(1) Time allocation: Training course as a whole and among each of the program

1) Overall course duration (Present course: 11 months)

How do you evaluate the whole length. Please choose one.

Too long	(Sy.A)
Fair	(Mu.R)(Um.H)(Mu.A)(Ta.M)(Sh.A)(Mh.A)(Na.U)
Too short	(Mh.R)

In case you think it is "Too long:" or "Too short", what do you think is the appropriate length?

(Sy.A) (6) months
(Mh.R) (18) months

Reasons

(Sy.A) The overall course duration is too long for married participants, The duration may be fixed up to 6months by increasing the daily hours of study.

(Mh.R) The training Programme will become more beneficial to the participants if its academic level is raised from diploma to master of science.

2) Time allocation for each programs

Please write a comment/opinion regarding the length of Orientation, Lectures, Individual Study and Study Trips if any:

(Mu.R) The duration of practical training of individual study should be increased.

(Um.H)

Orientation	Participants should be given more participation length ok.
Lectures	Participants should be encouraged to deliver lectures relating to problems being faced by the individual countries in the field of seismology.
Individual Study	Length should be increased from 4 periods to periods daily length ok.
Study Trips	Length ok, However bilateral interaction should be given more emphasis.

(Ar.M) More time is required for Individual Study. Time allocation for Orientation, Lectures and study trip is sufficient.

(Mh.R) For beginners who have no background of seismic studies, this course is all right but for the persons who have enough background knowledge of seismology, the time of individual study should be increased. Study trips be in eroded in number.

(Mu.A) Time allocation for study trips and individual study may be increased.

(Si.H) For individual Study, more time is required, and time allocation for other matters like orientation lectures and study trip is sufficient.

(Sh.A) The lectures deliver in a full day were so lengthy, that it was not possible to revise them properly.

(Mh.A) Time allocation for individual study is too short. Because this time may be enough for a simple problem, but as for as the case of depth of research, it is too short.

(Na.U) There should be some more time for computer programming, the period of individual study should be less. The time for practice on source mechanism should be more similarly for analyses of local teleseismic earthquakes it should be more.

(2) Subject(s) to be added or deleted

*Subject(s) means the contents of curriculums.

1) Considering the circumstances/conditions at your home country, what do you think are the

training subject(s) to be more emphasized and/or added?

(Ab.Q) Computer software for archiving & retrieval of seismic data should be added.
(Sy.A) Seismology, Seismicity and Earthquake Prediction and Disaster Prevention.
(Um.H) 1) Local & near earthquake with $\triangle < 10^{\circ}$ should be given more emphasis.
2) Earthquakes Tectonics
3) Seismic macro and micro zoning
(Ar.M) Computer training
(Mh.R) Data acquisition techniques to measure different parameters causing seismic activity along active faults and their interpretation and data prosing techniques are needed to be emphasized as there are few active fault regions in my country.
(Mu.A) Data processing, computer programming, analyses of Local earthquakes and Seismic prospecting may please be more emphasized.
(Si.H) Computer training
(Ta.M) Seismometry, Seismicity, Source Mechanism, Computer Data Processing and Colloquiums.
(Sh.A) Seismic Data Acquisition, Source Mechanism, Computer Data Processing and Colloquiums.
(Mh.A) I think Earthquake Engineering dynamic soil structure interaction & soil dynamics should be more emphasized. After that structural dynamics should be thought in more depth with F.E.M.
(Na.U) I have given the answer in the precious question.

2) If you consider some training subject(s) not needed in the program, what are they?

(Sy.A) Strong ground motion, Seismic Tomography Rock experiments and Tsunamis.
(Um.H) No Comments.
(Ar.M) I think all subjects discussed was the need of the Programme.
(Mh.R) Institutes and Universities carrying out research on earthquake hazard mitigation technical are preferable for field trips.
(Mu.A) Analyses of Teleseismic records.
(Si.H) All the subjects are need and requirement of the training.
(Ta.M) In my opinion all the subjects taught during training period are some how related with the field of Seismology.
(Sh.A) The training subjects was quite adequate in view of related with the field of Seismology.
(Mh.A) Mathematics & computer is already studied in computer course during graduation. Strong ground motion, ground vibration, Design earthquake ground motion should be input from seismologist to earthquake engineers therefore not needed.
(Na.U) As the participants come from different background, so it is possible that if one subject is not important to me may be it is useful for the other. Therefore the overall choice of the subjects for the course was o.k.

3) The study trips include observation/visit of institutes, universities, factories.

What kind of spot (including universities, institutes, construction spot and so forth) are preferable for field trips? What do you like to observe and learn there?

(Sy.A) Study trips are already well arranged.
(Um.H) Present Schedule ok. However god forbid,if there occurs any earthquake with Mb>6.0 in Japan during GTC in seismology, then post earthquake study should be carried out by the participants.
(Ar.M) Visit of Seismic Observatories are preferable for field trips. We want to learn more

about operation and maintenance of Seismic observatories.

(Mh.R) Some Programme to enhance the knowledge of Ex-participants (Workshop/Seminar) may be arranged.

(Mu.A) Universities and institutes are preferable for field trips because they carry out research on earthquakes hazard techniques.

(Si.H) visit of seismic observatories are Preferable for field trips and we learn the operation work and maintenance of the seismic observatories.

(Ta.M) Study trips should includes visit of Institutes, field stations, Observatories and field trips to places where we can watch and learn the after math of earthquake and tectonic features.

(Sh.A) Studies trips should consists of a visit of Seismicity related institutes, field sites where practically observe the measures/development taken to mitigate the seismic risk.

(Mh.A) 1) Actual shaking table testing, how to record, what to record etc.
2) soil & structure testily labs in the universities & institutes.
3) In construction spots, special features related to seismic design should be highlighted.

(Na.U) As far as my course is concerned during 95-96, the choice of JICA was very good.

(3) Suggestion for the improvement of future programs

If you have any other comments/opinions as to the improvement of GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II, please write here.

(Sy.A) Besides theoretical knowledge more emphasis may be given on practical knowledge of the subjects.

(Um.H) Should be more practical oriented.

