial robots of playback system |
| c. Advanced control theory | j. Process control system |
| d. Measurement and sensors and its importance in the control system | k. Selection of process features and control characteristics |
| e. Basic knowledge of hydraulic, pneumatic and electric sequence control circuits, and its designing | l. Measuring method of dynamic characteristics of process |
| f. Application of hydraulic, pneumatic and electric actuators | m. Optimum adjustment by control instruments |
| g. Computer literacy | n. Field observations |

5. FACILITIES AND INSTITUTIONS

Kitakyushu Industrial Research Institute, Fukuoka Prefecture

6. REMARKS

MACHINE CONDITION DIAGNOSIS TECHNIQUE (設備診断技術)

1. PERIOD

January 7, 1988 to March 27, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) An engineer who has engaged for 3 years or more in the field of plant maintenance
- 3) Have a sufficient command of spoken and written English
- 4) Under 35 years of age
- 5) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the training.

4. DESCRIPTION OF TRAINING

- 1) Lectures and practice on machine condition diagnosis technique
- 2) Observation tour

5. FACILITIES AND INSTITUTIONS

- 1) Nippon Steel Corporation
- 2) Nippon Steel Technics Corporation
- 3) Nittetsu Electrical Engineering & Construction Co., Ltd.
- 4) Computer Learning Center -- Nogata

6. REMARKS

DESIGN & PRODUCTION OF SPARE PARTS FOR MAINTENANCE

(保全用部品設計製造)

1. PERIOD

January 7, 1988 to March 27, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates of the equivalent
- 2) An engineer who has engaged 5 years or more in the field of plant maintenance
- 3) Under 40 years of age
- 4) Have a sufficient command of spoken and written English
- 5) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the training.

4. DESCRIPTION OF TRAINING

- 1) Maintenance spare parts inventory control & store keeping
- 2) Manufacturing of spare parts
- 3) Improvement of spare parts
- 4) Reclamation of damaged parts
- 5) Inspection methods

5. FACILITIES AND INSTITUTIONS

- 1) Sumitomo Metal Industry
- 2) Nishinippon Institute of Technology
- 3) Kitakyushu Industrial Research Institute, Fukuoka Prefecture
- 4) Japan Casting & Forging Corporation
- 5) Maekawa Electric Steel Casting Co.
- 6) Nippon Steel Corporation

6. REMARKS

COTTON WEAVING ENGINEERING (綿織布技術)

1. PERIOD

April 9, 1987 to September 28, 1987 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Be presently engaged in the production as the mill manager and/or weaving master in the textile mill
- 3) Between 30 and 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Preparatory process of weaving (sizing and warping)
 - Mechanism of weaving machine
 - Loom operation and maintenance
 - Designing and analysis of different fabrics
 - Physical and chemical testing method of fabrics
 - Modern techniques of management of weaving mills, etc.
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Aichi Prefectural Textile Research Centres
- 2) Toyoda Automatic Loom Works, Ltd.
- 3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

POLYMERS AND TEXTILES TECHNOLOGY (纖維高分子)

1. PERIOD

August 10, 1987 to November 9, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 25 and 35 years of age
- 5) Good working knowledge of English or Japanese

4. DESCRIPTION OF TRAINING

- 1) Introductory lectures in group one week
 - * Structure and properties of fibers
 - * Dyeing, finishing and testing methods of textiles
 - * Application of computers in the processing of textile products
 - * Utilization of native plant fibers
 - * Development of synthetic polymers
 - * Processing and physical properties of synthetic polymers
 - * Industrial application of synthetic polymers
 - * Yarn making (Spinning) process
- 2) Individual Studies six weeks
 - a. Natural Raw Materials
 - b. Textile Processing
 - c. Dyeing/Finishing Process
 - d. Synthesis of Polymers
 - e. Modification of Polymers
 - f. Processing/Physical Properties of Polymeric Materials
 - g. Application of Polymeric Materials
- 3) Observation tour one week
- 4) Technical report making one week

5. FACILITIES AND INSTITUTIONS

- 1) Research Institute for Polymers and Textiles, Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- 2) Tsukuba International Centre, JICA

6. REMARKS

INDUSTRIAL DESIGN (Package) (インダストリアルデザイン(パッケージ))

