POSTAL SERVICE, TELECOMMUNICATION AND BROADCASTING

No. 79

RADIO FREQUENCY MONITORING (電波監視)

1. PERIOD

August 15, 1988 to October 8, 1988 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

1) Be those who have practical experience in the field of radio regulatory administration (radio frequency monitoring, frequency management, etc.) or those who may engage in this field of work within a year.

2) Be college graduates or those who have the equivalent knowledge.

3) Have a sufficient command of spoken and written English.

4) Be under forty (40) years of age

4. DESCRIPTION OF TRAINING

1) Lecture
- –Outline of Radio Regulatory Administration Laws and Regulations of Radio Regulations
- –Frequency Management
- –Practice of Frequency Allocation
- –Radio Operators Qualification System
- –Organization and System of Monitoring Activities
- –Practical Rules of Monitoring Activities (Inspection, Detection of Illegal Frequency, Investigation of Interference and International Monitoring)
- –Site Selection of Monitoring Stations
- –Outline of monitoring facilities
- –Maintenance of Monitoring Equipment
- –Aeronautical Radio Station
- –Land Radio Communication Station (I), (II)
- –Maritime Radio Station
- –System for Telecommunications Administration Real-Time Service (STARS)

2) Practice
- –Monitoring Equipment
- –Operation of Monitoring Equipment (Measurement of Frequency and Frequency Band Width, Automatic Frequency Spectrum Recorder and Measurement of Field Strength, Direction Finder and Movie Monitoring VAN)
- –Practical study at the Telecommunications Dept. of the Kanto Telecommunications Administration Bureau
- –Practical study at the International Monitoring Dept. Kanto Telecommunications Administration Bureau

3) Observation tours

5. FACILITIES AND INSTITUTIONS

Ministry of Posts and Telecommunications

6. REMARKS

No. 80

POSTAL EXECUTIVES' SEMINAR （郵政幹部セミナー）

1. PERIOD

March 6, 1989 to March 18, 1989 (0.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Thirteen (13)

3. QUALIFICATIONS

1) Directors or high-ranking officials in charge of postal administration in governmental organizations

2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and discussions on problems concerning the management of postal services

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Postal Bureau, Ministry of Posts and Telecommunications

6. REMARKS

No. 81

INTERNATIONAL TELEX COMMUNICATION ENGINEERING (国際テレックス通信技術)

1. PERIOD

August 29, 1988 to November 13, 1988 (2.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

1) Be university graduates who majored in telecommunications and/or electrical engineering, or those who have the equivalent technical knowledge,

2) Be currently engaged in international telex communication engineering work,

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
   - Fundamental of computer
   - Latest telecommunication technology
   - Consideration in Telex switching system planning
   - Stored Program control switching system
   - Other

2) Field practice at relevant KDD field offices

3) Observation tours

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 82

INTERNATIONAL TELECOMMUNICATION SERVICES (ADMINISTRATION AND COMMERCIAL) (国際通信業務)

1. PERIOD

May 9, 1988 to July 18, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

1) University graduates or equivalent

2) Presently engaged in traffic and commerical work of international telegraph or telephone services

3) Occupational experience of more than 5 years in the field of international telecommunication services

4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures

– Management	Traffic Demand Forecast
	International Accounting
	Billing & Collection
	Circuit Planning
	Tariff
	Personnel Management
	Employees' Training in KDD
	Customer Relations Activities
	Audio-visual Training Method
– System	KDD's Telecom Facilities
	Fundamentals of Computers
	Telegraph Automation System
	Telex Switching System
	Telephone Switching System
	Submarine Cable
	Business Computerization
	Satellite Communication System
	Outline of ISDN
	Network Management
– Service & Operation	Trend of New Services
	Leased Circuit
	Telephone
	Telex
	Date Systems
	VENUS-P
	TV Transmission

2) Field Practice
Field Practice will be conducted at relevant KDD field offices.

3) Observation tours

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 83

INTERNATIONAL TELEPHONE COMMUNICATION ENGINEERING (国際電話通信技術)

1. PERIOD

January 9, 1989 to March 26, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

1) University graduates or equivalent, majoring in telecommunications and or electrical engineering
2) Under 45 years of age
3) Good working knowledge of English
4) Basic knowledge of telephone switching technology, and to be currently engaged in or expected to be engaged in the field of establishment and maintenance of international telephone switching network

4. DESCRIPTION OF TRAINING

1) Lectures
   - International telephone service operation: General. Semi-automatic operation and ISD Service
   - Considerations in telephone switching system and network planning
     (1) Planning of international telephone switching system
     (2) Traffic management
     (3) Specification of telephone switching system
         Network structure, Numbering plan, Routing plan and Signalling systems
     (4) Network planning

–Fundamental of Computer technology	(1) Basic computer technology (2) Programming technology
–Fundamental of electronic telephone switching technology	(1) Basic concepts of electronic switching system (2) PCM communication (3) Digital multi terminal, Digital synchronous terminal
–KDD Digital Switching system	(1) Outline of XE-20 Digital SWG System (2) Hardware of XE-20 Digital SWG System (3) Software (Call process) of XE-20 Digital SWG System (4) Operation & Maintenance of XE-20 Digital SWG System (5) Operation & Maintenance of XE-10 Digital SWG System (6) Outline of XE-1 SPC SWG System

2) Field practice
   Field practice will be conducted at relevant KDD field offices.
3) Observation tours

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 84

INTERNATIONAL DATA COMMUNICATIONS ENGINEERING（国際データ通信技術）

1. PERIOD

January 9, 1989 to March 19, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) University graduates or equivalent, majoring in telecommunication and/or electrical engineering

2) Have a basic knowledge of Computer

3) Currently engaged or expected to engage in the engineering field of International Data Communication Services

4) Under 40 years of age

5) Have a sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

1) Lectures
   - Introduction to Data Communications
   - Data Transmission
   - Data Switching
   - International Data Communications Technologies
   - Data Communications Systems
   - New Communications Services
   - Current Status of Data Communications

2) Field practice
   Field practice will be conducted at relevant KDD field offices

3) Observation tours

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 85

DIGITAL SWITCHING SYSTEMS ENGINEERING (I) (ディジタル交換技術(基本))

1. PERIOD

May 25, 1988 to July 16, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) Qualified in their respective fields
2) University graduates or equivalent
3) Working for telecommunication administrations or common career organizations
4) Sufficient practical experience on their own switching systems
5) Under 40 years of age
6) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Basic and Theoretical Technology for Telecommunications
     Basic telephone switching technology, Integrated services digital network, Telecommunication processing technology
   - Electronic switching system (ESS)
   - Practical exercise using D70
2) Observation tours

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 86

DIGITAL SWITCHING SYSTEMS ENGINEERING (II) (ディジタル交換技術(応用))

1. PERIOD

January 12, 1989 to March 31, 1989

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) University graduates or equivalent
2) Working for telecommunication administrations or common career organizations
3) Sufficient practical experience on their own switching systems
4) Under 40 years of age
5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   – Basic and theoretical technology for switching system
   The basic concept of a telephone switching system, which consists of routing, numbering, signaling, charging plan and an outline of traffic theory, will be explained. This information will give the participants background data on fundamental functions regarding operations of a telephone switching system composing a part of a telephone network.