(Ar.M) More attention is required for computer programming and more study trips of different Seismic Observatories are suggested.

(Mh.R)

(Mu.A) (1) Mathematics (2) Practice on Source Mechanism
(3) Practice on Seismicity, these subjects may be more emphasized.

(Si.H) Due attention is received in computer programming and more study trips of different seismic stations of your country is suggested.

(Ta.M) Colloquium should be held regularly and more time should be given to Computer data processing. Practical assignment should be given more. There is not much time given to instrumentation.

(Sh.A) More times should be spent to data processing by using computer base Programme, practical assignments etc.

(Mh.A) It is very good program. My comments are for individual study. It is requested that IISEE should circulate the different programs for individual study which are already in progress in different institutes or universities, and could easily be finished in four months.

(Na.U) In my opinion, it would be better that as soon as the participants reach to their respective institutes. They should be given the list of the subjects and ask them to choose the subjects which they have more interest and then for that participant or group of participants emphasis should be given on those subjects.

V. JICA AFTER-CARE SERVICES

(1) Requests as to the follow-up for the ex-participants of the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II

1) After the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE

ENGINEERING II, have you contacted your host institute in Japan?

Yes (Mu.R)(Um.H)(Mh.R)(Mh.A)
No (Sy.A)(Ar.M)(Mu.A)(Si.H)(Ta.M)(Sh.A)(Na.U)

2) If "Yes", Please write what kind of information did you get or give through that contact?

(Mu.R) Publication of research paper.
(Um.H) while preparing PC-1 (as mentioned earlier) contacted Dr.S.Hahori in his useful suggestions & guidance on instrumentation of telemetry Seismic network.
(Mh.R) I contacted to join an advance course on Seismology in my host institute.
(Mh.A) I have asked to send the program FRAME in IISEE. Also I have discussed the reinforcement at large openings in earthquake resistant design of structure.

3) Please specify your requests as to JICA's follow-up for ex-participants and its support after the training?

(Sy.A) JICA is requested to please inform ex-participants, at least once a year, the major activities and research in the field of seismology and earthquake engineering in Japan.
(Um.H) After 5-8 years of GTC, ex-participants should be recalled for a short duration to familiarize them with the latest techniques and advancement in their respect fields.
(Ar.M) JICA is requested to provide latest literature to the ex-participant so that they can update their knowledge.
(Mu.A) To enhance the knowledge of Ex-participants Seminars may be arranged.
(Si.H) To provide the latest literature to ex-participant for the sake of knowledge in the seismic field.
(Ta.M) Ex-Participant should be kept informed with the latest development through short visits and through interchange of research work.
(Sh.A) Ex-participants should be provided opportunities with the latest development in the field of seismology through short visits and interchange research work.
(Mh.A) They are requested to bring some software, if developed for the generation of ground motion from response spectra & vise versa. Also some software for soil structure interaction analysis & dynamic structure analytic.
(Na.U) I am receiving Japan today as follow up services, why not to send me some magazine relating to seismology also.

(2) Alumni Association of JICA Ex-participants

1) Are you a member of Alumni Association of JICA Ex-participants?

Yes (Mh.R)(Ta.M)
No (Mu.R)(Sy.A)(Um.H)(Ar.M)(Mu.A)(Si.H)(Mh.A)(Na.U)
(Um.H) During 1994-95, I filled in the membership form and personally handed it over as JICA office, but no encouragement received from alumni Association.

2) If "Yes", what activities do you take part in?

(Mh.R) I was invited to participate in a meeting held at Punjah University lahore in 1996. But I could not attend that meeting due to official business in cholistan coal exploration project of my organization.
(Ta.M) Regular member of Alumni since 1992 and actively participated in every meeting and gathering.

VI. YOUR IMPRESSION ON CURRENT SEISMOLOGY AND EARTHQUAKE ENGINEERING TECHNOLOGY IN JAPAN

Please write down freely and frankly.

(Mu.R) Satisfactory

(Ab.Q) No comments as I am out of this field except for imparting training at I.M.G.

(Sy.A) The current seismology and earthquake engineering technology in Japan is very good.

(Um.H) Japan is a heterogenious Country so far as volcanoes, earthquakes and other related phenomena are concerned and the Japan Seismologists and engineers have learnt how to mitigate these disasters. The undersea tunnel Connecting the mainland with Hokkaido is the best example of their expertise and technical capability in this regard.

(Ar.M) I think Japan is one of the most advanced country in the technology of Seismology and Earthquake Engineering at present. Japan should transfer and share this technology to the under-developing countries.

(Mh.R) During my stay in Japan for Seismology studies, I visited different institutes and Universities, carrying out Seismological research. I found dedicated researchers, performing their duties with devotion and hard work. The research facilities provided are excellent and if somebody has interest to carry out research work, he faces no hindrances rather cooperation and polite behaviour of the senior people encourages him and gives him confidence to improve his efficiency.

(Mu.A) In my opinion, Japan is doing better research in the field of Seismology and Earthquake Engineering than any other country of the world. Universities of Japan are doing a lot of work in this field.

(Si.H) Without any doubt, I can say that Japan is the most advanced country in the field of seismology and Earthquake Engineering in the world at present and hoping that Japan may help the developing country in the fore-said field in all respects.

(Ta.M) Japan as one of most advanced countries in the World has made great development in the field of Seismology & Earthquake Engineering. As a Seismologist I have learned a lot after visiting various Institutes, Observatories, Universities & various field of life. I am very much impressed by the state of art, they have developed in the field after a long history of some big devastating earthquakes.

(Sh.A) Japan has made great achievement in the field of seismology/earthquake engineering and taking full benefits by applying the latest techniques in constructions of earthquakes resistant structures. I learned a lot of techniques and knowledge by visiting various institutes, observatories universities.

(Mh.A) It is well advanced. This is because every organization institute is spending a considerable amount in the research / development in earthquake engineering. This is the field of my interest. And I think in GTC, a very little knowledge is shared because of short time. Anyway I appreciate the Japanese advancement in this field and admire it

(Na.U) Simply "Wonderful"

VII. REQUEST TO JICA

If you have any requests to JICA, please specify here.

