

## **AGRICULTURE**



AGRICULTURAL COOPERATIVES 農業協同組合

1. PERIOD

May 6, 1989 to July 8, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University or professional school graduates, engaged in the offices of co-operative service
- 2) Be requested to work in the co-operative movement after participation in the course
- 3) Under 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture & Discussion
  - Management of Agri. Coops
  - Economic Business & Credit Business of Agri. Coops
  - Mutual Insurance Business of Agri. Coops
  - Farm Guidance Activities of Agri. Coops
  - Establishment of Farming Complex
  - Educational, Better Living Activities of Agri. Coops
  - Establishment of the Regional Agriculture Promotion Plan
- 2) Field observation and study tour

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) The Institute for the Development of Agricultural Cooperation in Asia (IDACA)

6. REMARKS

AGRICULTURAL EXTENSION SERVICE 農業普及

1. PERIOD

April 10, 1989 to July 23, 1989 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University graduates or equivalents;
- 2) Engaged in extension work for farmers or those engaged in a training of farm advisors, subject-matter specialist (sms) or administration farm officer related to the agricultural extension with more than three years of experience;
- 3) Under 45 years of age;
- 4) Have a sufficient command of spoken and written English, and preferably working knowledge of English;

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Agriculture and its extension services in Japan
  - Basic theory of extension method
  - Extension activities in the countries of participants
- 2) Observation tours
  - Extension offices
  - Experimental research facilities
- 3) Field study
  - Administration and management of extension service and education by the local government
  - Visit to extension stations, experimental research institutions and private companies, etc.

5. FACILITIES AND INSTITUTIONS

- 1) Extension and Education Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries
- 2) Japan Agricultural Development and Extension Association

6. REMARKS

RICE PRODUCTION 米生産

1. PERIOD

March 5, 1990 to October 26, 1990 (8.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Presently engaged in agricultural training or extension service in the field of rice cultivation
- 3) Good working knowledge of English
- 4) *Within 25 to 35 years of age*

4. DESCRIPTION OF TRAINING

- 1) Lecture
  - Agriculture in General
  - Rice Agronomy
  - Soil and Fertilizer
  - Varietal Improvement
  - Rice Physiology
  - Plant Protection
  - Agricultural Extension
  - Economy of Rice Farming
- 2) Experiment and Field Practice
  - Seedling and Land Preparation
  - Transplanting
  - Crop Management
  - *Harvesting and Post Harvest*
  - Chemical Analysis of Soil
  - Field Experiment on Specific Subjects
  - Laboratory Experiments
- 3) Study Tour
  - Progressive Farmers
  - Agricultural Research Stations
  - Rice Marketing and Agricultural Cooperatives
  - Agromachinery Manufactories

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

No. 120

PRODUCTION DU RIZ 米生産 ( 仏語 )

1. DUREE

du 7 mars 1990 au 26 octobre 1990 (8 mois)

2. NOMBRE DE PARTICIPANTS QUI SONT ACCEPTEE

cinq (5)

3. QUALIFICATION DES CANDIDATS

Les candidats doivent être:

- 1) Titulaire d'un diplôme universitaire ou équivalent,
- 2) Chargé des services de formation agricole ou de mise en valeur dans le domaine rizicole,
- 3) En bonne connaissance du français,
- 4) de moins de 35 ans

4. PROGRAMME DE FORMATION

- 1) Lecture
  - Culture et Physiologie du riz
  - Sols et engrais
  - Protection des plantes
  - Machines agricoles
  - Vulgarisation
  - Infrastructure de la rizière
- 2) Pratique et Expérimentation
  - Préparation des pépinières et semences
  - Semis direct et repiquage
  - Manoeuvre de machine agricoles
  - Gestion des plants
  - Analyse d'engrais chimiques du sols
  - Récolte, séchage et Décorticage
  - Expérimentations par groupe
- 3) Voyage d'étude
  - Paysan pilote
  - Station d'expérimentation agricole
  - Bureau de vulgarisation
  - usin de machine agricoles

5. ORGANISME RESPONSABLE DU STAGE

Tsukuba International Agriculture Training Centre (TIATC)

6. AUTRE

En règle générale, la langue française sera utilisée au cours du stage, lorsque le cours sera donné en japonais, l'interprète francophone se présentera.

Le cours intensif de langue japonaise est organisé avant le stage de formation, pendant un mois.

No. 121

RICE CULTIVATION TECHNOLOGY

稲作技術

1. PERIOD

February 5, 1990 to November 24, 1990 (10 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates with an occupational experience of more than five years in the field of rice
- 2) Presently engaged in the research work or education in the field of rice
- 3) Between twenty seven (27) and forty (40) years of age
- 4) A sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

- 1) Lecture
  - Agriculture in general
  - Rice agronomy
  - Soil and fertilizer
  - Varietal improvement
  - Rice physiology
  - Plant protection
  - Statistical Procedure for Agriculture Research
- 2) Experiment and field practice
  - Individual experiment on specific subject matter
  - Fundamental experiment on Soil analysis, photosynthesis, Pest collecting, Artificial pollination, Tissue culture, etc.
  - Field practice from sowing to post harvest
- 3) Study tour

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

1. PERIOD

August 24, 1989 to November 15, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

- (1) be national, state, or provincial government level officials who are involved in rural society development, rural women development, extension & education, and other working services which include the planning and execution of instruction and training for the improvement of rural household standards of living, and improvement of the technological abilities of rural women.
- (2) be female under forty years of age in principle,
- (3) have a sufficient command of spoken and written English,
- (4) 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, discussions, workshops, practices and field trip.
  - Technologies for the utilization of regional produce, etc.
    - Utilization technology for produce etc., which exists in the region
    - Improvement technologies for agricultural work and home living environments.
    - Methods for promoting practical use of regional resources by rural women and utilization activities.
  - Human resource training and case study.
    - Conditions of rural household life styles and utilized resources in participating nations.
    - Training and guidance plan for rural women leaders.
    - Creating and training in regional promotion and human resource development programs by women.
  - Main points in the improvement of rural standard of farmer's living in Japan.
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Ministry of Agriculture, Forestry and Fisheries
- 2) The Rural Home and Family Living Improvement Study Association.

6. REMARKS

AGRICULTURAL STATISTICS 農林統計

1. PERIOD

July 13, 1989 to October 9, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Governmental officials engaged in planning and administration in agricultural statistics
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Agricultural situation and statistics in Japan
  - Method of statistical survey
  - Survey for the basic structure on agriculture
  - Survey on agricultural economics
  - Outline of Forestry, Fishery survey and Marketing information service
  - Utilization of computer

5. FACILITIES AND INSTITUTIONS

- 1) Statistics and Information Department, Economic Bureau, Ministry of Agriculture, Forestry and Fisheries
- 2) National Federation of Statistics Association on Agriculture & Forestry

6. REMARKS

VEGETABLE CROPS PRODUCTION 野菜生産

1. PERIOD

February 5, 1990 to November 24, 1990 (10 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates with occupational experience for more than three years in their specialities
- 2) Presently engaged in extension service, research work or training activity in the field of vegetable horticulture, or be agronomists who are to work in the said field having a good knowledge of vegetable cultivation
- 3) Between twenty seven (27) and thirty seven (37) years of age
- 4) A sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

The course deals with the following subjects through lectures, experiments, practices and observations in study tours, on major vegetable crops in Japan

- 1) Applicable method of intensive cultivation of major vegetable crops
- 2) Fundamental knowledge on plant physiology, plant protection and soil in relation to high yielding in vegetable crops
- 3) Principal matters pertaining to rationalization of vegetable marketing and circulation

The following major subjects will be covered in the course.

1. Lecture
  - (1) Agriculture in general
  - (2) Vegetable cultivation in general
  - (3) Vegetable cultivation in particular
  - (4) Soil and fertilizer
  - (5) Plant protection
  - (6) Post harvest technology and marketing
  - (7) Breeding and seed technology
  - (8) Technology development and transfer method
2. Experiment and practice
3. Study tour

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

VEGETABLE SEED PRODUCTION 野菜採種

**1. PERIOD**

February 5, 1990 to November 24, 1990 (10 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**3. QUALIFICATIONS**

- 1) University graduates with occupational experience for more than three years in their specialities
- 2) Presently engaged in vegetable seed production, seed technology or varietal improvement
- 3) Between twenty seven (27) and thirty seven (37) years of age
- 4) A sufficient command of spoken and written English

**4. DESCRIPTION OF TRAINING**

The course deals with the following subjects through lectures, experiments, practices and observations in study tours, on major vegetable crops in Japan

- 1) Seed production method of major vegetable crops
- 2) Seed technology on sorting, drying, storage, and germination of vegetable seeds
- 3) Applicable method of varietal improvement of major vegetable crops

The following major subjects will be covered in the course.

1. Lecture
  - (1) Agriculture in general
  - (2) Vegetable cultivation in general
  - (3) Vegetable seed production method
  - (4) Seed technology
  - (5) Varietal improvement
2. Experiment and practice
3. Study tour

**5. FACILITIES AND INSTITUTIONS**

Tsukuba International Agricultural Training Centre, JICA

**6. REMARKS**

All participants are requested to prepare some statistical data and references on vegetable and its seed production in their country for the presentation of country report.

CONTROL OF RICE DISEASES AND INSECT PESTS

1. PERIOD

June 1, 1989 to December 8, 1989 (6.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) No less than 26, and not more than 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - General view on rice cultivation in Japan
  - General principles of rice diseases and insect pests control
  - Rice diseases
  - Rice insect pests
  - Pesticides and Application methods
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

- 1) Hyogo International Centre, JICA
- 2) Hyogo Prefectural Agricultural Institute
- 3) Department of Plant Protection, Faculty of Agriculture, Kobe University

6. REMARKS

PESTICIDE UTILIZATION FOR PLANT PROTECTION 農薬利用

1. PERIOD

January 11, 1990 to June 23, 1990 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) *University graduates or equivalent*
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) No less than 26, and not more than 40 years of age
- 5) Good working knowledge of English
- 6) Request to attain skill to operate Gas Chromatograph during their stay in Japan

4. DESCRIPTION OF TRAINING

- 1) Orientation on Specific Subject
- 2) Training on Specific Subject
  - Lecture and Practice
    - Administration and laws pertaining to the use of pesticides
    - Bioassay of pesticides
    - Exposition of pesticides
    - Pesticides in crops, foods and environment
    - Application and application equipments
  - Observation Tours and Visits

5. FACILITIES AND INSTITUTIONS

- 1) Hyogo International Centre, JICA
- 2) Hyogo Prefectural Agricultural Institute
- 3) Department of Plant Protection, Faculty of Agriculture, Kobe university
- 4) National Institute of Hygenic Sciences, Osaka Branch

6. REMARKS

**PLANT QUARANTINE**  
**(DISINFESTATION OF FRUIT FLIES)** 植物検疫 (ミバエ類殺虫技術)

**1. PERIOD**

May 25, 1989 to October 29, 1989 (5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Five (5)

**3. QUALIFICATIONS**

- 1) University graduates or having the equivalent academic background
- 2) Having experience in plant quarantine works and having sufficient knowledge about the pest such as fruit flies
- 3) Under forty (40) years of age
- 4) Having a sufficient command of spoken and written English