   – Electronic switching systems (ESS)

   (1) Stored programme characteristics, switching process, hardware and software configuration of the D70 ESS (Digital) will be explained.

   (2) A series of procedures from traffic forecasting to plant-design of the D70 system via equipment estimation will be explained, including a case study. Maintenance philosophy will be briefly presented.

   – Practical studies
   Participants will conduct practical exercise, using D70 installed at NTT's Central Training School, to increase the knowledge acquired during lectures as well as emphasizing practical applications of this data.

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

All participants are requested to submit a brief report written in English on the present situation of telecommunications, its future programs and its problems in applicants' country.

No. 87

DIGITAL TRANSMISSION SYSTEMS ENGINEERING (I) (ディジタル伝送技術(基本))

1. PERIOD

June 27, 1988 to September 16, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) University graduates or equivalent.
2) Working for telecommunication administrations or common carrier organizations
3) Under 40 years of age
4) A sufficient command of spoken or written English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Transmission system basic and theoretical knowledge
     In this subject, transmission techniques or concepts which intensify the understanding of transmission system are dealt with such as various amplifier circuits, modulator & demodulator and pulse circuits.
   - Frequency division multiplex systems
     Various kind of FDM systems are briefly explained, including the latest development trends.
   - Time division multiplex systems
     General knowledge of TDM, from the principles to introductions for actual systems, are dealt with.
   - Application technique
     Application technique required for transmission system is also given, such as transmission planning, plant designing and so forth.
   - Practical studies based on PCM-24B system and CP-12M coaxial cable system

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

All participants are requested to submit a brief report written in English on the present situation of telecommunications, its future programs and its problems in applicans' country.

No. 88

DIGITAL TRANSMISSION SYSTEMS ENGINEERING (II) （ディジタル伝送技術（応用））

1. PERIOD

July 28, 1988 to October 28, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) Qualified in their repective fields

2) University or college graduates or equivalent who majored in telecommunication or electrical engineering

3) Working for telecommunication administrations or common carrier organization

4) Under 40 years of age

5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Fundamental Knowledge of Digital Network
   - Digital Line Transmission System
   - Microwave Communication System
   - Practical Study
   - Administration Techniques
   - Practical Exercise

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 89

RADIO COMMUNICATION ENGINEERING (無線通信技術)

1. PERIOD

September 1, 1988 to December 2, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Thirteen (13)

3. QUALIFICATIONS

1) University graduates or equivalent majored in telecommunication or electrical engineering
2) Working for telecommunication administrations or common career organizations
3) Under 40 years of age
4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Basic radio communication engineering; FM transmission theory, digital transmission theory, microwave propagation
   - Radio communication systems; line-of-sight FM and digital systems, trans-horizon systems, satellite systems, mobile radio-systems and rural telecommunication system
   - Radio communication equipment; repeater, power plant antenna and components & devices
   - Practical experiments and system designing work

2) Observation tours
   - Fundamental knowledge of Digital Transmission
     Basic of digital transmission, Digital microwave communication technique, Radio propagation and diversity technique, Optical fiber transmission
   - Microwave communication system
     Satellite communication system, rural telecommunications, Mobile communication system, FM microwave TV transmission system
   - Microwave communication equipments
   - Practical study
     Transmission standards, Microwave relay system design
   - Administration techniques
   - Practical exercise
     PCM-24, Digital multiplexer, Optical fiber transmission system

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 90

TELECOMMUNICATION OUTSIDE PLANT ENGINEERING （通信線路技術）

1. PERIOD

May 23, 1988 to August 13, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) Qualified in their respective fields
2) University graduates or equivalent
3) Working for telecommunication administrations or common carrier organizations
4) Sufficient practical experience on telephone outside plant system
5) Under 40 years of age
6) Good working knowledge of Egnlish

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Digital Line Transmission System Engineering
   - Fundamental Knowledge of Outside Plant Engineering
   - Outside Plant Engineering
   - Design Engineering
   - Maintenance Engineering
   - Construction Engineering
   - Method of Measurement

2) Observation tours
   - Tour through a Factory
   - Procticing in Telephone Office
   - Kansai-Chugoku Tour

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 91

TELECOMMUNICATION EXECUTIVES' SEMINAR (電気通信幹部セミナー)

1. PERIOD

October 2, 1988 to October 16, 1988 (0.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

1) Qualified in their respective fields

2) Directors general or high-ranking officials responsible for management or administration of telecommunications in government or operational organizations

3) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Management of telecommunications
   - Introduction to telecommunication management in Japan
   - Present situation and future telecommunication management
   - Problems of telecommunication management particularly in participating countries
   - Various related institutions and manufacturing plants

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Ministry of Posts and Telecommunications

6. REMARKS

No. 92

SATELLITE COMMUNICATION ENGINEERING (REGULAR) (衛星通信技術(普通))

1. PERIOD

May 9, 1988 to August 8, 1988 (3.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

1) Qualified in their respective fields
2) University graduates or equivalent majored in telecommunications or electric/electronic engineering
3) Fundamental knowledge of microwave engineering such as microwave propagation, microwave elements and microwave communication system
4) Experience in the field of INTELSAT satellite communications service
5) Engaged in the field of satellite communication service
6) Good working knowledge of English
7) Under 40 years of age

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Outline of Microwave Communication Technology
   - Outline of Satellite Communication Technology
   - Satellite Communication System
   - Facilities of Satellite Earth Station
   - Operation and Maintenance of Satellite Earth Station
2) Observation tours
   - Earth station system configuration
   - Earth station facilities

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 93

SATELLITE COMMUNICATION ENGINEERING (ADVANCED) (衛星通信技術(上級))

1. PERIOD

August 29, 1988 to November 13, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

(1) Be university graduates who majored in telecommunications or electric/electronics engineering, or have completed the Group Training Course in the Satellite Communication Engineering (Regular) conducted by the Government of Japan, and have had experience of not less than three years in the field of INTELSAT satellite communication service since then,

(2) Have a sufficient command of spoken and written English,

(3) Be under forty-five (45) years of age,

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
- –INTELSAT System
- –Satellite Communication and Radio Wave Transmission
- –INTELSAT Communication System and Related Technology
- –Facilities of Satellite Earth Station
- –Maritime Satellite Communication
- –Maintenance Management
- –Field Practice

2) Observation tours
- –KDD Facilities
- –NTT Television Relay Center
- –Mitsubishi Electric Kamakura Plant

5. FACILITIES AND INSTITUTIONS

Kokusai Denshin Denwa Co., Ltd. (KDD)

6. REMARKS

No. 94

TELECOMMUNICATION NETWORK PLANNING AND DESIGNING（通信網計画設計）

1. PERIOD

October 10, 1988 to December 16, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) University graduates or equivalent majored in telecommunication or electrical engineering
2) Working in telecommunications or common carrier organizations
3) Under 40 years of age
4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

(1) Lectures and practical training
   1) Telecommunication network design
   This study deals with design techniques required to establish a nation-wide telecommunication network.
   2) Outlines of various facilities
   Brief explanations of various facilities making up the network are given.
   3) Expansion planning techniques
   Yearly and long term expansion planning techniques, including practical exercises, are deals with.