1. PERIOD

August 27, 1987 to November 9, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Practical experience in design work for more than 5 years
- 2) Under 35 years of age
- 3) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Guidance
 - Orientation
 - Presentation of Country Report
- 2) Lecture
 - Outline and Basic Knowledge of Package Design
 - Technology
 - Goods Development
 - Advertising
 - Design Process
 - Marketing
 - Case Study
- 3) Study Visits
- 4) Practical Training
 - Package Design Plan
 - Idea Development
 - Design Work
 - Presentation Technique
 - Finish Work
- 5) Presentation and Evaluation

5. FACILITIES AND INSTITUTIONS

- 1) Japan Industrial Design Promotion Organization (JIDPO)
- 2) Japan Package Design Association (JPDA)

6. REMARKS

PACKAGING ENGINEERING (包装技術)

1. PERIOD

January, 25, 1988 to March 21, 1988 (2.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Thirteen (13)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Experience for more than 3 years in this field
- 3) Good working knowledge of English
- 4) Under 40 years of age

4. DESCRIPTION OF TRAINING

- 1) Packaging Materials
 - Corrugated boards and boxes
 - Paperboard containers and printing
 - Treated papers and cellulose films
 - Plastic films
 - Plastic containers
 - Metal cans
 - Glass bottles

* 2) and 3) are optional subjects.

- 2) Transport Packaging Techniques
 - Packaging plan
 - Transport packaging and wooden boxes
 - Outer packaging and its machines
 - Testing Methods and equipments
 - Packaging standardization
- 3) Consumer Packaging Techniques
 - Automation in Packaging operations and machines
 - Moisture-proof and gas-barrier packaging
 - Packaging design (graphic)
 - Safety and sanitation in packaging
 - Food packaging techniques
- 4) Technical Visit and Practical Training

5. FACILITIES AND INSTITUTIONS

Japan Packag Institute (JPI)

6. REMARKS

ENERGY

ENERGY SAVING (省エネルギー)

1. PERIOD

October 19, 1987 to December 9, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

1. be university/college graduates or equivalent and be presently employed in government, governmental institutions, industrial associations, or companies,
2. be presently engaged in work in the energy field or expect to be engaged in such work after returning to the country,
3. Good working knowledge of English.

4. DESCRIPTION OF TRAINING

1. Lecture and Practical Training

- a. Energy consumption in Japanese industry, Transportation, Building, Electric Power
- b. Energy conservation policy of Japanese Government
- c. Energy conservation situation in Japanese major industries
- d. Method of energy management in industries
- e. Energy conservation technology in industry
- f. Energy consumption measuring and data analysis
- g. Presentation of country reports and discussion

2. Observation Tour

5. FACILITIES AND INSTITUTIONS

- 1) Agency of Natural Resources and Energy, Ministry of International Trade and Industry.
- 2) Energy Conservation Center, Japan (ECC)

6. REMARKS

HYDRO-ELECTRIC POWER ENGINEERING (水力発電)

1. PERIOD

May 11, 1987 to July 23, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields (electrical and/or mechanical or civil engineers)
- 3) Occupational experience of more than 3 years
- 4) Be under 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Economic feasibility study of hydro-electric power development
 - Investigation, planning and geological investigation of hydro-electric power project site
 - Planning of power system
 - Design and construction of dams, stations, electric facilities and telecommunication facilities
 - Operation and maintenance of hydro-electric power plant
- 2) Observation tours
 - Various types of power stations
 - Various facilities related to Electric Power Industry
 - Manufacturers of Equipments related to Electric Power Industry

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Center, Inc.
- 2) Electric Power Development Co., Ltd.
- 3) Agency of Natural Resources and Energy, Ministry of International Trade and Industry

6. REMARKS

THERMAL-ELECTRIC POWER ENGINEERING (火力発電)

1. PERIOD

May 11, 1987 to July 23, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields (electrical and/or mechanical engineers)
- 3) Occupational experience of more than 3 years
- 4) Be under 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Japanese electric power policy
 - Power system management
 - Operation and maintenance of thermal power station
 - Measures for energy saving
- 2) Observation tours
 - Various types of power stations
 - Various facilities related to Electric Power Industry
 - Manufacturers of equipments related to Electric Power Industry

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Center, Inc.
- 2) Tokyo Electric Power Company, Inc.
- 3) Agency of Natural Resources and Energy, Ministry of International Trade and Industry

6. REMARKS

ELECTRIC POWER MANAGEMENT (電気事業経営)