**4. DESCRIPTION OF TRAINING**

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|---|--|
| <ol style="list-style-type: none"> <li>1) Plant Quarantine in Japan</li> <li>2) <i>Morphology and Taxonomy of fruit flies</i></li> <li>3) Physiology and Ecology of fruit flies</li> <li>4) Artificial rearing of fruit flies               <ol style="list-style-type: none"> <li>(1) Outline of artificial rearing</li> <li>(2) Rearing of larva</li> <li>(3) Control of pupa</li> <li>(4) Rearing of adult</li> <li>(5) Egg collection</li> <li>(6) Data analysis</li> </ol> </li> <li>5) Disinfestation method of fruit flies (Outline)               <ol style="list-style-type: none"> <li>(1) Fumigation treatment</li> <li>(2) Cold treatment</li> <li>(3) Vapor heat treatment</li> </ol> </li> <li>6) Disinfestation test by vapor heat treatment and cold treatment               <ol style="list-style-type: none"> <li>(1) Outline of disinfestation test</li> <li>(2) Operation of treatment equipment</li> <li>(3) Inoculation of larvae into the fruit</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>(4) Findout the standard of vapor heat treatment</li> <li>(5) Data analysis</li> <li>7) Injury test fruit by vapor heat treatment and cold treatment               <ol style="list-style-type: none"> <li>(1) Outline of injury test</li> <li>(2) Injury experiment</li> <li>(3) Data analysis</li> </ol> </li> <li>8) Eradication of fruit flies               <ol style="list-style-type: none"> <li>(1) Principle of eradication method</li> <li>(2) Male annihilation method</li> <li>(3) Sterile insect release method                   <ol style="list-style-type: none"> <li>1 Suppression of the density of fruit flies</li> <li>2 Mass production</li> <li>3 Sterilization</li> <li>4 Release of sterile flies</li> <li>5 Discrimination between sterile flies and wild ones</li> </ol> </li> <li>(4) Eradication project of fruit flies in Japan</li> </ol> </li> <li>9) Make the report · Exercise</li> </ol> |
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**5. FACILITIES AND INSTITUTIONS**

- 1) Nara Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries
- 2) Fruit fly Eradication Project Office, Okinawa Prefectural Government
- 3) Okinawa International Centre (OIC), JICA

**6. REMARKS**

No. 129

SOIL ANALYSIS AND IMPROVEMENT 土壤分析改良

1. PERIOD

September 21, 1989 to December 24, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) University or college graduates or equivalent
- 2) Occupational experience
- 3) Qualified in their respective fields
- 4) Good working knowledge of English or Japanese

4. DESCRIPTION OF TRAINING

Lectures:

Method/classification of soil analysis  
Theory of soil reforming

Practices and Experiments:

Soil analysis and its classification  
Technics of soil reforming on farm land  
Soil analysis technics by computer system

Observation

Ten days study tour for related research centers and tropical research institute of Japan

5. FACILITIES AND INSTITUTIONS

Obihiro Industrial Technology Center  
Hokkaido National Agricultural Experiment Station  
Tokkachi Agricultural Experiment Station

6. REMARKS

PLANT GENETIC RESOURCES 植物遺傳資源

**1. PERIOD**

May 8, 1989 to July 22, 1989 (3 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**3. QUALIFICATIONS**

- 1) University graduates or the equivalent
- 2) Presently engaged in conservation or management of plant genetic resources
- 3) Under 45 years of age
- 4) Good working Knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Introduction
- 2) Exploration and collection of plant genetic resources
- 3) Germplasm preservation
- 4) Elimination of diseases and pests from genetic stocks
- 5) Information management
- 6) Individual training
- 7) Observations

**5. FACILITIES AND INSTITUTIONS**

- 1) National Institute of Agrobiological Resources (NIAR), Ministry of Agriculture, Forestry and Fisheries
- 2) Tsukuba International Centre, JICA

**6. REMARKS**

SUGARSPCANE CULTIVATION サトウキビ栽培

1. PERIOD

June 22, 1989 to February 25, 1990 (8 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Presently engaged in research work or extension services in the field of sugarcane cultivation
- 3) Under thirty-five (35) years of age
- 4) Having a sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

The course will be divided in to the following three groups

- 1) Subcourse A  
- Sugarcane Agronomy
- 2) Subcourse B  
- Soil and Fertilizer
- 3) Subcourse C  
- Sugarcane Insect Pests and its Control

5. FACILITIES AND INSTITUTIONS

- 1) Okinawa Prefectural Agricultural Experiment Station
- 2) Okinawa International Centre (OIC), JICA

6. REMARKS

No. 132

**EFFECTIVE UTILIZATION OF TROPICAL AGRICULTURE AND  
FORESTRY RESOURCE** 熱帯農林資源の有効利用

**1. PERIOD**

July 20, 1989 to March 26, 1990 (8 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Five (5)

**3. QUALIFICATIONS**

- 1) University graduates with more than three (3) years' research experience in their specialized field of training, or equivalent
- 2) Under forty (40) years of age
- 3) Have a sufficient command of spoken and written English

**4. DESCRIPTION OF TRAINING**

- 1) Subcourse A  
-- Technical applications to crop production
- 2) Subcourse C  
-- Effective utilization techniques of forest products and civiltulture

**5. FACILITIES AND INSTITUTIONS**

- 1) College of Agriculture, University of the Ryukyus
- 2) Okinawa International Centre (OIC), JICA

**6. REMARKS**

IRRIGATION AND DRAINAGE 灌溉排水

1. PERIOD

February 5, 1989 to November 24, 1989 (10 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

This course imparts the comprehensive technology of irrigation and drainage fields in order to improve the water management in terminals.

- 1) Lectures and practical training
  - Irrigation and Drainage (Irrigation planning, Drainage planning, Water resources development, etc.)
  - Structure and Construction (Dams, Headworks, Pipelines, etc.)
  - Practice (Surveying, Water Requirement in depth, etc.)
  - Experiments (Soil, Concrete, Hydraulics, etc.)
- 2) Observation Tours
  - Irrigation and Drainage Projects
  - Reclamation and Consolidation Projects
  - Dam Construction Projects
  - National Research Institute

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

IRRIGATION WATER MANAGEMENT 水管理

1. PERIOD

May 8, 1989 to November 25, 1989 (7 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalents
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 5 years
- 4) Between 30 to 40 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

This course transfers the intensive technology of irrigation water management by the use of mathematical model simulation.

- 1) Lectures and practical training
  - Design (Canal, Dams, Headworks, Pipeline, etc.)
  - Related subjects (Gate & Valve, Pump, Concrete, Economic evaluation, etc.)
  - Practice (Computer Programming, Water requirement in depth, etc.)
  - Experiment (Hydraulic model)
- 2) Observation Tours
  - National Research Institute
  - Canal Works
  - Water Management System

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

**1. PERIOD**

August 14, 1989 to November 4, 1989 (3 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Sixteen (16)

**3. QUALIFICATIONS**

- 1) Be presently engaged in the said field
- 2) University graduates or the equivalent academic background with occupational experience of more than 5 years
- 3) Under 45 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practical training
  - Outline of Japan's agriculture and land improvement project
  - Land reclamation and consolidation
  - Irrigation and Drainage System
  - Design criteria
  - Operation and maintenance facilities and water management
- 2) Observation tours
  - Present situation of agricultural land utilization and water resources development in Japan

**5. FACILITIES AND INSTITUTIONS**

- 1) Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries
- 2) The Japanese Institute of Irrigation & Drainage

**6. REMARKS**

1. PERIOD

March 15, 1990 to June 26, 1990 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- (1) be nominated by their government
- (2) be university graduates or have the equivalent academic background,
- (3) be presently engaged in either research or educational activity and have more than 2 years of occupational experience in this field,
- (4) be not more than forty years old,
- (5) have a sufficient command of spoken and written English,
- (6) be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the course.

4. DESCRIPTION OF TRAINING

• Lectures, Experiment and Fractical training

- (1) Natural environments of arid areas
- (2) Runoff analysis
- (3) River and groundwater engineering
- (4) Facilities of water storage and water supply
- (5) Water quality
- (6) Agricultural practice of arid areas
- (7) Irrigation and drainage
- (8) Water management
- (9) Water resources planning

• Study Visit

- (1) North Okinawa water resources development project,  
Minafuku underground dam (Okinawa prefecture)
- (2) Matano dam (Tottori prefecture)
- (3) Kiso river basin irrigation and drainage project  
(Aichi prefecture)
- (4) Farm of Hojo sand dune area  
(Tottori prefecture)

5. FACILITIES AND INSTITUTIONS

Tottori University

6. REMARKS

FARM MECHANIZATION 農業機械化

1. PERIOD

March 5, 1990 to November 24, 1990 (9 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or equivalents
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 27 and 40 years of age
- 5) A sufficient command of spoken & written English

4. DESCRIPTION OF TRAINING

- 1) Lecture and practical training
  - Farm mechanization: Effective introduction of farm machinery (inspection and selection), its utilization and systematic mechanized farming mainly connected with rice production
  - The related subject to mechanization: Rice cultivation, land consolidation, administration of mechanization and co-operative of farm machinery in Japan
  - Experiment on farm mechanization
- 2) Observation tours
  - Experimental and Research Institutes and other related organs

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

**AGRICULTURAL MACHINERY MAINTENANCE AND REPAIR** 農業機械整備

**1. PERIOD**

May 8, 1989 to November 24, 1989 (7 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**3. QUALIFICATIONS**

- 1) University graduates preferably Agricultural Engineers
- 2) Qualified in their respective fields
- 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 and practical training
  - Items relevant to maintenance and repair of agricultural machinery such as principle, structure, function, performance, method of testing, adjustment and inspection of various kinds of prime movers and agricultural machines
  - Fundamentals of mechanical engineering such as materials, machine elements, thermodynamics
  - Items related to agricultural machinery such as farm mechanization, its administrative policy in Japan, machinery utilization for rice cultivation as well as agricultural machinery production, inspection and management system
- 2) Observations

**5. FACILITIES AND INSTITUTIONS**

- 1) Member plants of Japan Farm Machinery Manufacturers Association and Other plants
- 2) Osaka International Training Centre, JICA (theoretical lectures)

**6. REMARKS**

FARM MACHINERY DESIGN 農業機械設計

1. PERIOD

February 5, 1989 to October 26, 1989 (9 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates from faculty of agricultural engineering or mechanical engineering
- 2) Qualified in their respective fields
- 3) Occupational experience of more than 3 years
- 4) Between 25 and 42 years of age
- 5) A sufficient command of spoken & written English

4. DESCRIPTION OF TRAINING

- 1) Lecture and Practical training
  - Design engineering: Machine design technology such as drawing & design of machine elements, its parts and simple farm machinery
  - Trial-make of simple farm machinery and its performance test
  - Materials: Physical properties of metallic
  - Strength of materials, and heat treatment of metal. Physical property of plant and soils.
  - Technology in common
- 2) Observation
  - Experimental and Research Institutes and other related organs

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

POST-HARVEST RICE PROCESSING 米のポストハーベスト研修

1. PERIOD

August 28, 1989 to November 27, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

- 1) University graduates or equivalents
- 2) Senior technical administrators in the government or the public organizations engaging in planning and promoting improvements of all post-harvesting process of rice such as paddy drying, storage, rice milling, etc.
- 3) Under 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Rice and food situation in Japan and in the world
  - Government policies and control system on rice and food in Japan
  - Pre-harvest methods and machinery
  - Drying and storage of rice and the role of agricultural co-operatives
  - Milling machines and rice mill planning and management
  - Quality of rice and its control
  - Rice and by-product utilizations
- 2) Observation tours of machine making factory

5. FACILITIES AND INSTITUTIONS

- 1) Ministry of Agriculture, Forestry and Fisheries
- 2) Japan Grain Inspection Association

6. REMARKS

**ANIMAL HUSBANDRY**



TECHNICAL EXPERTS ENGAGED IN DAIRY FARMING AND  
RELATED INDUSTRIES

酪農振興・検査技術

1. PERIOD

September 18, 1989 to December 12, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Be engaged in fields related to animal husbandry
- 3) Have a sufficient command of spoken and written English
- 4) Under 40 years of age

4. DESCRIPTION OF TRAINING

The purposes of the course are to train dairy specialists and technicians to be leaders in their fields by providing basic, practical knowledge about the techniques essential to strengthening dairy farming such as livestock health inspection techniques, sanitary methods and inspection techniques for maintaining meat and milk quality, etc., and to contribute to international relationships and the promotion of science.