(Mu.R) A refresher course for those ex-participants who have received the GTC in Seismology & Earthquake Engineering at least ten years ago, for a period of one to two months may be arranged in order to refresh their knowledge and also learn the latest techniques.

(Um.H) JICA is providing Commendable technical & financial assistance to Pakistan Meteorological Department in the field of Civil Aviation and Flood Forecasting. Phase II Programme of the installation of weather surveillance radars at Tame yar Khan and D.I. khan will go along way in weather forecasting.However, field of seismology for

mitigating earthquake disasters has always been neglected by JICA. It is how appropriate time that JICA should provide technical financial support to re-organize the seismological network of Pakistan.

(Ar.M) I request ot JICA to send expert mission to Pakistan to study the requirement of this country in the field of Seismology. On the basis of that study, some seismic instruments along with the on Job training may be provided.

(Mh.R) I am interested to join Ph.D. studies in an institute in Japan. Any help by JICA in this respect is always welcomed.

(Mu.A) JICA is requested to nominate me for a refresher course of 2-3 months duration to refresh my knowledge in the field of Seismology.

(Si.H) I request to JICA to send the expert mission to Pakistan for studying the requirements of this country in the field of seismology and Earthquake Engineering and on the basis of that study, provide some seismic instruments and as well as job training.

(Ta.M) Keeping in view the rapid development in this field it is suggested that the Ex-participants from the developing countries may be invited for short visits in order to keep them abreast of the latest developments. This can possibly be achieved through some associate ship schemes with various Institutes/Universities through JICA.

(Sh.A) Ex-Participants from developing Countries may be provided opportunities through shorts visits in seminar/workshops to upgrade themselves with latest developments in the field of seismology.

(Mh.A) I request to JICA that in addition to the publications look Japan and KENSHU-IN, please send us some publications in the field of earthquake engineering on regular bases, so that I can continuously in touch with the new advancement. Also the information flow on internet related to this subject should be free of cost for the Ex-participants. All ex-participants should be called on seminars at least once in every five year. JICA should also fund the ex-participants in the conferences held in the world related to earthquake engineering at least once in three years to participants in the conference. They may also assign some assignments related to earthquake engineering to ex-participants to keep in touch with the subjects on the payment of little amount.

(Na.U) As you have asked for request, so why not, to be very frank, I would request JICA to award me a scholarship for doing P.hd in Seismology in Japan. Thank you very much for your cooperation, too.

FOLLOW-UP SURVEY FOR EX-PARTICIPANTS OF TRAINING COURSE
TSUKUBA INTERNATIONAL CENTER (TBIC)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AND
INTERNATIONAL INSTITUTE OF SEISMOLOGY AND EARTHQUAKE ENGINEERING
(IISEE), BUILDING RESEARCH INSTITUTE (BRI)

QUESTIONNAIRE FOR ORGANIZATION CONCERNED

ON
GROUP TRAINING COURSE
IN
SEISMOLOGY AND EARTHQUAKE ENGINEERING II

I. ORGANIZATION OUTLINE

(1) Name, type of Organization and size

1) Name of Organization:

(MSSP) Micro Seismic Studies Programme-Pakistan Atomic Energy Commission
(WAPDA) Water and Power Development Authority
(CNPP) Chashma Nuclear Power Project Pakistan Atomic Energy Commission

Address:

(MSSP) Pinstech P.O. Nilore, Islamabad,Pakistan
(WAPDA) WAPDA House, Lahore, Pakistan
(CNPP) P.P.Box. 1133, Islamabad, Pakistan

	(Telephone)	(Facsimile)	(Cable/Telex)	(E-mail)
(MSSP)	92-51-9290276	92-51-9290275		qaisar@mssp.org.pk
(CNPP)	92-51-9205600	92-51-9217864	54140 CNPP PK	chashma@paknet2.ptc.pk

2) Please indicate the type of your organization. Please choose on the following items.

a) Governmental (CNPP)
b) Semi-Governmental (MSSP)(WAPDA)
c) Private ( )
d) Other Type ( )

What is it? Please specify.

(CNPP) Research and Development in peaceful use of nuclear sciences.

3) How many staffs does your organization have?

Number of staffs:

1.Total
(MSSP) 96
(WAPDA) In Thousands
(CNPP) 500

2.Research/Technical
(MSSP) 35
(CNPP) 350

3.Administration
(MSSP) 61

(CNPP) 150

(2) Activities, responsibilities and organization chart

1) What are the main activities and responsibilities of your organization?

(MSSP) Monitoring seismic activities, data acquisition & related research work such as seismic risk assessment of various part of Pakistan. Assessment of Discriminants for earthquake and underground nuclear explosions. Maintenance of field stations & up gradation of seismic network as & when required.

(WAPDA) Production and distribution of hydro and thermal power. Investigation and development of water resources. Construction and maintenance of dams etc.

(CNPP) The main activities of our office are to manage the construction of chasnupp, QA/QC of construction/installation, Design review, operation & maintenance of plant.

* If you have your organization chart, please attach it.

(3) Relation with Japan

1) How many of your staff members have participated in JICA training course in the past? And what were the Courses they participated in.

1.Total

(MSSP) 06(six)
(WAPDA) Not known but many
(CNPP) 2

2.GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II

(MSSP) 04(Four)
(WAPDA) One
(CNPP) Earthquake Engineering

3.Other JICA's Courses

(MSSP) One in Seminar Course & One in Global Seismological Observation.
(WAPDA) Not known

2) Does your organization have any joint project or program (research/training) with Japanese institute(s) except JICA?

Yes (MSSP)(WAPDA)(CNPP)
No

If it does, could you please specify the name of program and/or project?

(MSSP) Garnet Project. Pakistan is participating in the Global Alliance Regional Seismic Network Project (GARNET) under IISEE, BRI, Tsukuba, JAPAN.
(WAPDA) Not known
(CNPP) WANO

3) Does your organization have any relationship with any other countries similar to JICA's training?

Yes (WAPDA)(CNPP)
No (MSSP)

Please specify the name of program and/or project, if possible.