(2) Observation tours to Kansai Area

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 95

DATA COMMUNICATION ENGINEERING (データ通信技術)

1. PERIOD

January 9, 1989 to March 10, 1989 (2.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) Working for data communication services, such as in digital switching, digital transmission or digital processing

2) University graduates or equivalent

3) Have a sufficient command of spoken and written English

4) Under 35 years of age

4. DESCRIPTION OF TRAINING

1) Lectures
   - Basic and Theoretical Technology for Data Communication Systems
     The basic concept of a data communication system consisting of information network, data transmission, transmission control procedures and computer technology will be explained.
   - Digital Data Switching Systems
     The switching process, and the hardware and software of the D-50 system will be explained. This will include an outline of the various digital data switching systems in the world. Maintenance philosophy will be briefly presented.

2) Practical studies
   Participants will conduct practical exercises, using the D-50 system installed at NTT's training school, to increase knowledge acquired from lectures.

3) Observation tours

5. FACILITIES AND INSTITUTIONS

Nippon Telegraph and Telephone Corporation (NTT)

6. REMARKS

No. 96

OPTICAL FIBER CABLE TRANSMISSION TECHNOLOGY

（光ファイバーケーブル伝送技術）

1. PERIOD

February 9, 1989 to March 25, 1989 (1.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

1) University graduates or equivalent

2) Sufficient practical experience on their own transmission system

3) Under 40 years of age

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Fundamental of transmission technology
   - Optical fiber cable
   - Optical fiber transmission system
   - Latest optical fiber transmission systems
   - Field practice
   - Measuring technic

2) Observation tours
   Kansai observation tour

5. FACILITIES AND INSTITUTIONS

Japan Telecommunications Engineering and Consulting Service

6. REMARKS

No. 97

COLOR TELEVISION ENGINEERING (FUNDAMENTAL)

（テレビジョン放送技術（基礎））

1. PERIOD

July 18, 1988 to October 2, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

1) Be engineers serving in a broadcasting organization with a few years of practical experience in TV engineering or those who have knowledge of TV engineering enough to undergo this training course,

2) Be college or university graduates or those who have the equivalent technical knowledge in electronic engineering,

3) Have a sufficient command of spoken and written English

4. DESCRIPTION OF TRAINING

1) Lecture and Practice
   a) Color television fundamentals and operation of equipment and materials for broadcasting use.
   b) Techniques and working process of programme production.
   c) Application of digital techniques and personal computer to broadcast engineering.
   d) Measurement and adjustment of broadcast equipment.
   e) Recent technical development.

2) Field Training
   a) VTR and Telecine
   b) Programme production
   c) Television transmitter
) option

3) Study and observation tour
   – Various facilities of NHK
   – Broadcast-equipment manufacturers etc.

5. FACILITIES AND INSTITUTIONS

1) NHK Communications Training Institute

2) NHK Broadcasting Center

6. REMARKS

No. 98

COLOR TELEVISION ENGINEERING (ADVANCED) (テレビジョン放送技術(上級))

1. PERIOD

January 16, 1989 to March 5, 1989 (2.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) Be engineers serving in a broadcasting organization with at least five years of practical experience in TV engineering or those who have knowledge of TV engineering enough to undergo this training course

2) Be college graduates or those who have the equivalent technical knowledge in electronic engineering

3) Have a sufficient command of spoken and written English

4) Be healthy enough to undergo the course of training

4. DESCRIPTION OF TRAINING

1) Lectures and Practices
   - Color TV standard system (NTSC, PAL, SECAM and others)
   - TV sub-control facilities
   - Color TV camera engineering (studio camera, handled camera, VTR in camera)
   - Broadcasting application of digital and micro computer technique
   - Video tape recorders and editors (1 inch C-format, 3/4 inch U-format, 1/2 inch β cam format and others.)
   - Outside and direct satellite broadcasting
   - Simple program production

2) Observations
   - NHK Broadcasting Center
   - NHK Technical Research Laboratories
   - Manufacturers

3) Observation tours
   - NHK Local Station
   - Kansai District

5. FACILITIES AND INSTITUTIONS

1) NHK Communications Training Institute

2) Other NHK facilities

6. REMARKS

No. 99

EDUCATIONAL TELEVISION PROGRAMME (FUNDAMENTAL)

（教育テレビジョン番組（基礎））

1. PERIOD

July 18, 1988 to September 18, 1988 (2.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) University graduates or equivalent
2) Qualified in their respective fields (as a programme director)
3) Occupational experience of 5 to 10 years
4) Under 35 years of age
5) Good working knowledge of English
6) Continue working in the above mentioned field after returning to home countries

4. DESCRIPTION OF TRAINING

1) Lectures, discussions and practical training
   - General idea of educaitonal television
   - The fundamental production technique for educational programmes
   - The applied production technique for educational programmes
   - Practical training in programme production.

2) Observation tours
   - An observation of local NHK stations, schools using school program and historical sites

* Besides the above-mentioned, observation studies on programming at studios, discussions with producers and exchanges of opinions with specialists in broadcasting for education in Japan, are also scheduled in the training course.

5. FACILITIES AND INSTITUTIONS

1) NHK Communications Training Institute
2) Other NHK facilities

6. REMARKS

All participants are requested to submit a report (written in English within 2,000 words) and TV programmes which was produced by your own TV station to NHK Communications Training Institute upon their arrival Tokyo.

No. 100

EDUCATIONAL TELEVISION PROGRAMME (ADVANCED) (教育テレビジョン番組(上級))

1. PERIOD

January 16, 1989 to March 5, 1989 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

1) Be serving in a broadcasting corporation directly and continuosly as a producer or director with practical experience of more than 7 years and less than 12 years in the field of educational television programme production.