5. FACILITIES AND INSTITUTIONS

Obihiro University of Agriculture and Veterinary Medicine

6. REMARKS

POULTRY PRODUCTION AND BREEDING TECHNOLOGY

鶏育種・生産技術

1. PERIOD

May 11, 1989 to September 23, 1989 (4.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of more than 2 years
- 3) Between 26 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Feeding management for layers and broilers
  - Breeding statistics
  - Hatching and brooding
  - Feed and composition
  - Artificial insemination
  - Poultry farm management
  - Poultry house and equipment
  - Hygiene
  - Inspection of quality and egg processing
  - Extension and education
  - Private poultry industry in Japan

5. FACILITIES AND INSTITUTIONS

- 1) Okazaki National Poultry Breeding Station, Ministry of Agriculture, Forestry and Fisheries (MAFF)
- 2) Poultry Research Institute, Aichi-ken Agricultural Research Centre
- 3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

ARTIFICIAL INSEMINATION FOR CATTLE 家畜人工授精

**1. PERIOD**

May 18, 1989 to October 16, 1989 (5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Six (6)

**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
  - Breeding of cattle
  - Feed management for dairy cattle
  - Artificial insemination
  - Embryo Transfer
  - General aspect of livestock industry
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

Fukushima National Livestock Breeding Station, Ministry of Agriculture, Forestry and Fisheries

**6. REMARKS**

EMBRYO TRANSFER FOR CATTLE 受精卵移植技術

1. PERIOD

July 24, 1988 to December 7, 1989 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Be university graduates or have the equivalent academic background;
- 2) Hold veterinarian's license, or artificial inseminator's license and have sufficient knowledge about artificial insemination by using rect-vaginal method and more than three years experience in practice;
- 3) Have a good command of English both spoken and written;
- 4) Be under forty (40) yeas of age in principle;

4. DESCRIPTION OF TRAINING

The purpose of the course is to provide the latest ET techniques in Japan for livestock breeding personnel in countries faced with the necessity of it, and ultimately to contribute to the progress of animal industry by the application and improvement of the techniques under their respective countries' condition.

The course provides basic theory and practical use of ET as well as its administration.

5. FACILITIES AND INSTITUTIONS

Hidaka National Livestock Breeding Station, Ministry of Agriculture, Forestry and Fisheries.

6. REMARKS

ANIMAL HEALTH RESEARCH 家畜衛生研究

**1. PERIOD**

May 22, 1989 to November 16, 1989 (6.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**3. QUALIFICATIONS**

- 1) Qualified veterinarians in principle
- 2) Technicians or researchers. High priority is given to those who serve in veterinary colleges or national central veterinary institutions.
- 3) Not more than 40 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practical training
  - Outline of animal husbandry and health administration in Japan
  - Bovine, swine, avian and other livestock diseases
- 2) Specialized study will be conducted according to the participants' individual requests at the laboratories of the National Institute of Animal Health.
- 3) Observation tours

**5. FACILITIES AND INSTITUTIONS**

- 1) National Institute of Animal Health (NIAH), Ministry of Agriculture, Forestry and Fisheries
- 2) Tsukuba International Centre, JICA

**6. REMARKS**



**FORESTRY**



**REFORESTATION TECHNIQUES AND FOREST MANAGEMENT** 森林造成技術者

**1. PERIOD**

July 10, 1989 to October 19, 1989 (3.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Fifteen (15)

**3. QUALIFICATIONS**

- 1) University graduates or equivalent
- 2) *Engaged in planning work in the governmental forestry organizations*
- 3) Occupational experience of more than 5 years
- 4) Under 40 years of age
- 5) Good working knowledge of English
- 6) Congenial to Japanese dishes because a part of training is given in the countryside

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practical training
  - Forestry planning, breeding, nursery practice, regeneration tree tending and forest conservation in Japan
  - Administration and management of the national forest in Japan
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

Forestry Agency, Ministry of Agriculture, Forestry and Fisheries

**6. REMARKS**

This course is not suitable for person presently being engaged in either research or educational activity.

**1. PERIOD**

August 14, 1989 to December 8, 1989 (3.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Nine (9)

**3. QUALIFICATIONS**

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

**4. DESCRIPTION OF TRAINING**

Lectures and practical training

Lectures:

Forestry and Forest Products in Japan, Present Situation and Level of Forest Products Research in Japan

Individual Studies:

Individual studies for 51 days will be given during the training period at one of the following divisions.

- (1) Forest Products Chemistry Division
- (2) Wood Technology Division
- (3) Wood Utilization Division

**5. FACILITIES AND INSTITUTIONS**

- 1) Forestry and Forest Products Research Institute, Ministry of Agriculture, Forestry and Fisheries
- 2) Tsukuba International Centre, JICA

**6. REMARKS**

Training Courses on Forestry and on Forest Products are provided every other year. In 1989, training course on forest products will be given.

FOREST SOIL 森林土壤

1. PERIOD

September 7, 1989 to December 11, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) University graduates with occupational experience more than 5 years in the field of forest soil research
- 2) Presently serving at forestry research organizations or universities
- 3) Under forty (40) years of age
- 4) Having a sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

- 1) Forest Soil Science
  - (1) General Description of Forest Soils
  - (2) Formulation, Classification and Distribution of Forest Soils
  - (3) Vegetation, Productivity and Water Conservation with Forest Soils
  - (4) Soils and Fertilizers for Forest Nursery
  - (5) Forest Soils in Okinawa
- 2) Investigation into Forest Soils
  - (1) Methods of Forest Soil Investigations (sampling and analysis)
  - (2) Soil Mapping and Utilization of Forest Maps
  - (3) Field Research and Investigations
- 3) Observation Tours

5. FACILITIES AND INSTITUTIONS

- 1) Forestry Agency, Ministry of Agriculture, Forestry and Fisheries
- 2) College of Agriculture, University of the Ryukyus
- 3) Japan Forest Technical Association
- 4) Okinawa International Centre (OIC), JICA

6. REMARKS



## FISHERIES



FISHERY COOPERATIVES 漁業協同組合

1. PERIOD

July 3, 1989 to December 18, 1989 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduate or equivalent
- 2) Fishery cooperative experience of more than 3 years
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures
  - Outline of fishery cooperatives, fish marketing, fisheries finance, fishery cooperative management, accounting of fishery cooperatives
  - Fisheries legislation, Fishery Cooperatives Law
  - Fisheries administration, Fisheries economics
  - Resource management
  - Other essential subjects related to fishing industry
- 2) Observation tours
  - Fishery cooperative associations
  - Fishing companies
  - Agriculture cooperatives
  - Fish markets
  - Fishermen's families
  - Fishing ports

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

COASTAL FISHING GEAR AND METHOD (PRACTICE) 沿岸漁具漁法 I (実技)

1. PERIOD

July 3, 1989 to December 18, 1989 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Sixteen (16)

3. QUALIFICATIONS

- 1) Senior high school graduates or equivalent
- 2) Fishery experience of more than 3 years
- 3) Under 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practice
  - Fishing gear and methods of coastal fisheries in Japan
  - On board training by training vessels
  - Fishing practice by commercial fishing boats
  - Net handling practice
  - Model net construction
  - Engine handling practice
- 2) Observation tours
  - Fishing ports
  - Fish markets
  - Fishing operations by commercial fishing boats
  - Fish processing plants
  - Fishing Net & Rope Mfg. Plants

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

COASTAL FISHING GEAR AND METHODS (INTENSIVE) 沿岸漁具漁法Ⅱ(専修)

1. PERIOD

January 8, 1990 to March 23, 1990 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Fishery experience of more than 3 years
- 3) Under 35 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practice
  - Net fishing gear and methods of coastal fisheries in Japan
  - Designing of net fishing gear fishing gear
  - Relation between fish behaviour and fishing gear
  - Model net fishing gear construction
  - Net forming experiment
- 2) Observation tours
  - Fishing ports
  - Fish market
  - Fisheries universities
  - Fishing operations by commercial fishing boats
  - Fishing Net & Rope Mfg. Plants
  - Fisheries experimental stations

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

GENERAL AQUACULTURE 養殖一般

1. PERIOD

January 8, 1990 to June 25, 1990 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) To be a university graduate or its equivalent
- 2) To have a previous experience in aquaculture or fisheries work over two (2) years
- 3) To be under thirty five (35) years of age
- 4) To have a sufficient command of English language
- 5) To have some assurance of being employed in aquaculture activities on the completion of training

4. DESCRIPTION OF TRAINING

- 1) Lecture
  - Introduction to fisheries in general
  - Aquaculture in general
  - Biological and chemical principles underlying the practice of aquaculture
  - Aquacultural engineering
- 2) Practice
  - Artificial insemination
  - Pituitary extraction and hormone injection
  - Living food organisms culture
  - Fish anatomy and histology
  - Feed analysis
  - Water quality analysis
- 3) Observation Tours
  - National and regional fisheries research laboratories
  - Prefectural fisheries experimental stations
  - Sea farming center
  - University of fisheries
  - Various types of private fish farms

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

The purpose of the training course is to impart general information or outline of aquaculture, and general principles of aquaculture techniques to those who are employed in aquaculture activities. Therefore, the course does not involve any specific species of organisms and techniques.

No. 153

**HULL AND ENGINE MAINTENANCE OF SMALL FISHING BOAT**

小型漁船の船体・機関保守

**1. PERIOD**

January 8, 1990 to June 25, 1990 (5.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Seven (7)

**3. QUALIFICATIONS**

- 1) Senior high school graduates or equivalent
- 2) Fishery boat or engine experience of more than 3 years
- 3) Under 40 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practice
  - Basic information about fisheries in Japan
  - Hull maintenance
  - Diesel engine and outboard engine
  - Marine auxiliaries
  - Knowledge and handling of FRP
- 2) Observation tours
  - Shipyards
  - Fishing ports
  - Marine engine factories
  - Marine engine operation by commercial fishing boats

**5. FACILITIES AND INSTITUTIONS**

Kanagawa International Fisheries Training Centre, JICA

**6. REMARKS**

PRAWN PROPAGATION TECHNIQUE エビ増養殖技術

1. PERIOD

February 26, 1990 to July 22, 1990 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- (1) Be nominated by their government
- (2) Be presently engaged either in practical production or research and have more than one year of occupational experience in this field,
- (3) Be junior college graduates or have the equivalent academic background,
- (4) Have a sufficient command of spoken and written English,
- (5) Be not more than thirty-five years of age,
- (6) Be in good health, both physically and mentally, be undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the course.