(WAPDA) Many in different fields

(CNPP) IAEA

4) Do you have any request about a joint program and/or project with Japanese research institute?

Yes (WAPDA)(CNPP)
No (MSSP)

In case of "Yes", what is it?

(WAPDA) A Joint project on earthquake prediction
(CNPP) Dynamic response analysis verification with shaking task tests at BRI, MOC, Japan.

II. APPLICATION AND NOMINATION OF CANDIDATE TO JICA TRAINING COURSE

(1) Procedure of selection

1) Please let us know the procedure of candidate nomination

(CNPP) The organization advertise for candidate and judge from his/her aptitude and qualification
( ) After judging from staff's aptitude and qualification, the origination order the candidate to go to Japan
Others (Please specify the procedure below).
(MSSP) We get JICA training courses through Economic Affairs Division Govt. of Pakistan.
(WAPDA) The authority nominates a person by observing his qualifications.

2) How long did it take you to choose the final candidate(s) for the the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

within one month (WAPDA)(CNPP)
more than one month (MSSP)

If it took more than one month, how many months?

(MSSP) (two)months

3) What are the standards and qualification of candidate selection for the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

Please choose any out of the following.

present post of candidate	( )
research record	(CNPP)
service record	(MSSP)(WAPDA)(CNPP)
educational background	(WAPDA)
intention	(CNPP)
interchange between the training institute	( )
others (Please specify below.)	( )

---

(2) General Information (G.I.): brochure of the course from JICA

1) Did you get enough information from the "G.I." for selecting final candidate(s) for the training course?
Should any other piece of information be added to the "G.I."?

Yes, it is enough. (MSSP)(WAPDA)(CNPP)
No, it is not enough.

In cases of "No", please specify the information to be added.

---

2) Do you usually receive "G.I." well in advance?

Yes	(MSSP)
No, it arrives late.	(WAPDA)(CNPP)

(3) Number of prospective applicants/candidates

1) How many applicants/candidates do you have every year for the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

(MSSP) Two-average One
(WAPDA) Two
(CNPP) At least five

2) How many staffs in your organization do you consider are adequate for participation in the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II in the future?

(MSSP) six(06)
(WAPDA) about five
(CNPP) A team of more than 20 persons is required in EEII.

III. EVALUATION OF THE TRAINING PROGRAM

(1) Results/achievements of the training

Have you found any good results/achievements in your staff after the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II at the point of the following? Please specify if available.

a) the method of researching

(MSSP) After observation of research work at various Institutes in Japan, the participants has developed a broader outlook in carrying his research work.
(WAPDA) It has become more relevant and scientific
(CNPP) more applicable

b) the knowledge/technique

(MSSP) The knowledge/technique acquired during the training has been quite helpful in the field of Seismology.
(WAPDA) The knowledge has increased in many fields relating to seismology.
(CNPP) They can better perform their assignments.

c) Others

(CNPP) They maintain more discipline due to work in Japanese Working system.

(2) Applicability of the knowledge/technique obtained through the training in Japan

1) Are ex-participants applying the knowledge/technique obtained through the training in Japan to their works back at home country?

a lot	(MSSP)(WAPDA)
to some extent	(CNPP)
no application	( )

2) If there are some examples of good application, please specify them.

(MSSP) The knowledge obtained though training courses is being applied to monitor the Seismicity of specific regions, estimation of the Source parameters & evaluation of Seismic Risk.

(WAPDA) Much improvement has been observed in many subjects for example in computer programming, statistics relating to Seismicity etc.

(CNPP) better interpretation of result attained through analysis.

3) In case of "no application", why do you think the reason?

---

4) Do you try to assign ex-participants to responsibilities/posts where they can make good use of the knowledge/technique obtained through GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

Yes (MSSP)(WAPDA)(CNPP)
No ( )

5) In case of "Yes", please give an concrete example.

(MSSP) Individuals with specific know-how are given relevant assignments in group tasks.

(WAPDA) He has been asked to teach computer programming to others and work on earthquake prediction.

(CNPP) They are assigned the jobs like seismic analysis of structures, seismic design review.

(3) Expectations for future JICA programs

1) Would you like to continue sending your staff to participate in GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

Yes (MSSP)(WAPDA)(CNPP)
No

2) In case of "Yes", what/how intense are your expectations?

(MSSP) It is expected that a greater number of participants will be accommodated in the future JICA Programme in order to keep them abreast with the latest developments and techniques in the field of Seismology. This will help us a lot in laying out a broader base in the field Seismology & Earthquake Engineering.

(WAPDA) At least one every year

(CNPP) It will be good to develop a team, who can perform seismic design of any kind of structure.

(4) Compare with other programs (other similar training offered by another organization)

How do you evaluate GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II compare with other one?

- level of content:
  (CNPP) high, ( ) low, (MSSP) neither,
- length:
  ( ) long, ( ) short, (MSSP)(CNPP) neither,
- quantification:
  ( ) difficult, ( ) easy, (MSSP)(CNPP) neither
- number of participants
  ( ) many, (CNPP) not many, (MSSP) neither

(WAPDA) Can not be answered as no body has contained training from any other organization in seismology.

IV. IMPROVEMENT OF FUTURE GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II

(1) Knowledge or technique that your organization hopes participants to obtain from the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II.
In future, what sort of knowledge/technique would you expect your training participants to acquire from the future GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II?

(MSSP) We expect our participants to learn the latest developments in this particular field and the relevant instrumentation.
(WAPDA) The present criteria is OK.
(CNPP) The knowledge / technique given by GTC is already adequate.It will be better if ex-participants can keep in touch with IISEE.

(2) Improvements of the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II

If you have any opinions/comments regarding the improvements of future courses, please specify as to the following.

a) Duration of program
(MSSP) appropriate
(CNPP) adequate

b) Curriculums
(MSSP) appropriate
(CNPP) good

c) Contents of training
(MSSP) appropriate
(CNPP) good

d) Technique levels
(MSSP) appropriate
(CNPP) good

e) Others

V. JICA AFTER-CARE

JICA conducts after-care services for ex-participants of the GROUP TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING II. If you (as an organization) have any opinions/requests concerning this services. Please specify here.