2) Be under forty (40) years of age,

3) Be graduates of college or universities,or have an equivalent educational background,

4) Continue working in the above mentioned field after returning to their home countries,

5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures, discussions and practical training
   —General idea and role of Educational Television to get a general outlook of the current situation of ETV in the world.
   —Practice of Programme Production to acquire the know—how of producing programme.
   —Observation of Actual Production Site to get acquainted with the production system of NHK.
   —Introduction to New Technology/New Media surrounding broadcasting

2) Observation Tour to local station of NHK and primary school.

5. FACILITIES AND INSTITUTIONS

1) NHK Communications Training Institute

2) NHK Broadcasting Center

6. REMARKS

All participants are requested to submit a report (written in English within 2,000 words) and TV programmes which was produced by your own TV station to NHK Communications Training Institute upon their arrival in Tokyo.

No. 101

TELEVISION BROADCASTING MANAGEMENT（テレビジョン放送管理）

1. PERIOD

May 5, 1988 to June 17, 1988 (1.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) Staff with ranks higher than division-chief engaged in administrative or planning department of a television broadcasting organization.

2) College or university graduates, between 30 and 40 years of age

3) Good working knowledge of English.

4. DESCRIPTION OF TRAINING

1) Lecture and discussion
   - Television broadcasting
   - Management system of public and private broadcasting
   - The latest engineering system of broadcasting
   - The comprehensive activities of television broadcasting system

2) Field observation and study tour

5. FACILITIES AND INSTITUTIONS

1) Hachioji International Training Centre, JICA

2) Ministry of Posts and Telecommunications

6. REMARKS

No. 102

BROADCASTING EXECUTIVES' SEMINAR (放送幹部セミナー)

1. PERIOD

November 20, 1988 to December 4, 1988 (0.5 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

1) Directors general or equivalent high-ranking officials responsible for management or administration of broadcasting in government or operational organizations

2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and Discussion
   - Outline of Broadcasting in Japan
   - Management and Organization of Broadcasters in Japan
   - New Media of Broadcasting
   - Personnel Management and Training
   - Utilization of Broadcasting Programs in Education
   - Free Discussion using the Country Reports

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Ministry of Posts and Telecommunications

6. REMARKS

All applicants are requested to submit a brief report written in English on the present situation of broadcasting and its problems in an applicant's country

No. 103

RADIO BROADCASTING ENGINEERING (RADIO TRANSMITTING) (ラジオ放送技術)

1. PERIOD

July 18, 1988 to September 18, 1988 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

1) College graduates or equivalent
2) Qualified in their respective fields
3) Occupational experience of more than 3 years
4) Good working knowledge of English
5) Between 23 and 45 years of age

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Transmitting system in general
   - Basic theory
   - Outline of MW transmitter
   - Transmitter circuit
   - Outline of MW antenna
   - MW antenna
   - Field practice at MW transmitting station
   - FM broadcasting transmission
   - FM transmitter
   - FM antenna and VHF propagation
   - Full solid-state transmitter
   - Solid-state TX circuits
   - MW propagation and field strength measurement
   - Shortwave transmitter and antenna
   - Practical training and observation
2) Observation tours

5. FACILITIES AND INSTITUTIONS

1) NHK Communications Training Institute
2) Other NHK facilities

6. REMARKS

All participants are requested to submit a brief report written in English on the present situation of radio broadcasting, its future programs and its problems in applicants' country.

AGRICULTURE

No. 104

AGRICULTURAL CO-OPERATION（農業協同組合）

1. PERIOD

May 5, 1988 to July 7, 1988 (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

No. 105

AGRICULTURAL EXTENSION SERVICE（農業普及）

1. PERIOD

April 11, 1988 to July 24, 1988 (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 advisers, 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 Spanish, 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 Fiseries

2) Japan Agricultural Development and Extension Association

6. REMARKS

No. 106

RICE PRODUCTION （米生産）

1. PERIOD

March 6, 1989 to October 27, 1989 (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
   - Agructure 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 Marketting and Agricultural Cooperatives
   - Agromachinery Manufacturers

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

No. 107

PRODUCTION DU RIZ (米生産(仏語))

1. PERIOD

March 6, 1989 to October 27, 1989 (8.0 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

1) University graduates or equivalent
2) Presently engaged in extension service, training of extension agents in the field of rice production
3) Good working knowledge of French
4) Under 35 years of age

4. DESCRIPTION OF TRAINING

1) Lecture
   - Rice Agronomy
   - Soil and Fertilizer
   - Plant Protection
   - Agricultural Machinery
   - Agricultural Extension
   - Land Improvement

2) Experiment and Field Practice
   - Nursery and Land Preparation
   - Seed Sowing and Transplanting
   - Crop Management
   - Chemical Analysis of Soil
   - Harvesting and Post Harvest
   - Group Experiment of Specific Subjects

3) Study Tour
   - Progressive Farmer
   - Agricultural Research Stations
   - Agricultural Machinery Manufacturer

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

The course will be conducted in French or through the interpretation of Japanese into French
2-month Japanese Language course will be conducted prior to the technical training.

No. 108

RICE CULTIVATION TECHNOLOGY (稲作技術)

1. PERIOD

February 6, 1989 to November 25, 1989 (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.
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
3) – Study tour

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Center, JICA

6. REMARKS

No. 109

HOME-LIFE IMPROVEMENT EXTENSION IN RURAL AREA

（生活改善普及）

1. PERIOD

May 26, 1988 to August 10, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

1) Female

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
   - Outline of agriculture and home-life in Japan
   - Agricultural improvement extension activiels
   - Home-life improvement extension activities
   - Technique for home-life improvement

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

No. 110

AGRICULTURAL STATISTICS (農林統計)

1. PERIOD

July 18, 1988 to October 10, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

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

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

No. 111

VEGETABLE CROPS PRODUCTION (野菜生産)

1. PERIOD

February 6, 1989 to November 25, 1989 (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) Cultivation in general
   (3) Cultivation in particular
   (4) Soil and fertilizer
   (5) Plant protection
   (6) Post harvest technology

2. Experiment and practice

3. Study tour

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

No. 112

VEGETABLE SEED PRODUCTION (野菜採種)

1. PERIOD

February 6, 1989 to November 25, 1989 (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 or varietal improvement who are to work in the said field
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) Cultivation in general
   (3) Seed production method
   (4) Seed technology
   (5) Varietal improvement
2. Experiment and practice
3. Study tour

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Center, JICA

6. REMARKS

No. 113

CONTROL OF RICE DISEASES AND INSECT PESTS（稲病害虫防除）

1. PERIOD

June 1, 1988 to December 8, 1988 (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 Center, JICA
2) Hyogo Prefectural Agricultural Institute
3) Department of Plant Protection, Faculty of Agriculture, Kobe University