4. DESCRIPTION OF TRAINING

- (1) Biology of *Penaeus japonicus*
- (2) Seedling production of *Penaeus japonicus*
- (3) Technique of *Penaeus japonicus* culture
- (4) Aqua propagation in general
- (5) Seedling production of fishes and shellfishes
- (6) Aquaculture and sickness control
- (7) Aquaculture and management of water quality

5. FACILITIES AND INSTITUTIONS

Yamaguchi Prefectural Naikai Sea Farming Center

6. REMARKS

1. PERIOD

August 7, 1989 to November 28, 1989 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) Be nominated by their government in accordance with the procedures mentioned in B-2 below,
- 2) Be university graduates or have the equivalent academic background, and be experienced in business over 5 years,
- 3) Be presently engaged in either research or educational activity in fisheries,
- 4) Be not more than forty years old,
- 5) Have a sufficient command of spoken and written English,
- 6) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the course.

4. DESCRIPTION OF TRAINING

- 1) Lectures
  - Management of Water Quality
  - Fisheries Hydrography
  - Marine Botany and Planktology
  - Techniques in Preparing Seaweed Beds
  - Ichthyology
  - Seed Production for Marine Fish and Shellfish
  - Fisheries Engineering
  - Planning of Marine Ranch Systems
- 2) Observation tours
  - Seed Production Institute  
(Japan Farming Fisheries Center, Komoe in Kochi and Yashima in Takamatsu)
  - Marine Fish Culture Farm  
(Hyogo Prefectural Experimental Station)
  - Marine Ranching Field  
(Ohita Prefectural Experimental Station)

5. FACILITIES AND INSTITUTIONS

Usa Marine Biological Institute, Kochi University

6. REMARKS

1. PERIOD

February 5, 1990 to July 21, 1990 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Be senior engineers who graduated from universities, majoring in the faculty of fisheries in aquaculture, especially marine fish culture, or those who have the equivalent academic background.
- 2) Be nominated by their government in accordance with the procedures mentioned above.
- 3) Have a sufficient command of spoken and written English.
- 4) 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
  - Outline of Marine Fish Culture
  - Fish Physiology
  - Fish Nutrition and Diets
  - Seed Production
  - Cultural Ground Management
  - Fish Farming Technology
  - Fish Pathology
  - Engineering for Fish Culture
  - Marketing and Aquacultural Management
  - Live Fish Transportation
- 2) Practice
  - Culture of Living Foods
  - Seed Production of Sea Bream
  - Culture of Sea Bream and Yellow Tail
  - Preparation of Foods
  - Water Analysis
  - Fish Pathological Examination

5. FACILITIES AND INSTITUTIONS

Propulsion Conference of Nagasaki International Fisheries Training Affairs, Nagasaki City, Nagasaki Prefecture.

6. REMARKS

**1. PERIOD**

March 5, 1990 to June 22, 1990

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Five (5)

**3. QUALIFICATIONS**

1. Be university graduates or have the equivalent academic background
2. Be presently engaged in either research or educational activity and have more than 3 years of occupational experience in this field.
3. Be not more than forty years old.
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 course.

**4. DESCRIPTION OF TRAINING****1. Lectures, Experiment and Practical Training**

Principles of Acuaculture	Bacteriology
Fish Nutrition	Fish Pathology
Water Quality Management	Prevention of Epizootics in Fish
Fish Physiology	
Pathogenic Microbiology in Fish	Others

**2. Study visit****5. FACILITIES AND INSTITUTIONS**

Simonoseki University of Fisheries

**6. REMARKS**

No. 158

MARINE FOOD PROCESSING TECHNOLOGY 水産食品加工

1. PERIOD

October 2, 1989 to June 1, 1990 (8 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
  - Present situation of marine resources, Fishery industry and marine processing in Japan, Fish culture, Environmental engineering
  - 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 Centre, JICA
- 2) Public Research Institutions
- 3) Food processing Factories (Food Manufacturing Plants)
- 4) Yaizu Fishery High School

6. REMARKS

No. 159

FISH PROCESSING, MANAGEMENT, MARKETING, FISHERIES BUSINESS  
AND ECONOMICS

水産加工・流通・経営コース

1. PERIOD

March 12, 1990 to June 21, 1990 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

Applicants should:

- (1) Be nominated by their government in accordance with the procedure mentioned,
- (2) Be university graduates or have the equivalent academic background,
- (3) Be presently engaged and have more than three (3) years experience on guidance, research and educational activities in the field of fishery business administration and be expected to be working on their return in this field,
- (4) Be forty (40) years old or less,
- (5) Have a sufficient command of spoken and written English,
- (6) 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
  - Management and Economic of Fishery and Aquaculture
  - Distribution, Processing, and Consumption of Marine Product
  - Law and Policy Relevant to Fisheries Industry
  - Fisheries Cooperative Association
- (2) Practical Trainings
- (3) Observation Tours

5. FACILITIES AND INSTITUTIONS

- (1) Propulsion Conference of Nagasaki International Fisheries Training Center
- (2) Nagasaki Prefectural Nagasaki Fisheries Experimental Station

6. REMARKS



**MINING AND MINERALS**



GROUNDWATER RESOURCES DEVELOPMENT

地下水資源開発

1. PERIOD

June 29, 1989 to October 26, 1989 (4 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) Under 35 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1. Basic subjects
  - 1) Groundwater hydrology
  - 2) Physical properties of water
2. Applied subjects
  - 1) Investigations and data analysis related to groundwater development
  - 2) Importance of groundwater management
3. Observations
  - 1) Water resources around a volcano
  - 2) Salt water intrusion along the coast
  - 3) New facilities related to hydrology
4. Individual study (2 months)  
Specific subject  
such as            salt water intrusion  
                      land subsidence  
                      groundwater pollution  
                      hydrologic cycle  
                      socio-economic hydrology

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 8, 1989 to December 11, 1989 (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 10, 1989 to November 1, 1989 (3 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**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**

1. PERIOD

February 26, 1990 to May 26, 1990 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

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
  - Explosion Proof
  - Dust Measurement
  - Explosives and Blasting etc.
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

## MINERAL PROCESSING AND METALLURGY 選鉱製錬

**1. PERIOD**

July 31, 1989 to August 9, 1990 (12.5 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)
  - 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

**5. FACILITIES AND INSTITUTIONS**

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

**6. REMARKS**

Japanese language lesson is also offered in this course.

SEPARATION AND REFINEMENT OF UNUTILIZED  
MINERAL RESOURCES 未利用資源(鉱物)の分離精製

1. PERIOD

March 1, 1990 to June 30, 1990 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University or collage graduates, hopefully with M. A. degree
- 2) Occupational experience in research job of more than 3 years
- 3) Qualified in their respective fields
- 4) Under 35 years old of age
- 5) Good working knowledge of English or Japanese

4. DESCRIPTION OF TRAINING

Lectures:

Introductory lectures in the separation and refining techniques for one week, then the participants are allocated to the individual fields listed below and necessary additional lectures are given in each field.

Individual Studies:

Individual studies are given in the following two fields for 3.5 months.

- i) Mineralogical research and mineral processing for none sulfide ores (2 persons)
- ii) New hydrometallurgical technologies to separate or to refine rare metals using chemical separation procedures (3 persons)

5. FACILITIES AND INSTITUTIONS

- 1) Government Industrial Research Institute, Tohoku
- 2) Special rental hotel near the Institute will be arranged.

6. REMARKS

- 1) This course is aimed at M.A.-Ph. D. level of OJT (On the Job Training), so that a small research subject will be given to each participant.
- 2) The participants are expected to send publications, if any, to the host Institute in advance.

**INDUSTRY**



SMALL INDUSTRY DEVELOPMENT SEMINAR 中小工業開発セミナー

1. PERIOD

June 29, 1989 to July 30, 1989 (1 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Senior administrative officials in charge of implementation and/or planning of small industry development
- 3) Occupation experience of more than 7 years
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture and discussions
  - General Environment for Small Industry
    - a) Economic Situation
    - b) Political Situation
    - c) Social & Cultural Conditions
    - d) Development Policies
  - Japanese Case Study
    - a) Financing
    - b) Tax and Credit
    - c) Management
    - d) Technology
    - e) Human Resources
  - International Comparative Study
    - a) Ancillarization
    - b) Rural Industrialization
    - c) Export-Oriented Industrialization
    - d) Institutional Set-ups  
(Industrial Estate, Cooperative)
  - Policy Making Practice
- 2) Observation Tours

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Special Faculty Committee for Small Industry Development Seminar

6. REMARKS

Senior class seminar

**1. PERIOD**

January 8, 1990 to March 26, 1990 (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 businesses, especially particulars of development of smaller businesses and practices in financing, grouping, structural improvement and managerial/technical guidance
- 2) Observations

**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 6, 1989 to September 23, 1989 (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) Lectures and Discussions:
  - System & measures for small industries promotion in Japan
  - Basic understanding of business management
  - Techniques & methods of business diagnosis
  - Program implementation & training
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

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

**6. REMARKS**

**1. PERIOD**

June 22, 1989 to September 3, 1989 (2.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Fifteen (15)

**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)
- 3) Tokyo International Centre (Hatagaya), JICA

**6. REMARKS**

INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL (SEMINAR) (SENIOR SEMINAR)

工業標準化・品質管理シニアセミナー

1. PERIOD

November 5, 1989 to November 24, 1989 (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

**1. PERIOD**

June 1, 1989 to December 15, 1989 (7 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 individual studies
  - 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 Federaton
- 3) Tsukuba International Centre, JICA

**6. REMARKS**

CERTIFICATION SYSTEMS 認証検査制度

1. PERIOD

January 8, 1990 to March 8, 1990 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or 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)
- 4) Tokyo International Centre (Hatagaya), JICA

6. REMARKS

INDUSTRIAL PROPERTY SYSTEM 工業所有權制度

1. PERIOD

August 24, 1989 to October 21, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

- 1) University graduates or 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)
- 3) Tokyo International Centre (Hatagaya), JICA

6. REMARKS

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

**1. PERIOD**

May 6, 1989 to May 31, 1988 (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 investive 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 patents in transfer of technology
  - Consultation and agential activities
  - The use and economic value of patents
- 2) Practical 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**

**1. PERIOD**

January 8, 1990 to March 26, 1990 (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) Be under 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 (GIRIO)
- 2) Osaka International Training Centre, JICA

**6. REMARKS**

No. 176

POLYMER MATERIALS AND TECHNOLOGY COURSE 高分子材料工学

1. PERIOD

September 7, 1989 to December 25, 1989 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

1. be nominated by their government
2. be university graduates majoring in organic chemistry or organic industrial chemistry, polymer chemistry or chemical engineering or have equivalent knowledge
3. have at least 3 years of experience in production, test, research, application or development in organic chemical industry or polymer industry
4. between 25 years and 35 years of age
5. have a sufficient command of spoken and written English or Japanese
6. be in good health, both physically and mentally, to undergo the course of training. Pregnancy is regarded as a disqualifying condition

4. DESCRIPTION OF TRAINING

Lectures, practices and observations concerning production techniques of high performance, high functional polymer materials; molding techniques of high performance polymer materials; application techniques of functional polymer materials; characterization techniques of polymer materials; testing and evaluation techniques of polymer materials

5. FACILITIES AND INSTITUTIONS

Osaka Municipal Technical Research Institute

6. REMARKS

No. 177

ORGANIC FINE-CHEMICALS TECHNOLOGY COURSE 有機ファインケミカルズ工学

1. PERIOD

August 31, 1989 to December 25, 1989 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