1. PERIOD

August 20, 1987 to October 15, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) managerial position in electric power industry
- 3) Between thirty (30) and fifty (50) years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Outline of the electric power industry in Japan
 - Organization, personnel management, labor management and education
 - Information system
 - Technological development
 - Electric apparatus makers related to the electric power industry
 - Electric power supply plan, electric power sources development plan
 - Power systems operation
 - Plan, construction, operation, and maintenance of power transmitting and distributing facilities
 - Customer services
- 2) Observation tours
 - Hydro, thermal and nuclear power stations
 - Heavy machinery manufactures
- 3) Discussion and evaluation on achievement

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Center, Inc.
- 2) Chubu Electric Power Co., Ltd.
- 3) Agency of Natural Resources and Energy, Ministry of International Trade and Industry

6. REMARKS

ELECTRIC POWER DISTRIBUTION ENGINEERING (配電技術)

1. PERIOD

September 7, 1987 to November 20, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) Technical college graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 7 years
- 4) Between 30 and 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
 - Japan's electric power policy
 - Transmission, transformation and distribution lines
 - Design, construction and maintenance of transmission lines
 - Distribution facilities and work
 - Indoor and outdoor wiring, etc.
- 2) Observation tours
 - Various types of power stations
 - Various facilities related to power distribution
 - Manufacturers of equipments related to power distribution

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Center, Inc.
- 2) Kansai Electric Power Co., Inc.
- 3) Agency of Natural Resources and Energy, Ministry of International Trade and Industry

6. REMARKS

COAL SCIENCE AND TECHNOLOGY (石炭資源開発・利用)

1. PERIOD

October 1, 1987 to December 15, 1987 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Three years' occupational experience or more in the field of coal science and technology
- 2) University graduates or equivalent
- 3) A sufficient command of spoken and written English
- 4) Not less than twenty-five (25), and not more than forty-five (45) years of age

4. DESCRIPTION OF TRAINING

- 1) Lectures (basic & advanced)
 - Coal Geology
 - Coal Mining Engineering
 - Coal Chemistry
 - Mechanical Engineering for Coal Utilization
 - Environmental Engineering for Coal Utilization
- 2) Experimental study
- 3) Observation
 - Coal mines and factories in Hokkaido & Kyushu

5. FACILITIES AND INSTITUTIONS

- 1) Hakozaki (Main) Camps, Faculty of Engineering and Faculty of Science, Kyushu University
- 2) Research Institute of Industrial Science, Kyushu University

6. REMARKS

GEOTHERMAL ENERGY (地熱エネルギー)

1. PERIOD

August 27, 1987 to November 19, 1987 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

- 1) Young scientists or technologists who have graduated from universities, majoring in geology, geophysics, chemistry, electric engineering, mechanical engineering, mining, or similar subjects or those having an equivalent academic background to the above
- 2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Subjects of Lectures, Seminars and Experiments

- | | |
|--|--|
| (1) Geothermal Geology | (14) Earthquake Mechanism and Geothermal Resources |
| (2) Volcanology | (15) Geothermal Survey by Remote Sensing |
| (3) Alteration Mineralogy | (16) Geothermal Measurements |
| (4) Experiments on Geothermal Geology | (17) Reservoir Physics |
| (5) Isotope Geochemistry | (18) Geothermics |
| (6) Hydrothermal Geochemistry | (19) Measurements of Thermal Conductivity of Rocks |
| (7) Experiments on Hydrothermal Geochemistry | (20) Hydraulic Fracturing Technology |
| (8) Chemistry of Scale Formation | (21) Geothermal Drilling Technology |
| (9) Heat and Thermodynamics | (22) Geothermal Power Plant Engineering |
| (10) Geothermal Hydrology | (23) Corrosion Fundamentals |
| (11) Geophysical Exploration | (24) Utilization of Geothermal Resources |
| (12) Gravity and Magnetic Surveys | (25) Special Lectures |
| (13) Magneto-telluric Method | |

2) Field Work

- Geology
- Geochemistry
- Geophysics
- Drillhole engineering
- Production engineering

3) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Kyushu University
- 2) Kyushu Electric Power Company, Inc.