(MSSP) Ex-participants may please be allowed to order the literature about the latest research/development in the field of Seismology and Earthquake Engineering on confessional rates.
(WAPDA) Instead of Magazine Japan Today, please send some bulletin relating to seismology.
(CNPP) It is appreciated that JICA take care of their ex-participants. It is requested then JICA sends latest technical reports on Earthquake Engineering to their Ex-participants.

VI. MAJOR PROBLEMS OF TECHNOLOGY FOR SEISMOLOGY, EARTHQUAKE ENGINEERING AND EARTHQUAKE DISASTER PREVENTION MEASURES IN YOUR COUNTRY

Please describe the present problems in your country and/or in your organization.

(MSSP) In our country seismic design criteria is followed only for vital facilities like dams and nuclear power plants. No such practice is observed in ordinary construction. This is because of non-existence of any legal authority/organization in this respect and hence the lack of awareness in the general public about the seismic hazard.

(WAPDA) Lack of research attitude
Lack of research facilities

(CNPP) We have shortage of manpower trained in the subjected field.

VII. REQUEST TO JICA

If you have any request to JICA, please specify here.

(MSSP) Pakistan, being located at the junction of three tectonic plates, is an earthquake prone country. But the general awareness about the seismic hazard is lacking mainly because of shortage of trained parsons in the field of Seismology & Earthquake Engineering. Japan , with sufficient resources and high level of technology/know-how in the said field is playing an excellent role in sharing the knowledge with developing countries. It will be highly appreciated if greater number of participants from Pakistan are allowed to participate in these training courses. The upper age limit for participants may be increased in this regard to allow the Senior Scientists/Engineers from our country to participate in these courses to keep themselves abreast of the latest developments in the said field.

(WAPDA) 1.Training in the field of seismology be regularized for WAPDA candidates.
2.Collaboration of Japanese Universities with the directorate of Seismology, Tarbela Dam.

(CNPP) It is requested to JICA that the ex-participants, who are already trained in the field of seismology and earthquake engineering may be called again by JICA for the individual study program (one year) of IISEE. It will enhance their research & the applicability to the project problems.

* About the person filled in the questionnaire

Date:
(MSSP) 10-06-1998
(WAPDA) 29-07-1998
(CNPP) 06-06-1998

Position:
(MSSP) Director
(WAPDA) Director Seismology, OMM, Tarbela Dam
(CNPP) Senor Engineer

Printed name:
(MSSP) Dr.Mohammad Quisar
(WAPDA) Ch. Inayat Ali,
(CNPP) Muhammed Ameen

FOLLOW-UP SURVEY FOR EX-PARTICIPANTS OF TRAINING COURSE
TSUKUBA INTERNATIONAL CENTER (TBIC)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AND
INTERNATIONAL INSTITUTE OF SEISMOLOGY AND EARTHQUAKE ENGINEERING (IISEE), BUILDING RESEARCH INSTITUTE (BRI)

QUESTIONNAIRE FOR EX-PARTICIPANT
ON
GROUP TRAINING COURSE
IN
THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

I. PERSONAL DATA

(1) Name in full

Prof., Dr., Ms., Mr		Age	Sex
Mr. Abudul Hakim	(Ab.H)	51	Male
Hamid Mahmood	(Ha.M)	41	Male
Mr. Shahid Hasan Khan	(Sh.H)	56	Male

(2) Home address

(Ab.H) Nai Abadi, Dhoke Gujran, Rawalpindi-Cantt, Pakistan
(Ha.M) House No.174, street No.53, G10/3, Islamabad, Pakistan
(Sh.H) 1, Anwar colony, khojak Road, Quetta, Pakistan

(3) Year of your participation on the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

(Ab.H) 1991
(Ha.M) 1991
(Sh.H) 1992

II. YOUR PRESENT ORGANIZATION OUTLINE

(1) Name, type of organization and size

1) Name of your organization

(Ab.H) Micro Seismic Studies Programme-Pakistan Atomic Energy Commission
(Ha.M) Pakistan Atomic Energy Commission(PAEC)
(Sh.H) Geological Survey of Pakistan

Address:

	(Street and Number)	(City)	(State/Country)	(Postal Code)
(Ab.H)	Pakistech P.O.Nilore,	Islamabad,	Pakistan	
(Ha.M)	P.O.Box.1133	Islamabad,	Pakistan	
(Sh.H)	Sariab Road	Quetta	Pakistan	

	(Telephone)	(Facsimile)	(Cable/Telex)	(E-mail)
(Ab.H)	92-51-9202188	92-51-9290275		pmdz@paknet3.ptc.pk
(Ha.M)	051-9205600	051-9217864		hamid@peasl.sdnpk.undp.org
(Sh.H)	081-9211048	081-9211018	Geological Quetta	gsp@paknet3.ptc.pk

2) Your present title in your organization

(Ab.H) Principal Scientific Officer
(Ha.M) Manager, Civil & Structural Division, CHASNUPP(a dept of PAEC)
(Sh.H) Deputy Director

If your title changed after the participation in GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING, please describe recent two titles and activities.

Latest Title
(Ab.H) Principal Scientific Officer

Name of organization
(Ab.H) Principal Scientific Officer

Period
(Ab.H) from 1981 to date

Activities
(Ab.H) To monitor seismic activity, data acquisition & related research work

Previous Title
(Ab.H) Senior Scientific Officer

Name of organization
(Ab.H) Micro Seismic Studies Programme

Period
(Ab.H) from 1981 to 1988

Activities
(Ab.H) Same as above

3) Please indicate the type of your present organization. Please choose out of the following items.

a) Governmental (Sh.H)
b) Semi-Governmental (Ab.H)
c) Private ( )
d) Other Type ( )

What is it? Please specify

(Ha.M) Develops Nuclear power energy
(Sh.H) Geological Organization

4) How many staffs does your organization have?

Number of staffs

(Ab.H) 96
(Ha.M) over 10,000
(Sh.H) 1330

(2) Activities, responsibilities and organization chart

What are the main activities of your organization and what are your activities and responsibilities in it?