1. be nominated by their government
2. be university graduates majoring in organic chemistry or organic industrial chemistry, or have equivalent knowledge
3. have at least 3 years of experience in production, application, or research work in organic chemical industry
4. be under 35 years of age
5. have a sufficient command of spoken and written English or Japanese

4. DESCRIPTION OF TRAINING

Lectures, practices and factory observations on compounding techniques, application techniques of organic finechemicals, preventive measures against environmental pollution, handling techniques of analytical instruments

5. FACILITIES AND INSTITUTIONS

Osaka Municipal Technical Research Institute

6. REMARKS

APPLICATION TECHNOLOGY FOR HIGH TEMPERATURE REFRACTORIES

高温構築材技術

1. PERIOD

September 21, 1989 to March 11, 1990 (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 and evaluation of raw materials
  - Trial manufacturing of bricks
  - Application technology for industrial furnaces
- 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

DEVELOPMENT AND APPLICATION TECHNOLOGY FOR  
POTTERY AND PORCELAIN 陶磁器開発活用技術

**1. PERIOD**

May 11, 1989 to October 29, 1989 (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
  - Raw materials  
Analysis, preparation, treatment, evaluation
  - Specialized knowledge  
pottery & porcelain wares
  - Proper techniques  
pottery & porcelain wares
  - Solution of technical problems  
calculation needed for the above  
prevention of defective products
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

- 1) Nagoya International Training Centre (NITC), JICA
- 2) Government Industrial Research Institute, Nagoya
- 3) Tajimi City Pottery Design and Technical Centre
- 4) Institute for Comparative Pottery, Chykyo Junior College
- 5) Ceramic Industries

**6. REMARKS**

CERAMIC BUILDING MATERIAL TECHNOLOGY

セラミック建材技術

**1. PERIOD**

September 21, 1989 to March 11, 1990 (6 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
  - Glaze preparation
  - Kiln and firing
  - Quality control
  - Execution of works
  - Other related materials
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

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

**6. REMARKS**

**1. PERIOD**

January 18, 1990 to March 1, 1990 (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 observation 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**

**1. PERIOD**

April 6, 1989 to October 2, 1989 (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 35 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and experimental training
  - Purification of enzymes
  - Properties of enzyme
  - Study of enzymes
  - Application of enzymes
  - Selective topics
- 2) Observation tours

**5. FACILITIES AND INSTITUTIONS**

Osaka Municipal Technical Research Institute (OMTRI)

**6. REMARKS**

**1. PERIOD**

September 4, 1989 to September 3, 1990 (12 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Eight (8)

**3. QUALIFICATIONS**

- 1) University graduates or equivalent in the field of chemical technology
- 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) Characterization of Involatile Compounds by Mass Spectrometry
  - (2) Techniques of the Measurement and Analytical Methods of  $^1\text{H}$  and  $^{13}\text{C}$  NMR Spectra for Organic Compounds
  - (3) Synthetic Organic Chemistry-Homogeneous Catalysis
  - (4) Organic Photochemistry-Applications of Photochemistry to Chemical Industry
  - (5) Application and Characterization of Polymer
  - (6) Synthesis of Zeolites and their Characterization
  - (7) Characterization of Catalyst
  - (8) Hydrocracking of Heavy Oils
  - (9) Preparation and Characterization of Catalysts for Syngas Chemistry
  - (10) Chemistry on Bioactive Materials-Synthesis and Activity Measurement
  - (11) Oil and Fat Chemistry-Analysis and Utilization of Lipids
  - (12) Oil and Fat Chemistry - The production of Specific Lipid by Cultivation of Fungi
  - (13) Photochemistry and Environmental Protection Study
  - (14) Genetic Engineering-Gene Expression in Yeast

- Remarks: 1. Introduction for the above themes is shown at Appendix.  
2. Applicants can choose three themes from the above with indication of priority order.  
3. Capacity of participants in each theme is in principle only one.

**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

August 31, 1989 to February 25, 1990 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. PERIOD

- 1) have master's degree or be equivalent with scientific experience of more than two years after university graduation.
- 2) be engaged in surface chemistry, applied chemistry, industrial chemistry, materials chemistry, catalytic science, electrochemistry or related fields.
- 3) have a good command of spoken and written English
- 4) preferably be under 40 years old
- 5) be in good health, both physically and mentally, to pursue the study. Proficiency is regarded as disqualified.

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

**1. PERIOD**

September 7, 1989 to March 11, 1990 (6 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
  - High technology in materials
  - Moulding high technology
  - Advanced melting technology
  - Modern casting design
  - Equipment modernization
- 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**

**1. PERIOD**

April 13, 1989 to September 23, 1989 (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/or Practical Training  
- Ni, Cr, Zn coat, Al-anodizing, phosphating  
Plasma surface modification  
Physical, chemical vacuum vapour deposit  
Surface functionizing for electronics  
Modification for composite, new materials  
Surface modification for super conductive materials  
*Theory and practice of corrosion*  
Waste water treatment & recycling  
Related high technology
- 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**

**1. PERIOD**

September 21, 1989 to March 11, 1990 (6 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Eight (8)

**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
  - Advanced cutting technology & its new materials
  - Electronic control metal works
  - NC programming & metal works
  - CAD & CAM technology
  - Factory automation
  - 3-dimensional precision measurement
- 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**

1. PERIOD

July 13, 1989 to December 15, 1989 (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) 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
  - Welding mechanics and design
  - Welding metallurgy and materials
  - Welding process and equipment
  - Welding of ferrous and non-ferrous metals
  - Testing and inspection of weldments and quality assurance
  - Applications and others
- 2) Observation tours and practice in industries, research institute and educational facilities
- 3) Individual training

5. FACILITIES AND INSTITUTIONS

- 1) Nagoya International Training Centre (NITC), JICA
- 2) The Japan Welding Engineering Society

6. REMARKS

ARC FURNACE AND CONTINUOUS CASTING CONTROL TECHNOLOGY

電炉連铸管理技術

1. PERIOD

November 9, 1989 to March 11, 1990 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in metallurgical 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
  - Introduction of current situation of electrical steel making in Japan
  - Management of electrical furnaces, dissolution method, material control
- 2) Observation tours
  - Control techniques of arc furnace melting
  - Control techniques of continuous casting
  - Other related techniques

5. FACILITIES AND INSTITUTIONS

- 1) Aichi Steel Works, Ltd.
- 2) Chubu Steel Plate Co. Ltd.
- 3) Topy Industries Ltd.
- 4) Daido Steel Corporation
- 5) Government Industrial Research Institute, Nagoya
- 6) Nagoya International Training Centre (NITC), JICA

6. REMARKS

PROPERTIES AND TESTINGS OF STEEL PRODUCTS 鋼材の性質と試験検査

1. PERIOD

July 31, 1989 to November 17, 1989 (3 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

**1. PERIOD**

March 8, 1990 to June 15, 1990 (3.5 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 (not academic researchers)
- 4) Between 35 years of age
- 5) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practical training
  - 1 Basic Knowledge
    - a. Metallic Materials
    - b. Fundamentals of Heat Treatment
    - c. Heat Treatment Equipment
  - 2 Heat Treatment of Steel and Iron
    - a. Structural Steel
    - b. High Speed Steel
    - c. Alloyed Tool Steel
    - d. Case Hardening
  - 3 Related Technologies
    - a. Related Technologies
    - b. Quality Control
    - c. Technical Meeting
- 2) Observation Tours

**5. FACILITIES AND INSTITUTIONS**

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

**6. REMARKS**

No. 192

**PROCESS ENGINEERING FOR PRODUCTION MANAGERS**

生産工程管理技術

**1. PERIOD**

September 21, 1989 to March 11, 1990 (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 production management industrial engineering, etc.
- 4) Under 45 years of age
- 5) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and practical training
  - Introduction of production engineering
  - Selection of materials for jigs & fixtures, and heat treatment
  - Practical knowledge of jigs and tools designing
  - Process design for product manufacturing
  - Application of tool engineering to process improvement
  - Practical factory management in Japan
  - Methods for productivity improvement
  - Integrated production system
- 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 11, 1990 to December 22, 1990 (11 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

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 11, 1989 to August 7, 1989 (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**

D'ENTRETIEN ET DE REPARATION DE  
L'EQUIPEMENT DE CONSTRUCTION 建設機械整備（仏語）

1. **Durée**

Du 28 septembre 1989 au 21 décembre 1989 (3 mois)

2. **Nombre de participants à recevoir**

Huit (8)

3. **Qualifications**

- 1) Etre titulaire de diplôme universitaire ou équivalent avec plus de trois ans d'expérience professionnelle
- 2) Etre engagé actuellement ou dans l'avenir dans le service de planification et d'administration dans le domaine de l'équipement de construction
- 3) Etre âgé de moins de 40 ans
- 4) Bonne connaissance de la langue française pour le travail

4. **Nature de formation**

- 1) Cours théoriques
  - Planification de travail de construction mécanisé et utilisation d'équipements de construction
  - Fonctionnement, structure, performance d'équipements de construction
  - Entretien, réparation, inspection et dépiéage de pannes d'équipements de construction
  - Planification, disposition, contrôle de pièces et d'outillage ainsi que gestion d'atelier de réparation
- 2) Travaux pratiques
  - Pratique fondamentale = Moteur, Embayage, Boîte de vitesses, Différentiel etc.
  - Pratique spécialisée = Bulldozer, Scraper, Niveleuse, Excavatrice, Grue

5. **Etablissements et institutions**

- 1) Centre International de Formation de Hachioji, JICA
- 2) Association Japonaise de Mécanisation de Construction

6. **Remarques**

Le Cours s'effectuera en français ou par la traduction du japonais en français

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

1. **Durée**

Du 4 janvier 1990 au 24 mars 1990 (3 mois)

2. **Nombre de participants à recevoir**

Douze (12)

3. **Qualifications**

- 1) Formation qualifiée dans leur domaine concerné
- 2) Expérience professionnelle de plus de 3 ans dans le domaine de l'entretien et la réparation de véhicules diesel
- 3) Age entre 25 et 40 ans
- 4) Bonne connaissance de la langue française pour le travail

4. **Nature de formation**

- 1) Cours et pratique  
- Connaissances de base sur le mécanisme et le fonctionnement de véhicules diesel
- 2) Voyage d'études

5. **Etablissements et institutions**

- 1) Centre International de Formation de Hachioji, JICA
- 2) Hino Motors S. A.

6. **Remarques**

Le Cours s'effectuera en français ou par la traduction du japonais en français.

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

1. PERIOD

July 31, 1989 to December 9, 1989 (4.5 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**

October 5, 1989 to February 3, 1990 (4 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Seven (7)

**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 then 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**

1. PERIOD

September 4, 1989 to December 22, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Have been engaged as an engineer 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 Centre -- Nogata

6. REMARKS

No. 200

MAINTENANCE MANAGEMENT 保全管理

1. PERIOD

Feb. 19, 1990 to June 30, 1990 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

12 or less

3. QUALIFICATIONS

- i) University graduate or equivalent
- ii) More than 5 years' occupational experience of plant maintenance
- iii) 40 years old or less
- iv) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- i) Lectures and practical trainings maintenance management in the *Kyushu International Center*
- ii) Study in several companies about plant maintenance activities
- iii) Study in several companies related to maintenance activity
- iv) Observation tours

5. FACILITIES AND INSTITUTIONS

Kurosaki Refractories Co., Mitsubishi Kasai Corp., Nippon Steel, Yawata Works, Nissan Motor Co., Sumitomo Metal Industries and other several Companies.