6. REMARKS

NUCLEAR TECHNOLOGY (原子力基礎実験)

1. PERIOD

January 18, 1988 to March 20, 1988 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) Either graduate from colleges or universities
- 2) Under 40 years old
- 3) Working for administration of Nuclear Technology
- 4) Sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

- 1) Lectures
 - Basic theories
 - Radiological protection
 - Radiation and radioisotope applications
 - Reactor engineering
- 2) Laboratory exercises
 - Basic experiments
 - Radiation monitoring
 - Radiation and radioisotope application
 - Reactor engineering
- 3) Practical exercises
 - Operation of radiation monitoring facilities
- 4) Observation trip
 - Nuclear Power Plant, etc.

5. FACILITIES AND INSTITUTIONS

Radioisotope and Nuclear Engineering School, Japan Atomic Energy Research Institute

6. REMARKS

RADIATION SCIENCES (放射線科学基礎研究)

1. PERIOD

February 1, 1988 to October 26, 1988 (9 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates, preferably of master courses, in natural sciences
- 2) Currently performing scientific research duties in connection with radiation sciences or be expected to perform such duties in the near future
- 3) A sufficient command of spoken and written English
- 4) Under thirtyfive (35) years of age

4. DESCRIPTION OF TRAINING

- 1) Introductory Lectures
- 2) Study Tour to related institutions
- 3) Individual Studies
The applicant should select one of the following subjects (from a. to j.) for individual study and state in the Form of Nomination (A3 Form)
 - a. Nuclear and Radiation Physics
 - b. Standardization of Radiation
 - c. Instrumentation Technology
 - d. Radiochemistry
 - e. Radiation Biology
 - f. Radioecology
 - g. Radiation Protection
 - h. Radiology and Nuclear Medicine
 - i. Nuclear Technology for Agriculture

On receipt of the completed Form of Nomination, JICA will endeavour to arrange a programme of individual study for each participant meeting his requirements.
- 4) Technical thesis provision
The participants are required to complete a thesis at the end of the course under the supervision of Japanese researchers.

5. FACILITIES AND INSTITUTIONS

- 1) University of Tsikuba, Ministry of Education
- 2) National Institute of Argo-Environmental Sciences, Ministry of Agriculture, Forestry and Fisheries
- 3) Electrotechnical Laboratory
Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- 4) (a) National Institute of Radiological Sciences, Science and Technology Agency, Prime Minister's Office
(b) Laboratory for Radioecology, Nakaminato
National Institute of Radiological Sciences, Science and Technology Agency, Prime Minister's Office

6. REMARKS

An applicant should attach to the Nomination Form two (2) copies of his/her Country Report in English typewritten in less than ten (10) pages of ISO A4 size papers in semi-double spacing. The report should comprise the following items.

- Present conditions of radiation sciences in the country of the applicant. Please give any available statistics on the subject.
- Contents of official duties of the applicant.
- Some comments on the subject selected by the applicant for individual study.

COMMERCE AND TRADE

PRODUCTION MANAGEMENT (THEORY AND PRACTICE ON WORK IMPROVEMENT)

(生産性向上技術)

1. PERIOD

October 5, 1987 to December 22, 1987

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Be those who have more than five (5) years occupational experience in the field of Production management.
- 2) Be those who graduated the faculty of engineering or have the equivalent academic background.
- 3) Have a sufficient command of spoken and written English.
- 4) Be under forty (40) years of age.
- 5) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as disqualifying condition for the participation in the training.

4. DESCRIPTION OF TRAINING

- 1) Lecture/discussions, problem solving practice (basic).
- 2) Field trips

5. FACILITIES AND INSTITUTIONS

- 1) Nissan Motor Co., Ltd., Kyushu Plant
- 2) Toto Co., Ltd.
- 3) Yasukawa Electric Mfg. Co., Ltd.
- 4) Yukuhashi Plant
- 5) Y-E DRIVE

6. REMARKS

TRADE PROMOTION (A) (SEMINAR) (貿易振興セミナー(A))

1. PERIOD

January 14, 1988 to March 13, 1988 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Senior officials of governmental or semi-governmental organizations in their respective fields
- 3) Occupational experience of more than 5 years
- 4) Under 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and discussions
 - a) Japanese Export Promotion (in the past)
 - History of Japan's International trade
 - Japan's Export Policy (in the past)
 - Japanese Enterprises, Effort to Export
 - Trade Insurance-Export Insurance
 - Trade Financing
 - Public Guidance
 - Aid to Export (chamber of Commerce and Industry, Industrial Associations)
 - b) Japan as a Market-1
 - Import Policy
 - Import activities of JETRO
 - Aid to Import (sogo shosha)
 - Japan and the Japanese
 - Personnel Management in Japan
 - Decision Making System in Japan
 - c) Japan as a Market-2
 - Marketing in Japan
 - International Marketing
 - Opening a Market
 - d) Country Report
 - e) International Economy
- 2) Practical training
Independent Marketing Research
- 3) Observation tour