(Ab.H) 1) Operation/maintenance of seismic network for monitoring seismic activity and acquisition of related data.
2) Analysis of seismic data to investigate the Seismicity/tectonics of specific regions.

(Ha.M) I work in one of the departments of PAEC, called chashma Nucleus Power Project (CHASNUPP).It develops Nucleus Power and currently constructing a 300mwe Nucleus Power Plant of chaslma.I am responsible for siting & structural design of this Plant.

(Sh.H) Geologic mapping, geoscientific surveys, basic and applied research, environmental investigations including hazard studies.

* If you have the organization chart, please attach it. (if available)

III. EVALUATION OF GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

(1) Ex-participant's evaluation of the course

1) Do you think the participation in the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING has been useful to your carrier?
To what extent were your expectations satisfied? Please check.

Curriculum:
Very good (Ab.H)(Ha.M)
Good (Sh.H)
Fair( ) Poor( ) Very Poor( )

Course Management:
Very good (Ab.H)(Ha.M)(Sh.H)
Good( ) Fair( ) Poor( ) Very Poor( )

Contents:
Very good (Ab.H)(Ha.M)
Good (Sh.H)
Fair( ) Poor( ) Very Poor( )

raining Methodology:
Very good (Ab.H)(Ha.M)
Good (Sh.H)
Fair( ) Poor( ) Very Poor( )

2) If your answer is "Fair", "Poor" and "Very poor", please explain your answer briefly.

3) After the participation in the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING, have you had any personal promotion in your position.

Yes ( )
No (Ab.H)(Ha.M)(Sh.H)

In case of "Yes", and if possible, please briefly mention how and when?

(Ha.M) I had promotion prior to attending the seminar course but soon after attending the 2month EE course.

4) After the participation in the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING, have you been trying to share the knowledge and technique obtained through the training with other staff in your organization?

Yes (Ab.H)(Ha.M)(Sh.H)
No ( )

In the case of "Yes", please give an example to illustrate specifically how?

(Ab.H) Investigation of Seismicity of specific areas and the nature of associated tectonic features is carried out as a group task in the light of knowledge obtained through the Seminar.
(Ha.M) I undertook the seismic of gradation tasks of Karachi Nuclear Power Plant in a shape of a group.
(Sh.H) Through discussions

* Following (2) and (3), the meanings of "the knowledge and technique" are themselves and also include the meaning of "method of researching".

(2) Technical improvement

1) Have your knowledge and technique improved through the participation in the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

Fairly (Ab.H)(Ha.M)(Sh.H)
Somewhat ( )
No ( )

2) In case of "Fairly" or "Somewhat", please give an example(s) of the knowledge and technique newly acquired through the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING.

(Ab.H) The technique of computer based source mechanism studies is fairly helpful in studying the nature of Seismicity of a region.
(Ha.M) I learnt the retrofitting / reevaluation techniques of existing structures.
(Sh.H) Earthquake prediction and hazard assessment, specific-site hazard assessment, restoration techniques.

3) If you do not think you improved/acquired any new/obvious knowledge and technique, what do you consider the reasons? Please choose any out of the following items.

Difference between levels of training:

( ) too high, ( ) too low
( ) Language barrier
( ) No interest in the training contents
( ) Problems in method of instruction
( ) Other reasons
Please specify.

(3) Applicability

1) Have the knowledge and technique you acquired through the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING been useful and applicable to your current work? Please choose one.

(Ha.M) Fully, (Ab.H) Mostly, (Sh.H) Partly, ( ) Slightly, ( ) Not at all

2) In case of "Fully, "Mostly" and "Partly", please specify what knowledge and/or technique are useful and applicable?

(Ab.H) Most of the topics covered in the seminar were useful.
(Ha.M) Since I am looking after all seismic related tasks in my organization, the whole seminar was useful for me.
(Sh.H) Earthquake hazard assessment, counter measures to minimize loss of life and property.

3) In case of "Slightly" and "Not at all", what are the main causes?

( ) Different type of work at present
( ) Techniques level gap(s)
( ) Difference in technical background (Methods etc.)
( ) Others
Please specify.

---

4) Which subject of GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING was most beneficial to your job?

(Ab.H) Seismicity and focal mechanism studies.
(Ha.M) Seismic revaluation and retrofitting of buildings.
(Sh.H) Assessment of earthquake potential and counter measures.

5) Have you ever reported a research paper and/or presented orally at an academic meeting concerned with the knowledge and technique you had got through the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

Yes (Ab.H)(Ha.M)(Sh.H)
No ( )

In case of "Yes", please give the name of the research paper and/or the academic meeting.

(Sh.H) Modified report on Dasht-i-Goran earthquake of march 5,1990.
(Ha.M) On the basis of attained knowledge at IISEE, Tsukuba, I have presented numerous papers.

IV.TRAINING COURSE IMPROVEMENT

(1) Time allocation: Training course as a whole and among each of the program

1) Overall course duration (Present course: 1.3 months)

How do you evaluate the whole length. Please choose one.

Too long ( )
Fair (Ab.H)(Ha.M)(Sh.H)
Too short ( )

In case you think it is "Too long:" or "Too short", what do you think is the appropriate length?

( ) months

Reasons

(Sh.H) Total duration of the seminar course, I participated in ,was from Nov.30,1992 to Dec.20,1992.Only 12days were assigned to technical session / visits.This period, in my pinion, was too short.

2) Time allocation for each programs

Please write a comment/opinion regarding the length of Lectures and Field Trips if any:

(Ab.H) Appropriate
(Ha.M) The Seminar can be more useful if the seismic aspects starting how the study of a fault to the acceleration experienced by on equipment of a plant are covered.

(2) Subject(s) to be added or deleted

*Subject(s) means the contents of curriculums.

1) Considering the circumstances/conditions at your home country, what kind of training subject(s) do you think to be more emphasized and/or added?

(Ab.H) Investigation of Seismicity with a view to adopt measures for mitigation of seismic risk.
(Ha.M) Soil Structure interaction analysis for generation of floor response spectra.
(Sh.H) Time allocation was appropriate.