6. REMARKS

DESIGN & PRODUCTION OF SPARE PARTS FOR MAINTENANCE

保全用部品設計製造

1. PERIOD

November 27, 1989 to April 16, 1990 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) University graduates or the equivalent
- 2) Have been engaged as an engineer for 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

No. 202

DESIGN, MANUFACTURING, AND MAINTENANCE  
OF INDUSTRIAL EQUIPMENT 産業機械の設計・製造・保全

1. PERIOD

Feb. 12, 1990 to July 5, 1990 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

12 or less

3. QUALIFICATIONS

- i) University graduate or equivalent
- ii) 3 years' occupational experience on design, manufacturing or maintenance of industrial equipment
- iii) 40 years old or less
- iv) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- i) Lectures, practical trainings on design, manufacturing, maintenance engineering in the Kyushu International Center and practical design training in companies.
- ii) Study on the factory floors
- iii) Observation tours

5. FACILITIES AND INSTITUTIONS

Kyushu Institute of Technology, Hamada Heavy Industry, Nippon Steel, Machinery & Plant Div., and other several factories.

6. REMARKS

AIR-CONDITIONING ENGINEERING 空調技術

1. PERIOD

August 17, 1989 to November 30, 1989 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- (1) be nominated by their governments in accordance with the procedures mentioned in B-2 below,
- (2) be graduated from university majoring in the field of mechanical engineering or electrical engineering,
- (3) have experience of at least 3 years in air-conditioning engineering including system layout,
- (4) have a sufficient command of spoken and written English,
- (5) be under forty (40) years of age,
- (6) be in good health, both physically and mentally, to undergo the course of training. Pregnancy is regarded as a disqualifying condition for participation in the training.

4. DESCRIPTION OF TRAINING

Lectures, practices on air-conditioning systems in general. Observation at manufacturing plants and construction sites. The course is intended for upgrading knowledge and techniques of experienced administrative engineers.

5. FACILITIES AND INSTITUTIONS

Sakai Plant, Daikin Industries, Ltd.  
1304, Kanaoka-cho,  
Sakai, Osaka, Japan

6. REMARKS

No. 204

OIL HYDRAULIC AND ITS APPLICATION 油圧システムの設計・保全

1. PERIOD

Jan. 29, 1990 to June 21, 1990 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

12 or less

3. QUALIFICATIONS

- i) University graduate or equivalent
- ii) More than 3 years' occupational experiences in the field of designing, manufacturing, operating or maintenance associated with oil hydraulics
- iii) who has a definite requirement for an oil hydraulic engineer as a proceeding assignment

4. DESCRIPTION OF TRAINING

- i) Lectures on the basic matters and its application in oil hydraulics
- ii) Practices with various hydraulic products and its systems
- iii) Observation tours to typical industrial applications

5. FACILITIES AND INSTITUTIONS

Mitsubishi Heavy Industries, Shimonoseki Ship Yard, Nippon Steel, Yawata Works, Japan Casting, and Forging Corp., Mitsubishi Nagasaki Machinery Manufacturing Corp., hydraulic Unit Manufacturers, & several companies.

6. REMARKS

No. 205

**INSPECTION AND TESTING TECHNIQUES FOR HOUSEHOLD  
ELECTRICAL APPLIANCES** 電気製品検査技術

**1. PERIOD**

September 28, 1989 to December 6, 1989 (2.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Five (5)

**3. QUALIFICATIONS**

- 1) Working for government inspection organizations or public institutions
- 2) University graduates, or the equivalent
- 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
  - Introduction to Export Inspection System
  - Summary of Sampling Inspection Method
  - Outline of Japanese Legal Requirements
- 2) Lectures and practical training
  - Technology transfer (fundamental techniques) of inspection & testing for General Electric Heaters, Illuminators, General Communication Equipment, Washing Machine, Electric fan, etc.
  - Introduction of knowledge about testing equipment
- 3) Observation tour
  - Private Enterprises

**5. FACILITIES AND INSTITUTIONS**

- 1) International Trade and Industry Inspection Institute, Ministry of International Trade and Industry (ITI)
- 2) Japan Machinery and Metals Inspection Institute (JMI)
- 3) Japan Electrical Testing Laboratory (JET)

**6. REMARKS**

HIGH TECHNOLOGY MATERIALS APPLICATION

ファインセラミックス応用

1. PERIOD

September 21, 1989 to December 15, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of more than 3 years
- 3) Between 26 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Resisting materials for wear, corrosion, chemicals etc.
  - Functional materials for photochemical, electromagnetic etc.
  - Superconductive materials
  - Application technology for other high technology materials
  - Application technology for future materials

5. FACILITIES AND INSTITUTIONS

- 1) Japan Fine Ceramics Center
- 2) Government Industrial Research Institute, Nagoya
- 3) Universities and public institutes
- 4) Related industries

6. REMARKS

1. PERIOD

April 13, 1989 to August 13, 1989 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Be presently engaged in the production of the textile industry with 5 years experience of management in production
- 3) Between 27 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Textile industry in economical viewpoint
  - Fiber testing method
  - Spinning & weaving, warping & sizing, winding, and dyeing & finishing machines
  - Spinning & weaving plants
  - Production control
- 2) Observation tours

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

## 1. PERIOD

August 14, 1989 to November 13, 1989 (3.5 months)

## 2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

## 3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields
- 3) 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 2 groups) . . . . . one week  
 These will cover the following topics:  
 \* History of fibres and polymeric materials  
 \* Utilization of natural fibres  
 \* Structure and properties of fibres  
 \* Dyeing, finishing and testing of textiles  
 \* Computer application to textile processes  
 \* Development of synthetic polymers  
 \* Processing of properties of polymers  
 \* Industrial application of polymers  
 \* Textile processes, e.g., spinning
- 2) Individual studies . . . . . six weeks
  - a. Textile Processing
  - b. Dyeing/Finishing Process
  - c. Synthesis of Polymers
  - d. Modification of Polymers
  - e. Processing/Physical Properties of Polymeric Materials
  - f. 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

No. 209

**INSPECTION AND TESTING TECHNIQUES FOR  
TEXTILE PRODUCTS** 繊維製品検査技術

**1. PERIOD**

January 15, 1990 to March 15, 1990 (2 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Five (5)

**3. QUALIFICATIONS**

Applicants should:

- 1) belong to Government Inspection Organizations or Public Institutions
- 2) be college graduates or equivalent
- 3) have occupational experience of more than 3 years
- 4) be between 25 and 40 years of age
- 5) have good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures
  - Introduction to Export Inspection System
  - Outline of Japanese Legal Requirements
- 2) Lectures and Practical Training
  - *Technical transfer (fundamental techniques) of inspection & testing for Textile Products*
  - Introduction of knowledge about testing equipment
- 3) Observation tour
  - Private Enterprises

**5. FACILITIES AND INSTITUTIONS**

- 1) International Trade and Industry Inspection Institute, Ministry of International Trade and Industry (III)
- 2) Designated Inspection Organizations

**6. REMARKS**

No. 210

WOOD BASED MATERIALS APPLICATION TECHNOLOGY

木質材料高度利用技術

1. PERIOD

September 21, 1989 to December 15, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Occupational experience of more than 5 years
- 3) Between 28 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Wood resources and their utilization
  - Production technology of improved woods
  - Wood based materials and surface finishing technology
  - Wood based materials and adhesive agents
  - Research and development for wood based materials processing

5. FACILITIES AND INSTITUTIONS

- 1) Forestry Agency
- 2) Universities and public institutes
- 3) Related industries

6. REMARKS

## COIN AND DECORATION MANUFACTURE 貨幣勳章製造

### 1. PERIOD

Not conducted in 1989

### 2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

### 3. QUALIFICATIONS

- 1) Technical high school graduates or equivalent
- 2) Engaged in coin and decoration manufacture, and have occupational experience of not less than three years
- 3) Under 35 years of age
- 4) Good working knowledge of English

### 4. DESCRIPTION OF TRAINING

The following major subjects will be covered in the course

1. Orientation
2. Japanese Language
3. Lectures and observations

(1) Introduction to Mint Bureau

- (2) Coin Manufacture
- Melting and Casting
  - Rolling
  - Blanking
  - Coining
  - Inspection

(3) Decoration and Engraving

(4) Metal Analysis and Precious Metal Refining

(5) Supplementary study

4. Country Report by participants
5. Specialized Training
6. Observations and Study Tour

### 5. FACILITIES AND INSTITUTIONS

Mint Bureau, Ministry of Finance

### 6. REMARKS

The course will be conducted in 1990  
(The course is conducted every other year)

No. 211

INDUSTRIAL DESIGN (INDUSTRIAL PRODUCTS)

インダストリアル・デザイン (工業製品)

1. PERIOD

September 18, 1989 to December 1, 1989 (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 Industrial Design
  - Technology
  - Advertising
  - Design Process
  - Marketing
  - Case Study
- 3) Study Visits
- 4) Practical Training
  - Industrial 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) The Japan Industrial Designers' Association (JIDA)

6. REMARKS

There are three subjects in this course as are mentioned below, and one of these subjects in order will be implemented every fiscal year.

- (i) Industrial design (Industrial Products)
- (ii) Package design (Package of Foods and General Goods)
- (iii) Interior design (Furniture, Space)

**1. PERIOD**

August 28, 1989 to October 22, 1989 (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 Packaging Institute (JPI)  
Tokyo International Centre (Hatagaya), JICA

**6. REMARKS**

1. PERIOD

September 25, 1989 to August 25, 1990 (11 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) Be post-doctoral researchers in the field of mining and industrial technology
- 2) Under 35 years of age
- 3) Have a sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

- 1) Lectures and Individual Studies
  - Development of a precise wavelength-meter and wavelength measurement of pulsed lasers
  - Study on environment recognition using stereo vision and human characteristics in man intelligent machine systems
  - Tribochemical reaction and mechanism of action of lubricating oil
  - Synthesis and characterization of inorganic super conducting material
  - Preparation and characterization of catalysts for syngas chemistry
  - Separation of bio-products derived from plants by membrane processes
  - Research on new bioactive material
  - Research on mechanism of melange formation, etc.
- 2) Observations
  - To related institutions

5. FACILITIES AND INSTITUTIONS

- 1) National Research Laboratory of Metrology, Agency of Industrial Science and Technology (AIST), Ministry of International Trade and Industry (MITI)
- 2) Mechanical Engineering Laboratory, AIST, MITI
- 3) National Chemical Laboratory for Industry, AIST, MITI, etc.

6. REMARKS



**ENERGY**



No. 214

ENERGY MANAGEMENT エネルギー管理

1. PERIOD

Jan. 15, 1990 to May 20, 1990 (4 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

12 or less

3. QUALIFICATIONS

- i) University graduate for equivalent
- ii) More than 3 years' occupational experience in energy management
- iii) 40 years old or less
- iv) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- i) Lectures, practical trainings on energy management both in the Kyushu International Center and adjacent factor floors
- ii) Observation tours

5. FACILITIES AND INSTITUTIONS

Kyushu Institute of Technology, Kitakyushu Industrial Institute, Kurosaki Refractory Co., Mitsubishi Kasei Corp., Nippon Steel, Yawata Works, and other several companies.