6. REMARKS

No. 114

PESTICIDE UTILIZATION FOR PLANT PROTECTION（農薬利用）

1. PERIOD

January 12, 1989 to June 22, 1989 (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
   - Experiment
   - Field Practice
   - Observation Tours and Visits
   - Evaluation

5. FACILITIES AND INSTITUTIONS

1) Hyogo International Center, 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

No. 115

PLANT GENETIC RESOURCES（植物遺伝資源）

1. PERIOD

April 11, 1988 to June 25, 1988 (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

No. 116

SUGARCANE CULTIVATION （サトウキビ栽培）

1. PERIOD

June 23, 1988 to February 25, 1989 (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

1) Subcourse A
   – Sugarcane Breeding
2) Subcourse B
   – Soil Management in Subtropical Regions
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. 117

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

1. PERIOD

July 21, 1988 to March 27, 1989 (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 civilculture

5. FACILITIES AND INSTITUTIONS

1) College of Agriculture, University of the Ryukyus

2) Okinawa International Centre (OIC), JICA

6. REMARKS

No. 118

IRRIGATION AND DRAINAGE (灌漑排水)

1. PERIOD

February 6, 1989 to November 25, 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

1) Lectures and practical training
   - Irrigation and Drainage (Irrigation planning, Drainage planning, Water resorces 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

No. 119

IRRIGATION WATER MANAGEMENT（水管理）

1. PERIOD

April 11, 1988 to October 15, 1988 (6 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

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

No. 120

AGRICULTURAL LAND AND WATER RESOURCES DEVELOPMENT（農地水資源開発）

1. PERIOD

June 13, 1988 to September 4, 1988 (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

No. 121

FARM MECHANIZATION (農業機械化)

1. PERIOD

March 6, 1989 to November 25, 1989 (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 connected with rice production
   – The related subject to mechanization: Rice cultivation, land consolidation, administration of mechanization and co-operative of farm machinery in Japan

2) Observation tours
   – Experimental and Research Institutes and other related organs

5. FACILITIES AND INSTITUTIONS

Tsukuba International Agricultural Training Centre, JICA

6. REMARKS

No. 122

AGRICULTURAL MACHINERY MAINTENANCE AND REPAIR（農業機械整備）

1. PERIOD

May 5, 1988 to November 19, 1988 (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 lecture)

6. REMARKS

No. 123

FARM MACHINERY DESIGN（農業機械設計）

1. PERIOD

February 6, 1989 to October 27, 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
   – 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

No. 124

POST-HARVEST RICE PROCESSING（籾処理精米加工）

1. PERIOD

August 29, 1988 to November 28, 1988 (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
   - Food situation of Japan and Importance of rice
   - Production and export of agricultural machinery
   - Rice Control System
   - Activities of agricultural co-operatives
   - Characteristics of Japonica and Indica

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

No. 125

TECHNICAL EXPERTS ENGAGED IN DAIRY FARMING AND RELATED INDUSTRIES

（酪農振興・検査技術）

1. PERIOD

September 19, 1988 to December 13, 1988 (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 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

No. 126

POULTRY PRODUCTION AND BREEDING TECHNOLOGY

（鶏育種・生産技術）

1. PERIOD

May 12, 1988 to September 23, 1988 (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
   - Hygene
   - *Inspection of quality and egg processing*
   - Extension and education
   - Development of new technology
   - 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 Center
3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

No. 127

ARTIFICIAL INSEMINATION FOR CATTLE（家畜人工授精）

1. PERIOD

May 19, 1988 to October 17, 1988 (5 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
   – Breeding of cattle
   – Adjustment of feed
   – Feed management for dairy cattle
   – Artificial insemination
   – 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

No. 128

EMBRYO TRANSFER FOR CATTLE (受精卵移植技術)

1. PERIOD

July 25, 1988 to December 8, 1988 (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:

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 tecchniques in Japan for livestock breeding personnel in countries faced with the neccesity of it, and ultimately a contribute to the progress of animal industry by the application and improvement of the techniques under their respevtive 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

No. 129

ANIMAL HEALTH RESEARCH（家畜衛生研究）

1. PERIOD

May 23, 1988 to November 17, 1988 (6 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 in principle or other institutes concerned in special cases

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

No. 130

REFORESTATION TECHNIQUES AND FOREST MANAGEMENT（森林造成技術者）

1. PERIOD

July 11, 1988 to October 20, 1988 (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

No. 131

FORESTRY AND FOREST PRODUCTS RESEARCH（林業林産研究）

1. PERIOD

August 15, 1988 to December 12, 1988 (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 Management Division
(2) Forest Mechanization Division
(3) Silviculture Division
(4) Forest Soil Division
(5) Forest Protection Division
(6) Forest Influences 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 1988, training course on forestry will be given.

No. 132

FOREST SOILS (森林土壌)

1. PERIOD

September 8, 1988 to December 12, 1988 (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) *Fores 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) Methodology of Forest Soils Investigations
   (2) Formulation and Utilization of Soil Map
   (3) Field Investigations
3) Analysis Methodology of Vegetable Materials
4) *Special Topics on Forest Soils*
   (1) Experiment and Research on Forestry in Japan
   (2) Afforestation in Tropical Areas
   (3) Aerial Photograph and Soil Map
   (4) Analysis Methodology of Forest Utilization with Remote Sensing
   (5) Management of Forest and Soil
5) Field Investigation Trips and Study Tours

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

FISHERIES

No. 133

FISHERY COOPERATIVES (漁業協同組合)

1. PERIOD

July 4, 1988 to December 13, 1988 (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

No. 134

COASTAL FISHING GEAR AND METHODS I (PRACTICE) (沿岸漁具漁法 I 〔実技〕)

1. PERIOD

July 4, 1988 to December 13, 1988 (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 boasts
   - Fish processing plants
   - Fishing Net & Rope Mfg. Plants

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

No. 135

COASTAL FISHING GEAR AND METHODS II (THEORY) (沿岸漁具漁法 II 〔理論〕)

1. PERIOD

January 9, 1989 to June 19, 1989 (5.5 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 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
   - Designing of fishing gear
   - Relation between fish behaviour and fishing gear
   - Model 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

No. 136

GENERAL AQUACULTURE (養殖一般)

1. PERIOD

January 9, 1989 to June 19, 1989 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

1) University graduates or equivalent
2) Aquaculture experience of more than one year
3) Under 35 years of age
4) Good working knowledge of English
5) Engaging in Aquaculture Education, Extension and Research

4. DESCRIPTION OF TRAINING

1) Lectures and practice
   - Basic information about fisheries in Japan
   - Aquaculture in general
   - Fresh water and sea water fish culture
   - Shell-fish and sea algae culture
   - Induced spawning by hormone injection
   - Water quality analysis
   - Analysis of feed composition
   - Chlorella and rotifer culture
   - Artificial insemination and egg development