2) If you consider some training subject(s) not needed in the program, what are they?

(Ab.H) The choice of training subjects was quite adequate in view of the individual interest of the participants.
(Ha.M) The country presentations should be realized.
(Sh.H) Loss of life on account of earthquakes occurs mostly due to collapse of adobe type houses which are common in the rural areas. Low-cost techniques for strengthening the such dwellings need to be emphasized.

3) The field trips include observation/visit of institutes, universities, factories.

What kind of spot (including universities, institutes, construction spot and so forth) are preferable for field trips? What do you like to observe and learn there?

(Ab.H) Visits to construction spots are preferable in order to practically observe the steps/measures taken to mitigate the seismic risk of the vital facilities.
(Ha.M) Surface faulting areas, retrofitted buildings which provide the information on the type of damages etc.

(Sh.H) Subjects were appropriate.

(3) Suggestion for the improvement of future programs

1) If you have any other comments/opinions as to the improvement of GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING, please write here.

(Ab.H) Practical assignments to the participants will possibly prove more useful in understanding the new techniques.
(Ha.M) The orientation period for short courses/seminars should be reduced and all seismic aspects should be covered.
(Sh.H) More emphasis may be given to minimize loss of life and property with reference to conditions prevailing in developing countries.

2) What do you think of the training course as the refreshment training of the group training course in Seismology and Earthquake Engineering II? Are the objectives or contents appropriate?

(Ab.H) The training course is a sort of refreshment training and the objectives are appropriate.
(Ha.M) Refresher courses are required as the field of earthquake engineering is evolving.
(Sh.H) Fairly appropriate.

V. JICA AFTER-CARE SERVICES

(1) Requests as to the follow-up for the ex-participants of the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

1) After the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING, have you contacted your host institute in Japan?

Yes (Sh.H)(Ha.M)
No (Ab.H)

2) If "Yes", Please write what kind of information did you got or give through that contact?

(Ha.M) Could take past due to my busy schedule.
(Sh.H) Reply not received.

3) Please specify your requests as to JICA's follow-up for ex-participants and its support after the training?

(Ab.H) Ex-participants may be provided with opportunities, through free of cost supply of relevant literature, to learn about the latest development/research in the field of Seismology and Earthquake Engineering.
(Ha.M) Follow up courses/seminars should be arranged.
(Sh.H) Report on recent earthquake in Japan.

(2) Alumni Association of JICA Ex-participants

1) Are you a member of Alumni Association of JICA Ex-participants?

Yes (Ha.M)
No (Ab.H)(Sh.H)

2) If "Yes", what activities do you take part in?

(Ha.M) Could not take part in due to my busy schedule.

VI. YOUR IMPRESSION ON CURRENT SEISMOLOGY,EARTHQUAKE ENGINEERING AND DISASTER PREVENTION TECHNOLOGY IN JAPAN

Please write down freely and frankly.

(Ab.H) Japan has made great achievements in the field of Seismology / Earthquake Engineering and the successful application of the related technology to construction of earthquake-resistant structures.The relatively low damage due to disastrous earthquakes in the recent past is a remarkable example of the same.

(Ha.M) Unfortunately, I am not well aware of their current technology as I participated in the seminar almost 7 years ago.

(Sh.H) The technology is highly advanced and reflect dedicated research work by the Japanese scientists.

VII.REQUEST TO JICA

If you have any requests to JICA, please specify here.

(Ab.H) Ex-participants may be provided with opportunities through participation in the Seminars / Workshops to acquaint themselves with the latest development in the field of Seismology and Earthquake Engineering.

(Ha.M) Earthquake engineering is an evolving field and extremely important for the design of Nuclear Power Plants. Since Japan possesses the best technological know how in this area, it will be very useful if advanced courses are arranged in this area for exparticipants and updated literature is continuously by passed on to us.

(Sh.H) JICA is requested to continue this useful group training course.

FOLLOW-UP SURVEY FOR EX-PARTICIPANTS OF TRAINING COURSE
TSUKUBA INTERNATIONAL CENTER (TBIC)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AND
INTERNATIONAL INSTITUTE OF SEISMOLOGY AND EARTHQUAKE ENGINEERING
(IISEE), BUILDING RESEARCH INSTITUTE (BRI)

QUESTIONNAIRE FOR ORGANIZATION CONCERNED

ON
GROUP TRAINING COURSE
IN
THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

I. ORGANIZATION OUTLINE

(1) Name, type of Organization and size

(MSSP) Micro Seismic Studies Programme-Pakistan Atomic Energy Commission
(PMD) Pakistan Meteorological Department
(PAEC) Pakistan Atomic Energy Commission

Address:

(MSSP) Pinstech P.O. Nilore, Islamabad,Pakistan
(PMD) P.O.Box No.8454, University Road, Karachi, Pakistan, 75270
(PAEC) P.O.Box No.1133, Islamabad, Pakistan

	(Telephone)	(Facsimile)	(Cable/Telex)	(E-mail)
(MSSP)	92-51-9290276	92-51-9290275		qaisar@mssp.org.pk
(PMD)	92-21-8112223		28932 Met Hq Pk	pmd@paknet2.ptc.pk
(PAEC)	051-9205600	051-9217864		hamid@pearl.sdnpk.undp.org

2) Please indicate the type of your organization. Please choose on the following items.

a) Governmental (PMD)
b) Semi-Governmental (MSSP)
c) Private ( )
d) Other Type (PAEC) Autonomous

What is it? Please specify.

(PMD) Aquisition and distribution of meteorological information
(PAEC) Develop Nuclear Power/energy

3) How many staffs does your organization have?

Number of staffs:

1. Total

(MSSP) 96
(PMD) 2192
(PAEC) over 10,000

2. Research/Technical

(MSSP) 35
(PMD) 2072
(PAEC) over 8,000

3. Administration

(MSSP) 61
(PMD) 120
(PAEC) over 2,000

(2) Activities, responsibilities and organization chart

1) What are the main activities and responsibilities of your organization?