6. REMARKS

ENERGY CONSERVATION 省エネルギー

1. PERIOD

October 16, 1989 to December 6, 1989 (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)
- 3) Tokyo International Centre (Hatagaya), JICA

6. REMARKS

No. 216

**HYDRO-ELECTRIC POWER ENGINEERING**  
**(Electrical/Mechanical Engineering) 水力発電**

**1. PERIOD**

May 29, 1989 to July 19, 1989 (2.0 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Nine (9)

**3. QUALIFICATIONS**

- (1) be civil engineers or electrical and/or mechanical engineers who are presently employed at governmental institutions or private companies in the field of electric power supply,
- (2) be technical college graduates or equivalent and have more than three (3) years of practical experience,
- (3) be under forty five (45) years of age,
- (4) have sufficient command of spoken and written 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 Industry
  - Manufacturers of Equipments related to Electric Power Industry

**5. FACILITIES AND INSTITUTIONS**

- 1) Japan Electric Power Information Center
- 2) Electric Power Development Co., Ltd.
- 3) Agency of Natural Resources and Energy, Ministry of International Trade and Industry
- 4) Tokyo International Centre (Hatagaya), JICA

**6. REMARKS**

No. 217

THERMAL-ELECTRIC POWER ENGINEERING 火力發電

1. PERIOD

May 29, 1989 to July 19, 1989 (2.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- (1) be electrical and/or mechanical engineers presently employed at governmental institutions or private companies in the field of electric power generation and have more than three (3) years of occupational experience in this field.
- (2) be technical college graduates or have the equivalent academic background,
- (3) have a sufficient command of spoken and written English,
- (4) be under forty-five (45) years of age

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

6. REMARKS

No. 218

COAL-FIRED THERMAL POWER ENGINEERING (OPERATION  
AND MAINTENANCE) 石炭火力発電

1. PERIOD

October 5, 1989 to December 1, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Technical college graduates or equivalent
- 2) Qualified in their respective fields (Electrical and mechanical engineers)
- 3) Occupational experience of more than 7 years
- 4) Between 30 and 45 years of age
- 5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lectures and practical training
  - Japanese electric power policy
  - Power system management
  - Construction, operation and maintenance of coal-fired thermal power station
  - Countermeasures for environmental preservation
- 2) Observation tours
  - Various types of power station
  - Coal-fired thermal power stations
  - Manufacturers of equipment related to Coal Fired Thermal Power Industry

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Centre, Inc.
- 2) Electric Power Development Co., Ltd.

6. REMARKS

NUCLEAR POWER GENERATION 原子力発電

1. PERIOD

January 15, 1990 to March 23, 1990 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Qualified in their respective fields (nuclear, electrical and/or mechanical engineers presently employed)
- 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
  - Introduction
  - Characteristic features of nuclear power plant
  - Construction
  - Operation/safety management
  - Nuclear fuel cycle
- 2) Visits and observation tours
  - Nuclear power stations
  - Manufacturing plants

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric power Information Centre, Inc. (JEPIC)
- 2) The Japan Atomic Power Company (JAPC)
- 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 17, 1989 to October 29, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

- 1) University graduates or equivalent
- 2) Managerial position in electric power industry with 10 year working experience
- 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

5. FACILITIES AND INSTITUTIONS

- 1) Japan Electric Power Information Centre, 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 4, 1989 to November 17, 1989 (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 5 years
- 4) Between 25 and 35 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) Agency of Natural Resources and Energy, Ministry of International Trade and Industry
- 2) Japan Electric Power Information Center, Inc.
- 3) Kansai Electric Power Co., Inc.

**6. REMARKS**

**1. PERIOD**

October 2, 1989 to December 15, 1989 (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, Tokyo (Tsukuba etc.) & Kyushu

**5. FACILITIES AND INSTITUTIONS**

- 1) Hakozaki (Main) Camps, Faculty of Engineering and Faculty of Science, Kyushu University
- 2) Institute of Advanced Material Study, Kyushu University

**6. REMARKS**

COAL MINING AND PREPARATION 採炭・選炭技術

1. PERIOD

September 18, 1989 to November 13, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) University or college graduates or the equivalent with basic knowledge of coal mining, preparation, processing or combustion technology
- 2) *Qualified in their respective fields with more than five (5) years of practical experience*
- 3) Between 35 and 45 years of age
- 4) Good working knowledge of English
- 5) In good health

4. DESCRIPTION OF TRAINING

- 1) Lectures  
Policy and latest technology of coal mining, preparation, processing and combustion in Japan
- 2) Observation tours  
Visits to:
  - \* Typical collieries
  - \* Coal gasification plant
  - \* Manufacturers of related equipments
  - \* National Research Institute for Pollution and Resources
  - \* The Coal Mining Research Centre, Japan

5. FACILITIES AND INSTITUTIONS

- 1) The Coal Mining Research Centre, Japan (CMRCJ)
- 2) Institute for International Mineral Resources Development (IIMRD)

6. REMARKS

**GEOTHERMAL ENERGY** 地熱エネルギー**1. PERIOD**

August 28, 1989 to December 14, 1989 (2.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Ten (10)

**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 for Application of Rocket Calculator of Geothermal Engineering Problems |
| (13) Magneto-telluric Method                 | (26) Geothermal Development of Participants' Countries  |

- 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**

**1. PERIOD**

January 18, 1990 to March 18, 1990 (2 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Eight (8)

**3. QUALIFICATIONS**

- 1) *University graduates or equivalent*
- 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**

Japan Atomic Energy Research Institute  
Tokyo International Centre (Hatagaya), JICA

**6. REMARKS**

SEMINAR ON ADMINISTRATION OF NUCLEAR SAFETY

原子力安全規制行政セミナー

1. PERIOD

October 23, 1989 to November 19, 1989 (28 days)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Senior officers in charge of national nuclear safety regulation and control.
- 2) University graduates or equivalent in nuclear engineering, radiation protection or similar field and have at least five years' experience in his/her job.
- 3) A sufficient command of spoken and written English.

4. DESCRIPTION OF TRAINING

- 1) This seminar has two main purposes as follows:
  - a. To understand the Japanese current status of application of nuclear techniques and its nuclear safety administration which supports the development.
  - b. To understand the importance of radiation protection and radiation management and to learn the *basic technique related to them*.
- 2) For the above, lectures and technical visits to related facilities are planned.
- 3) Each participant is asked to make presentation on the current status of nuclear development and the safety administration system in his/her country and to make discussions each other.

5. FACILITIES AND INSTITUTIONS

Nuclear Safety Bureau, Science and Technology Agency

- 1) Japan Atomic Industrial Forum
- 2) Tokyo International Centre (Hatagaya), JICA

6. REMARKS



**COMMERCE AND TRADE**



PRODUCTION MANAGEMENT (THEORY AND PRACTICE ON WORK IMPROVEMENT)

1. PERIOD

生産性向上技術

October 30, 1989 to March 7, 1990 (4.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

- 1) Have more than five (5) years occupational experience in the field of Production management,
- 2) Graduate from a 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 on basic subject to improve productivity and job improvement practices on factory floors.
  - a. Computer Literacy
  - b. Quality control and 7 tools
  - c. QC circle activity
  - d. Value Engineering
  - e. Productivity Improvement Engineering
  - f. Others
- 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

PRACTICAL PRODUCTIVITY MANAGEMENT 实践的総合生産性向上

1. PERIOD

June 1, 1989 to August 12, 1989 (2.5 months)

2. NUMBER of PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) be engaged in productivity management guidance, or plant management.
- 2) have at least five (5) years of experience in the field covered by this training course, i.e., industrial engineering, research and development of overall plant productivity.
- 3) be between thirty (30) and forty (40) years of age.
- 4) have a sufficient command of spoken and written English.

4. DESCRIPTION OF TRAINING

- 1) the plans for improvement of plant-level productivity.
- 2) the production management techniques and application methods.
- 3) the practical methods of quality control, cost control, and delivery time control.
- 4) the skills for improvement of overall plant operations for higher productivity.

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) Japan Productivity Centre

6. REMARKS

PRIVATE SECTOR MIDDLE MANAGEMENT FOR  
PACIFIC COOPERATION (太平洋協力民間中堅実務)

1. PERIOD

August 28, 1989 to October 7, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Thirtythree (33)

3. QUALIFICATIONS

Applicants should:

- (1) be selected by Chairman of their PBEC National Committee and be nominated by their government in accordance with the usual procedures (in the countries where PBEC National Committees are not established, the government will select and nominate applicants),
- (2) be part of the middle management of private companies or of government-related organization excluding government officials,
- (3) be university graduates or equivalent,
- (4) have more than three(3) years of practical experience in the field,
- (5) have a sufficient command of spoken and written English,
- (6) be under fifty (50) years of age,
- (7) be in good health, both physically and mentally, to undergo the training.

4. DESCRIPTION OF TRAINING

- (1) Seminar Programme Relating to Pacific Cooperation  
(All participants will attend)
  - Representatives of the PBEC Japan Member Committee and others will give presentations on overall Pacific Cooperation.
  - An explanation on the general state of the Japanese economy will be given.
  - Country report
  - Visit to economic organizations
- (2) Practical Training Programme  
The following 5 courses will be set up, and there will be training by each group
  - Medium and Small-Scale Industries Management Training Course
  - Financial Training Course
  - Trade Training Course
  - Information Training Course
  - Food processing (inc. fishery products) Training Course
- (3) Field Trip
  - The participants will visit high-tech plants

5. FACILITIES AND INSTITUTIONS

PBEC Japan Member Committee, The Tokyo Chamber of Commerce and Industry

6. REMARKS

**TRADE PROMOTION SEMINAR (I)** 貿易振興セミナー(I)  
**(Asian & Pacific Countries)** (アジア・太平洋諸国)

**1. PERIOD**

May 8, 1989 to June 11, 1989 (1 month)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Twelve (12)

**3. QUALIFICATIONS**

- 1) University graduates or the equivalent
- 2) Senior officials of governmental or semi-governmental organizations in their respective field with experience of more than 5 years
- 3) Under 45 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 enterprises 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, Asian and Pacific Countries
  - History of Japanese International Trade (1) & (2)
  - Trade Financing
  - Overseas Direct Investment
  - An outlook of economic and trade relations among the above countries
- c) Japan as a Market
  - Corporate Decision Making/working system of Japan
  - Sōgō-Shōsha
  - Japan as a 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**

**TRADE PROMOTION SEMINAR (II)** 貿易振興セミナー(II)  
**(African Middle-East & Carribean Countries)** (アフリカ・中近東・カプリ海諸国)

**1. PERIOD**

January 22, 1990 to March 18, 1990 (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 with experience of more than 5 years
- 3) Under 45 years of age
- 4) 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
    - Administrative 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 (sōgō shōsha)
    - 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**

No. 232

**INVESTMENT PROMOTION SEMINAR (I)** 投資促進セミナー(I)  
(Asian Countries) (アジア諸国)

**1. PERIOD**

June 22, 1989 to July 26, 1989 (1 month)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Eleven (11)

**3. QUALIFICATIONS**

- 1) University graduates or the equivalent
- 2) Senior officials of governmental or semi governmental organizations, or equivalent position in economic promotion organizations with occupational experience of more than five (5) years
- 3) Under 45 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lectures and Discussion  
Purpose: To learn Japan's overseas investment promotion policy and measures with special relevance to the organizations conducting direct investment promotion.
  - (1) Outline of Japan's Overseas Direct Investment
  - (2) Japanese Government Action to Promote Overseas Direct Investment
  - (3) Promotion for Overseas Direct Investment by other organizations
- 2) Country Report  
Purpose: To analyze present situation and incentive of the participants' countries and discuss the problems among participants tutored by the expert of global trade and investment problems
  - (1) Investment incentives in participants' country
  - (2) Future programs in the promotion of the overseas investment to participants' country
- 3) Problems in the promotion of the overseas direct investment  
Purpose: To analyze the problems hindering the international investment and search for the future plans of incentives to improve direct investment to the participants' countries.
  - (1) Legislative Problems
  - (2) Improvement of Infrastructure
  - (3) Managerial Problems in multinational Enterprises
- 4) Field Trips