2) Observation tours
   - National and regional fisheries research laboratories
   - Prefectural fisheries experimental stations
   - University of fisheries
   - Private fish farms

5. FACILITIES AND INSTITUTIONS

Kanagawa International Fisheries Training Centre, JICA

6. REMARKS

No. 137

HULL AND ENGINE MAINTENANCE OF SMALL FISHING BOAT

（小型漁船の船体・機関保守）

1. PERIOD

January 9, 1989 to June 19, 1989 (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

No. 138

PRAWN PROPAGATION TECHNIQUE (エビ増養殖技術)

1. PERIOD

November 17, 1988 to August 23, 1989 (9.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

Applicants should:

(1) Be nominated by their government in accordance with the procedures mentioned in B—2 below,

(2) Be presently engaged either in refractory production or research and have more than one (1) 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 (35) years of age,

(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) Biology of Penaeus japonicus

2) Aqua propagation in general

3) Basic aquaculture of Penaeus japonics

4) Technique of Penaeus japonicus culture

5) Aquaculture and natural environment

6) Aquaculture and sickness control

7) Aquaculture and management of water quality

5. FACILITIES AND INSTITUTIONS

Ube Junior College

6. REMARKS

No. 139

MARINE RANCH (MARINE FARM) SYSTEM（海洋牧場システム）

1. PERIOD

August 8, 1988 to November 29, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

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,

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
  (Fukui Prefectural Experimental Station)
- Marine Ranching Field
  (Ohita Prefectural Experimental Station)

5. FACILITIES AND INSTITUTIONS

Usa Marine Biologocal Institute
Kochi University

6. REMARKS

No. 140

MARINE FISH CULTURE (海面養殖)

1. PERIOD

February 1, 1989 to July 17, 1989 (5.5 months)

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) Lecture
   - Fish Physiology
   - Fish nutrition and diets
   - Seed Production
   - Fish Pathology
   - Live Fish Transportation

2) Practice
   - Culture of Living Foods
   - Seed Production of Sea Bream
   - Culture of Sea Bream and Yellow Tail
   - Fish Pathological Examination

5. FACILITIES AND INSTITUTIONS

Nagasaki Prefecture

6. REMARKS

No. 141

FISH PHYSIOLOGY AND PREVENTION OF EPIZOOTICS （魚類生理・防疫）

1. PERIOD

March 6, 1989 to June 25, 1989

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	
Pathologenic Microbiology in Fish	Others

2. Study visit

5. FACILITIES AND INSTITUTIONS

Simonoseki University of Fisheries

6. REMARKS

No. 142

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

1. PERIOD

October 3, 1988 to June 2, 1989 (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 or 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 Center, JICA
2) Public Research Institutions
3) Food processing Factories (Food Manufacturing Plants)
4) Yaizu College of Fisheries

6. REMARKS

MINING AND MINERALS

No. 143

GROUNDWATER RESOURCES DEVELOPMENT (SEMINAR)

（地下水資源開発セミナー）

1. PERIOD

August 11, 1988 to October 10, 1988 (2 *months*)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twenty (20)

3. QUALIFICATIONS

1) University or college graduates or equivalent

2) Qualified in their respective fields

3) Ex-participant in group training course in Groundwater Resources Development by JICA from 1972 to 1982

4) Under 50 years of age

5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and discussions
   - Groundwater hydrology
   - Groundwater development and water well engineering
   - Groundwater management
   - Presentation and discussion of participant's country report etc.

2) Observations
   - Solar pump, hand pump and well screen
   - Groundwater simulation
   - Underground dam
   - Groundwater monitoring system etc.

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.

No. 144

OFFSHORE PROSPECTING (沿海鉱物資源探査)

1. PERIOD

May 9, 1988 to December 12, 1988 (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

No. 145

MINING ENGINEERING (鉱　山)

1. PERIOD

August 11, 1988 to November 2, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 146

MINE SAFETY (鉱山保安)

1. PERIOD

February 27, 1989 to May 27, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) University graduates or equivalent who have basic knowledge of mine safety with occupational experience of more than 3 years

2) Under 35 years of age in principle

3) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

2) Observation tours

5. FACILITIES AND INSTITUTIONS

1) National Research Institute for Pollution and Resources

2) Tsukuba International Centre, JICA

6. REMARKS

No. 147

MINERAL PROCESSING AND METALLURGY (選鉱製錬)

1. PERIOD

August 1, 1988 to August 10, 1989 (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, Creamics and Metal Processing.
(7) Selected Topics in Mineral Processing and Metallurgy
Energy Resources, Data Bank System, Sytem 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 Minerallogy and Mineral Processing
e) Ferrous Extractive Metallurgy
f) *Non-Ferrous Extractive Metallurgy*
g) Transport Phenomena and Process Analysis
h) Japanese Language and Culture*
i) Advanced course in Mineral Processing and Metallurgy (optional programme)

2) *Group Study with Lectures and Practice*

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

3) Independent Study

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

*: All participants may be suggested to have the credit of this subject.

4) Observation tours

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.

INDUSTRY

No. 148

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

1. PERIOD

June 30, 1988 to July 31, 1988 (1.0 month)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) Senior class officials in charge of development works for small Industry
2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

Lectures, discussions and obserbation visits

- International comparative study for small industry development
- Policy for encouraging small industry development
- Enterprenеurship, management, and finance
- Technology and human resources development
- Ancilarization and rural industrialization
- Other special topics relevant to small industry development

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

No. 149

MEASURES FOR SMALLER INDUSTRY (中小企業対策)

1. PERIOD

January 9, 1989 to March 27, 1989 (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

No. 150

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

1. PERIOD

April 7, 1988 to September 24, 1988 (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

No. 151

INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL (工業標準化)

1. PERIOD

June 23, 1988 to September 4, 1988 (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)

6. REMARKS

No. 152

INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL (SENIOR SEMINAR)

(工業標準化・品質管理シニアセミナー)

1. PERIOD

November 6, 1988 to November 25, 1988 (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

No. 153

METROLOGY AND MEASUREMENT STANDARDS (計量標準)

1. PERIOD

June 2, 1988 to December 16, 1988 (6.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

1) University graduates or equivalent

2) Presently engaged in measurement or inspection of measuring instruments at governmental, semi-governmental or local metrology services

3) Under 40 years of age

4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

2) Observation tours
   - To related institutions

5. FACILITIES AND INSTITUTIONS

1) National Research Laboratory of Metrology (NRLM)

2) Japan Measuring Instruments Federaton

3) Tsukuba International Centre, JICA

6. REMARKS

No. 154

BUSINESS FEASIBILITY STUDY AND MANAGEMENT PRACTICE

（工業開発計画実務）

1. PERIOD

October 6, 1988 to March 12, 1989 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fourteen (14)