5. FACILITIES AND INSTITUTIONS

World Trade Centre of Japan (WTC)

6. REMARKS

TRADE PROMOTION (B) (SEMINAR) (貿易振興セミナー(B))

1. PERIOD

September 24, 1987 to November 21, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Senior officials of governmental or semi-governmental organizations in their respective field
- 3) Occupational experience of more than 5 years
- 4) Under 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and discussions
 - a) Japanese Export Promotion (in the past)
 - History of Japan's International trade
 - Japan's Export Policy (in the past)
 - Japanese Enterprises, Effort to Export
 - Trade Insurance-Export Insurance
 - Trade Financing
 - Public Guidance
 - Aid to Export (chamber of Commerce and Industry, Industrial Associations)
 - b) Japan as a Market-1
 - Import Policy
 - Import activities of JETRO
 - Aid to Import (sogo shosha)
 - Japan and the Japanese
 - Personnel Management in Japan
 - Decision Making System in Japan
 - c) Japan as a Market-2
 - Marketing in Japan
 - International Marketing
 - Opening a Market
 - d) Country Report
 - e) International Economy
- 2) Practical training
Independent Marketing Research
- 3) Observation tour

5. FACILITIES AND INSTITUTIONS

World Trade Centre of Japan (WTC)

6. REMARKS

TRADE PROMOTION (C) (SEMINAR)

(貿易振興セミナー(C))

1. PERIOD

May 7, 1987 to June 6, 1987

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Director level officials of governmental or semi-governmental organizations in their respective fields
- 3) Under fifty (50) years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and discussions
 - a) Japanese export promotion (past & present)
 - Export Policy (in the past)
 - Japanese enterprise's effort to export
 - Trade Insurance - Export Insurance
 - Import Policy (present)
 - Aid to Export & Import (Japan External Trade Organization, Chamber of Commerce, Industrial Association)
 - b) Trade Relations among Japan, ASEAN and Pacific Countries
 - History of Japanese International Trade (1) & (2)
 - Trade Financing
 - Overseas Direct Investment
 - An outlook of economic and Trade relations among those countries
 - c) Japan as a Market
 - Corporate Decision Making/working system of Japan
 - Sogō-Shosha
 - Japan as an Export market
 - Businessmen's advise for entering the Japanese market
 - d) Country Report
- 2) Observation tour

5. FACILITIES AND INSTITUTIONS

World Trade Centre of Japan (WTC)

6. REMARKS

FOREIGN TRADE PRACTICE FOR LEADERS (貿易実践指導者)

1. PERIOD

August 20, 1987 to December 8, 1987 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

- 1) University graduates or equivalent with occupational experience of more than 3 years
- 2) Leading officers in administration of foreign trade
- 3) Under 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- Lecture and practical training
- Theory, policy and structure of trade
 - Business practice of trade transaction
 - Function and system of customs
 - Export insurance and inspection of export and import goods
 - Foreign exchange and foreign trade finance
 - Marine insurance
 - Transportation
 - Dispute and settlement
 - Communication

5. FACILITIES AND INSTITUTIONS

- 1) Kobe International Association
- 2) The Kobe Chamber of Commerce and Industries
- 3) Kobe University
- 4) Kobe Customs House, Ministry of Finance

6. REMARKS

TOURISM

TOURISM PROMOTION (SEMINAR) (観光振興セミナー)

1. PERIOD

October 1, 1987 to December 2, 1987 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eighteen (18)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of more than 3 years
- 3) Presently engaged in tourism promotion activities in public tourist organizations
- 4) Between twenty five (25) and thirty five (35) years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures, Discussions and observations
 - Tourism Policy and Administration
 - Tourism Industries
 - Tourism Promotion Activities
 - Reception Services for Foreign Tourists
 - Tourism Manpower Development

- 2) Presentation and Discussion on Tourism Promotional Activities of the Participating Countries
- 3) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Tourism Department, Ministry of Transport
- 2) Japan National Tourist Organization

6. REMARKS