**5. FACILITIES AND INSTITUTIONS**

World Trade Centre of Japan (WTC)

**6. REMARKS**

No. 233

INVESTMENT PROMOTION SEMINAR (II) 投資促進セミナー(II)  
(Latin American Countries) (中南米諸国)

1. PERIOD

September 25, 1989 to November 8, 1989 (1.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

- 1) Lectures and discussions
  - a) Outline of Japan's Overseas Direct Investment and the Organizations Conducting Direct Investment Promotion
    - Ministry of Foreign Affairs
    - Ministry of International Trade and Industry (MITI)
    - Japan Overseas Development Corporation (JODC)
    - The Export-Import Bank of Japan
  - b) Japanese Government Actions to Promote Overseas Direct Investment
    - JETRO's Activities
    - PAC (Project Arrangement Coordination Consulting) Program
    - Japan Overseas Enterprises Association (JOEA)
    - Investment Consulting by the Export-Import Bank of Japan
    - Development Bank
  - c) Promotion for Overseas Direct Investment by Other Organizations
    - Chambers of Commerce and Industry
    - Industrial Associations
    - Sōgō Shōsha
    - Private Banks
    - Local Governments (Prefectures, Cities, etc.)
  - d) Problems in the Promotion of the Overseas Direct Investment
    - Legislative Problems
    - Improvement of Infrastructure
    - Managerial Problems in Multinational Enterprises
  - e) Japanese and International Economies
    - History of Japan's Economy and International Trade
    - Japan and the Japanese
    - Japanese Enterprises
    - Personnel Management in Japan
    - Decision making System in Japan
  - f) Country Report  
(Report Presentation)
- 2) Observation Tours and Field Trips

5. FACILITIES AND INSTITUTIONS

World Trade Center of Japan, Inc. (WTC)

6. REMARKS

1. PERIOD

August 21, 1989 to December 8, 1989 (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) No less than 26, and not more than 40 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) Hyogo International Centre, JICA
- 2) Kobe International Association
- 3) The Kobe Chamber of Commerce and Industries
- 4) Kobe University
- 5) Kobe Customs House, Ministry of Finance

6. REMARKS

## **TOURISM**



TOURISM PROMOTION (SEMINAR) 観光振興セミナー

**1. PERIOD**

October 5, 1989 to December 6, 1989 (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) International Tourism Development Institute of Japan
- 3) Tokyo International Centre (Hatagaya), JICA

**6. REMARKS**



## **HUMAN RESOURCES**



No. 236

INTENSIVE JAPANESE LANGUAGE (A) 日本語専修(A)

1. PERIOD

April 6, 1989 to October 2, 1989 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) be engineer, senior INSTRUCTOR or equivalent,
- 2) presently engaged directly or indirectly in JICA's cooperation programme,
- 3) be under thirty (30) years of age,
- 4) have a sufficient command of spoken and written English, and
- 5) be in good health, both physically and mentally, to undergo the course of training. Pregnancy is regarded as a disqualifying condition for the participation in the course.

4. DESCRIPTION OF TRAINING

1. Common Japanese
  - (1) Hearing
  - (2) Speaking
  - (3) Writing
  - (4) Reading
2. Subject area-wise Japanese
3. Specialized subject-wise Japanese
4. Field trip

5. FACILITIES AND INSTITUTIONS

Okinawa International Centre (OIC)

6. REMARKS

INTENSIVE JAPANESE LANGUAGE (B) 日本語専修(B)

1. PERIOD

September 28, 1989 to May 28, 1990 (8 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) The counterpart of the overseas project conducted by JICA or a governmental officer in charge of Japanese technical cooperation
- 2) Be university graduates or have the equivalent academic background
- 3) Have sufficient command of both spoken and written English
- 4) Be in good health, both physically and mentally, to undergo the training

4. DESCRIPTION OF TRAINING

1. Common Japanese
  - (1) Hearing
  - (2) Speaking
  - (3) Writing
  - (4) Reading
2. Subject area-wise Japanese
3. Specialized subject-wise Japanese
4. Field trip

5. FACILITIES AND INSTITUTIONS

Okinawa International Centre (OIC)

6. REMARKS

TRAINING SPECIALIST FOR SUPERVISORS (SEMINAR)

監督者訓練専門家セミナー

1. PERIOD

May 6, 1989 to July 1, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

- 1) University graduate or equivalent
- 2) Specialist concerned with planning and conducting foremen training in a government organization or a public corporation
- 3) Between 30 and 45 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture and Discussion
  - Outline of Human Resources Development
  - The Training for Supervisors
- 2) Observation Tour
- 3) Country reports presentation

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) Human Resources Development Bureau, Ministry of Labour

6. REMARKS

MANAGEMENT OF VOCATIONAL TRAINING INSTITUTIONS (SEMINAR)

職業訓練管理セミナー

1. PERIOD

August 24, 1989 to October 20, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) Presently engaged in management of a vocational training institution and be expected to work in the same field in future
- 2) Between 30 and 50 years of age
- 3) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture and Discussion
  - Human Resources Development in the field of Vocational Training
  - Management and Administration of Vocational Training Institution and Facilities
- 2) Country reports presentation
- 3) Observation Tour

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) Human Resources Development Bureau, Ministry of Labour.

6. REMARKS

No. 240

**HUMAN RESOURCES DEVELOPMENT ADMINISTRATION (SEMINAR)**

職業能力開発セミナー

**1. PERIOD**

February 8, 1990 to March 21, 1990 (1.5 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Fifteen (15)

**3. QUALIFICATIONS**

- 1) A director of the department in a central office or equivalents, presently engaged in the human resources development administration
- 2) Between 35 and 50 years of age
- 3) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lecture & Discussion
  - *Outline of Contemporary Labour situation*
  - Human resources development administration
- 2) Observation Tour
- 3) Country Reports Presentation
- 4) Comprehensive study

**5. FACILITIES AND INSTITUTIONS**

- 1) Hachioji International Training Centre, JICA
- 2) Human Resources Development Bureau, Ministry of Labour

**6. REMARKS**

No. 241-1

VOCATIONAL TRAINING STAFF (ELECTRICAL ENGINEERING)

職業訓練スタッフ(電気工学)

1. PERIOD

April 6, 1989 to March 26, 1990 (12 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

- 1) Be presently engaged in electrical engineering field at university, research institute or vocational training centre as professor, engineer or teacher
- 2) Be university graduates with three (3) years of occupational experience in this field
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture on Specialized Subject
  - Theory of Electrical Machinery
  - Designing Electrical Machinery
  - Illumination Engineering
  - Power Electronics and Control of Servomotors
  - Introduction to Computer Programming
  - Electrical Measurement
  - Electrical Power Engineering
  - General Concept of Automatic Control
  - Design of Wiring Works
  - Electrical Wiring Construction
- 2) Practical Training
- 3) Factory Observation and Field Trip

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) The Institute of Vocational Training, Ministry of Labour

6. REMARKS

*There will be an intensive Japanese Language Course (3 months, 300 hours), conducted prior to the technical training.*

VOCATIONAL TRAINING STAFF (MECHANICAL ENGINEERING)

職業訓練スタッフ（機械工学）

1. PERIOD

April 6, 1989 to March 26, 1990 (12 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

- 1) Be presently engaged in mechanical engineering field at university, research institute or vocational training centre as professor, engineer or teacher
- 2) Be university graduates with three (3) years of occupational experience in this field
- 3) Between 25 and 35 years of age
- 4) Good knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture on Specialized Subject
  - Energy Beam Processing
  - Machining Technology
  - Machine Tools
  - Electrical Machining
  - NC Machining
  - Mechanical Design
  - Precision Measurement
  - Strength of Materials
  - Numerical Control Equipment
  - Abrasive Machining
  - Control Engineering
- 2) Practical Training
- 3) Factory Observation and Field Trip

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) The Institute of Vocational Training, Ministry of Labour

6. REMARKS

There will be an intensive Japanese Language Course (3 months, 300 hours), conducted prior to the technical training.

VOCATIONAL TRAINING STAFF (WOODEN ARTICLE ENGINEERING)

職業訓練スタッフ（木材加工工学）

**1. PERIOD**

April 6, 1989 to March 26, 1990 (12 months)

**2. NUMBER OF PARTICIPANTS TO BE RECEIVED**

Six (6)

**3. QUALIFICATIONS**

- 1) Be presently engaged in wooden article engineering field at university, research institute or vocational training centre as professor, engineer or teacher
- 2) Be university graduates with three (3) years of occupational experience in this field
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

**4. DESCRIPTION OF TRAINING**

- 1) Lecture on Specialized Subject
  - Materials for Woodworking Gluing and Plywood
  - Design, Drawing and Furniture Construction
  - Woodworking System in Production
- 2) Practical Training
- 3) Factory Observation and Field Trip

**5. FACILITIES AND INSTITUTIONS**

- 1) Hachioji International Training Centre, JICA
- 2) The Institute of Vocational Training, Ministry of Labour

**6. REMARKS**

There will be an intensive Japanese Language Course (3 months, 300 hours), conducted prior to the technical training.

VOCATIONAL TRAINING STAFF (AUTOMOTIVE ENGINEERING)

職業訓練スタッフ(自動車工学)

1. PERIOD

April 6, 1989 to March 26, 1990 (12 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

- 1) Be presently engaged in automotive engineering field at university, research institute or vocational training centre as professor, engineer or teacher
- 2) Be university graduates with three (3) years of occupational experience in this field
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture on Specialized Subject
  - Internal Combustion Engines
  - Automotive Engineering
  - Automotive Air Conditioning
  - Automotive Mechanism
  - Vibration Problems
- 2) Practical Training
- 3) Factory Observation and Field Trip

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) The Institute of Vocational Training, Ministry of Labour

6. REMARKS

There will be an intensive Japanese Language Course (3 months, 300 hours), conducted prior to the technical training.

No. 241-5

**VOCATIONAL TRAINING STAFF (PLASTIC WORKING AND WELDING  
ENGINEERING)**

職業訓練スタッフ( 塑性加工学・溶接工学 )

1. PERIOD

April 6, 1989 to March 26, 1990 (12 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

- 1) Be presently engaged in plastic working and welding engineering field at university, research institute or vocational training centre as professor, engineer or teacher
- 2) Be university graduates with three (3) years of occupational experience in this field
- 3) Between 25 and 40 years of age
- 4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

- 1) Lecture on Specialized Subject
  - Metals and Alloys
  - Strength of Materials
  - Press Working
  - Plastic Working Machines
  - Press Dies
  - Casting
  - Technical Drawing for Sheet Metal Work
  - Automatic and Resistance Welding
  - Welding Metallurgy
  - Welding Procedure
  - Manual Arc Welding
- 2) Practical Training
- 3) Factory Observation and Field Trip

5. FACILITIES AND INSTITUTIONS

- 1) Hachioji International Training Centre, JICA
- 2) The Institute of Vocational Training, Ministry of Labour

6. REMARKS

- 1) There will be an intensive Japanese Language Course (3 months, 300 hours), conducted prior to the technical training.
- 2) Plastic working means sheet metal work.