3. QUALIFICATIONS

1) University graduates or equivalent with the basic knowledge to prepare financial statements of a business corporation

2) More than three year experience in this field

3) Between 30 and 45 years of age

4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

Lectures, discussion, case exercises and observation tours
- Establishing Small Business and Related Knowledge and Techniques for Management
- Establishing stages, and techniques of planning and evaluation
- Required knowledge and techniques in each stage of establishing small business
- Small Business Promotion Measures of Gov.
- Development theory and comparative studies of participating countries
- Development and promotion measures of Jiba Sangyo in Japan
- Entrepreneurship and the Reality of Small Business in Japan
- Japan's industrial structure and the make-up of society
- Small business entreprenuer and business management of Japan

5. FACILITIES AND INSTITUTIONS

1) Nagoya International Training Centre (NITC), JICA

2) CHU-SAN-REN (Central Japan Industries Association)

6. REMARKS

No. 155

CERTIFICATION SYSTEMS (認証検査制度)

1. PERIOD

January 9, 1989 to March 9, 1989 (2.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

1) University graduates or the equivalent

2) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

2) Technical visits

3) Observation tours

5. FACILITIES AND INSTITUTIONS

1) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry (MITI)

2) International Trade Administration Bureau, MITI

3) Japanese Standards Association (JSA)

6. REMARKS

No. 156

INDUSTRIAL PROPERTY SYSTEM (工業所有権制度)

1. PERIOD

August 25, 1988 to October 22, 1988 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 157

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

1. PERIOD

May 19, 1988 to June 12, 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 inventive activities and effective use of patent information
   - Actual maintenance of documents and retrieval of patent documentation in JPO
   - Industrial property information services
   - The role of patent in transfer of technology
   - Consultation and agential activities
   - The use and economic value of patents

2) On the Spot training
   - At Japanese Patent Office (JPO) and Japan Institute of Invention and Innovation (JIII)

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 (JIII)

6. REMARKS

No. 158

GLASS TECHNOLOGY (ガラス工学)

1. PERIOD

January 9, 1989 to March 27, 1989 (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

2) Osaka International Training Centre, JICA

6. REMARKS

No. 159

PLASTICS （プラスチック）

1. PERIOD

September 8, 1988 to December 17, 1988 (3.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Six (6)

3. QUALIFICATIONS

1) University or college graduates or equivalent
2) Qualified in their respective fields
3) Occupational experience of more than 1 year
4) Between 23 and 30 years of age
5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

5. *FACILITIES AND INSTITUTIONS*

Osaka Municipal Technical Research Institute (OMTRI)

6. REMARKS

No. 160

REFRACTORY MANUFACTURING TECHNOLOGY (耐火物製造技術)

1. PERIOD

October 13, 1988 to March 12, 1989 (5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 161

CERAMIC GLAZE AND DECORATION (釉・着彩技術)

1. PERIOD

May 12, 1988 to October 31, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Seven (7)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 162

TILE MANUFACTURING TECHNOLOGY (タイル製造技術)

1. PERIOD

September 15, 1988 to March 12, 1989 (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
   - Kiln and firing
   - Quality control
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

No. 163

PETROCHEMICAL INDUSTRY (石油化学工業)

1. PERIOD

January 19, 1989 to March 2, 1989 (1.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eleven (11)

3. QUALIFICATIONS

1) University graduates or the equivalent

2) Presently engaged in responsible assignment and development planning in the field of petrochemical industry

3) Under 40 years of age

4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

1) Tokyo International Centre (TIC), JICA

2) The member companies of the Association of Petrochemical Industries in Japan

6. REMARKS

No. 164

ENZYME TECHNOLOGY (酵素工学)

1. PERIOD

April 7, 1988 to October 2, 1988 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

1) Master's or Doctor's degree and have majored chemistry, biochemistry, agricultural chemistry, food chemistry or applied microbiology

2) 3 or more years of experience in fermentation technology or enzyme technology

3) Between 25 and 40 years of age

4) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

2) Observation tours

5. FACILITIES AND INSTITUTIONS

Osaka Municipal Technical Research Institute (OMTRI)

6. REMARKS

No. 165

RESEARCH ON CHEMICAL TECHNOLOGY (化学技術研究)

1. PERIOD

September 5, 1988 to September 4, 1989 (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}H and ^{13}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.

No. 166

CATALYTIC SCIENCE (触媒学研究)

1. PERIOD

September 1, 1988 to February 27, 1989 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

Research Institute for Catalysis, Hokkaido University

6. REMARKS

No. 167

FOUNDRY ENGINEERING (鋳造技術)

1. PERIOD

August 11, 1988 to March 12, 1989 (7 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 168

METAL SURFACE TREATMENT AND MODIFICATION TECHNOLOGY

（金属表面改質技術）

1. PERIOD

April 7, 1988 to September 24, 1988 (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
   - Materials Metals & Composite materials
   - Electroplating & Electroless plating
   - Electro forming, Anodizing
   - Electro polishing, Metal colouring
   - Powder coating, Phosphating
   - Metal surface hardening & strengthning
   - Metal surface & Vacuum surface modification
   - Related technologies
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

No. 169

METAL WORKS AND ENGINEERING (金属加工技術)

1. PERIOD

September 22, 1988 to March 12, 1989 (6 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Ten (10)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 170

WELDING TECHNOLOGY（溶接技術）

1. PERIOD

June 16, 1988 to November 20, 1988 (6 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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 171

ELECTRICAL STEEL MAKING (電気製鋼技術)

1. PERIOD

November 3, 1988 to March 12, 1989 (4.5 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

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

No. 172

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

1. PERIOD

May 12, 1988 to August 13, 1988 (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

No. 173

HEAT TREATMENT TECHNOLOGY (熱処理技術)

1. PERIOD

March 9, 1989 to June 16, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

1) University graduates or equivalent
2) Occupational experience of over 2 years
3) Mechanical or metallurgical engineer
4) Between 26 and 35 years of age
5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   - Metallic Materials
   - Fundamentals of Heat Treatment
   - Heat Treatment of Equipment
   - Heat Treatment of Steel and Iron
   - Related Technologies
2) Observation tours

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 174

TOOLING AND PRODUCTION FACILITY PRACTICAL ENGINEERING

（治工具生産技術）

1. PERIOD

October 6, 1988 to March 12, 1989 (5.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

1) University graduates or equivalent

2) Occupational experience of more than 5 years

3) In charge of tool engineering, production management, production engineering, etc.

4) Under 45 years of age

5) Good working knowledge of English

4. DESCRIPTION OF TRAINING

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

2) Observation tours

5. FACILITIES AND INSTITUTIONS

1) Nagoya International Training Centre (NITC), JICA

2) CHU-SAN-REN (Central Japan Industries Association)

6. REMARKS

No. 175

SHIPBUILDING（船舶技術）

1. PERIOD

January 9, 1989 to December 21, 1989

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Fifteen (15)

3. QUALIFICATIONS

1) Be presently engaged in the field of maritime industries or its related industries.

2) Meet one of the following requirements:

   a. Be university graduate who majored in engineering, and have more than three (3) years of occupational experience in shipbuilding industries. (But, he who majored in naval architecture is not required this occupational experience.)
   b. Have the academic background equivalent to the above.

3) Have a sufficient command of spoken and written English

4) Be male and be not more than thirty (30) years of age.

5) Be in good health, both physically and mentally, to undergo the 12-month training.

4. DESCRIPTION OF TRAINING

1) Japanese Language

2) Orientation on Shipbuilding Industries

3) Lectures on Shipbuilding Industries

4) Observation Study Tours

5) Practice at Shipyards

5. FACILITIES AND INSTITUTIONS

1) Maritime Technology and Safety Bureau, Ministry of Transport

2) Overseas Shipbuilding Cooperation Centre

6. REMARKS

No. 176

MAINTENANCE OF CONSTURCTION MACHINERY (建設機械整備)

1. PERIOD

May 12, 1988 to August 8, 1988 (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

No. 177

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

1. PERIOD

September 29, 1988 to December 22, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Eight (8)

3. QUALIFICATIONS

1) University graduates, or equivalent with occupational experience of more than 3 years

2) Presently engaged in or expected to be engaged in future in planning and administration work in the field of construction machinery

3) Under 40 years of age

4) Good working knowledge of French

4. DESCRIPTION OF TRAINING

1) Lecture
   - Planning of mechanized construction work and use of construction machinery
   - Function, structure, performance of construction machinery
   - Maintenance, repair, inspection, troubleshooting and field construction machinery
   - Planning, layout, parts control, tool control and administration of work shop

2) Practical training
   Fundamental practice = Engine, Clutch, Transmission Differential gear etc.
   Specialized practice = Bulldozer, Scarper, Grader Excavator, Crane

3) Presentation of country robot

4) Observation tours

5. FACILITIES AND INSTITUTIONS

1) Hachioji International Training Centre, JICA

2) Japan Construction Mechanization Association

6. REMARKS

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

No. 178

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

1. PERIOD

January 5, 1989 to March 25, 1989 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Twelve (12)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

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

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

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

No. 179

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

1. PERIOD

May 12, 1988 to August 27, 1988 (3 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

1) Lectures and practical training
   – *Maintenance in Japan*
   – Maintenance at Steel Plant, Electrical Machinery MFG Plant, Chemical Plant, Machine Assembly Plant
2) Observation tours

5. FACILITIES AND INSTITUTIONS

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

6. REMARKS

No. 180

AUTOMATIC CONTROL (自動制御)

1. PERIOD.

July 18, 1988 to October 23, 1988 (2 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

(1) Have two years' occupational experience or more in the field of production, planning of plants and machinaries, 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 vritten 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

b. Modeling and its application in practical situations

c. Advanced control theory

d. Measurement and sensors and its importance in the control system

e. Basic knowledge of hydraulic, pneumatic and electric sequence control circuits, and its designing

f. Application of hydrautic, pneumatic and electric actuators

g. Computer literacy

h. Programmable Logic Controller (PLC), programming methods, operation and maintenance techniques

i. Practice of operation and maintenance of the industrial robots of playback system

j. Process control system

k. Selection of process features and control characteristics

l. Measuring method of dynamic characteristics of process

m. Optimum adjustment by control instruments

n. Field observations

5. FACILITIES AND INSTITUTIONS

Kitakyushu Industrial Rsearch Institute, Fukuoka Prefecture

6. REMARKS

No. 181

MACHINE CONDITION DIAGNOSIS TECHNIQUE（設備診断技術）

1. PERIOD

September 26, 1988 to December 19, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

1) University graduates or the equivalent

2) An engineer who has engaged for 3 years or more in the field of plant maintenance

3) Have a sufficient command of spoken and written English

4) Under 35 years of age

5) Be in good health, both physically and mentally, to undergo the training. Pregnancy is regarded as a disqualifying condition for participation in the training.

4. DESCRIPTION OF TRAINING

1) Lectures and practice on machine condition diagnosis technique

2) Observation tour

5. *FACILITIES AND INSTITUTIONS*

1) Nippon Steel Corporation

2) Nippon Steel Technics Corporation

3) Nittetsu Electrical Engineering & Construction Co., Ltd.

4) Computer Learning Center – Nogata

6. REMARKS

No. 182

DESIGN & PRODUCTION OF SPARE PARTS FOR MAINTENANCE

（保全用部品設計製造）

1. PERIOD

September 26, 1988 to December 25, 1988

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Five (5)

3. QUALIFICATIONS

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

4. DESCRIPTION OF TRAINING

1) Maintenance spare parts inventry 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. 183

TEXTILE MACHINERY ENGINEERING （繊維機械工業技術）

1. PERIOD

April 7, 1988 to August 7, 1988 (4.5 months)

2. NUMBER OF PARTICIPANTS TO BE RECEIVED

Nine (9)

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) Toyoda Automatic Loom Works, Ltd.

2) Aichi Prefectural Textile Research Centres

3) Nagoya International Training Centre (NITC), JICA

6. REMARKS

No. 184

POLYMER AND TEXTILE TECHNOLOGY (繊維高分子)

1. PERIOD

September 19, 1988 to December 19, 1988

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 polymetric 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. 185

COIN AND DECORATION MANUFACTURE (貨幣勲章製造)

1. PERIOD

April 4, 1988 to September 30, 1988 (6 months)

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

No. 186

INDUSTRIAL DESIGN (INTERIOR DESIGN)

（インダストリアル・デザイン〔インテリア〕）

1. PERIOD

August 29, 1988 to November 11, 1988 (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 Interior Design
   - Technology
   - Advertising
   - Design Process
   - Marketing
   - Case Study

3) Study Visits

4) Practical Training
   - Interior 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 Interior Designers' Association (JID)

6. REMARKS

No. 187

PACKAGING ENGINEERING (包装技術)

1. PERIOD

January 23, 1989 to March 19, 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—proot and gas—barrier packaging
   —Packaging design (graphic)
   —Sefety and sanitation in packaging
   —Food packaging techniques

4) Technical Visit and Practical Training

5. FACILITIES AND INSTITUTIONS

Japan Packag Institute (JPI)

6. REMARKS

No. 188

RESEARCHERS OF INDUSTRIAL TECHNOLOGY（産業技術研究者）

1. PERIOD

October 27, 1988 to September 26, 1989 (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