(MSSP) 1) Operation/maintenance of Seismic network for monitoring of seismic activity and acquisition of related data.
2) Analysis of seismic data to investigate the Seismicity/tectonics of specific regions.

(PMD) Main activities and responsibilities of Pakistan Meteorological is enclosed as Annex-I. Organization chart is enclosed as Annex-II

(PAEC) I work in one of the departments of PAEC, called Chashma Nuclear power Project (CHASNUPP). It envelops Nuclear Power and currently constructing a Nuclear Power plant (300mwe,pwr) of Chashma. I am responsible for siting & structure ale sign of this plant.

* If you have your organization chart, please attach it.

(3) Relation with Japan

1) How many of your staff members have participated in JICA training course in the past? And what were the Courses they participated in.

1.Total

(MSSP) 06(six)
(PMD) 14
(PAEC) One from CHASNUPP in Earthquake Engineer Course

2.GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

(MSSP) One
(PMD) 11

3.Other JICA's Courses

(MSSP) 05(five)
(PMD) GTC in Meteorology
(PAEC) 3/4

2) Does your organization have any joint project or program (research/training) with Japanese institute(s) except JICA?

Yes (MSSP)(PMD)
No (PAEC)

If it does, could you please specify the name of program and/or project?

(MSSP) Garnet Project. Pakistan is participating in the Global Alliance Regional Seismic Project (GARNET) under IISEE, BRI, Tsukuba, JAPAN.

3) Does your organization have any relationship with any other countries similar to JICA's training?

Yes (PAEC)
No (MSSP)(PMD)

Please specify the name of program and/or project, if possible.

(PMD) PMD had already requested to JICA for the up gradation of Seismic Network of Pakistan.
(PAEC) 1.IAEA (International Atomic Energy Agency)
2.Wano (World association of nuclear operators)

4) Do you have any request about a joint program and/or project with Japanese research institute?

Yes (PMD)(PAEC)
No (MSSP)

In case of "Yes", what is it?

(PAEC) A project in structural testing with BRI world be very useful for our division provided finances are arranged.

II. APPLICATION AND NOMINATION OF CANDIDATE TO JICA TRAINING COURSE

(1) Procedure of selection

1) Please let us know the procedure of candidate nomination

(PAEC) The organization advertise for candidate and judge from his/her aptitude and qualification
( ) After judging from staff's aptitude and qualification, the organization order the candidate to go to Japan
(MSSP) Others (Please specify the procedure below).
(MSSP) We get JICA training courses through Economic Affairs Division Govt. of Pakistan.
(PMD) Seniority, qualification and experience in the field.
(PAEC) The final selection is however made by the Ministry after nominations from different organizations are received by them.

2) How long did it take you to choose the final candidate(s) for the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

within one month (PMD)(PAEC)
(PAEC) for choosing the candidate in our organization

more than one month (MSSP)

If it took more than one month, how many months?

(MSSP) (two)months

3) What are the standards and qualification of candidate selection for the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

Please choose any out of the following.

present post of candidate	(PAEC)
research record	(PAEC)
service record	(MSSP)(PMD)(PAEC)
educational background intention	(MSSP)(PMD)(PAEC)
interchange between the training institute	(PMD)
others (Please specify below.)	( )

---

(2) General Information (G.I.): brochure of the course from JICA

1) Did you get enough information from the "G.I." for selecting final candidate(s) for the training course?

Should any other piece of information be added to the "G.I."?

Yes, it is enough. (MSSP)(PMD)(PAEC)
No, it is not enough.

In cases of "No", please specify the information to be added.

---

2) Do you usually receive "G.I." well in advance?

Yes (MSSP)(PMD)(PAEC)
No, it arrives late.

(3) Number of prospective applicants/candidates

1) How many applicants/candidates do you have every other year for the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

(MSSP)	Two-average One
(PMD)	Two
(PAEC)	One from PAEC is nominated but there are more candidates from other organizations.

2) How many staffs in your organization do you consider are adequate for participation in the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING in the future?

(MSSP)	Eight(08)
(PMD)	Twenty
(PAEC)	At least two/each Seminar from our organization

III. EVALUATION OF THE TRAINING PROGRAM

(1) Results/achievements of the training

Have you found any good results/achievements in your staff after the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING at the point of the following? Please specify if available.

a) the method of researching

(MSSP)	After observation of research work at various Institutes in Japan, the participants has developed a broader outlook in carrying his research work.
(PAEC)	V. good results

b) the knowledge/technique

(MSSP) The knowledge/technique acquired during the training has been quite helpful in the field of Seismology

(PMD) The ex-participants of this GTC have latest up-to-date knowledge of this field and they are capable to train other staff of PMD.

(PAEC) V. good results

c) Others

---

(2) Applicability of the knowledge/technique obtained through the training in Japan

1) Are ex-participants applying the knowledge/technique obtained through the training in Japan to their works back at home country?

a lot (MSSP)(PMD)(PAEC)
to some extent ( )
no application ( )

2) If there are some examples of good application, please specify them.

(MSSP) The knowledge obtained though training courses is being applied to monitor the Seismicity of specific regions, estimation of the Source parameters & evaluation of Seismic Risk.

(PMD) After obtaining GTC, the officers are sharing their knowledge and imparting training to the other staff members of the department.

(PAEC) I applied the attained knowledge to its optimum in the implementation of 300mwe chashhma nuclear power project & seismic up gradation of Kasaeli plant.

3) In case of "no application", why do you think the reason?

---

4) Do you try to assign ex-participants to responsibilities/posts where they can make good use of the knowledge/technique obtained through GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

Yes (MSSP)(PMD)(PAEC)
No ( )

5) In case of "Yes", please give an concrete example.

(MSSP) Individuals with specific know-how are given relevant assignments in group tasks.

(PMD) Ex-participants are posted at the Seismic Section of Geophysical Centre, Quetta which is the main office of this field.

(PAEC) Mr. Awia (EE93-94) was assigned to the soil structure interaction studies of CHASNUPP.

(3) Expectations for future JICA programs

1) Would you like to continue sending your staff to participate in GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

Yes (MSSP)(PMD)(PAEC)
No ( )

2) In case of "Yes", what/how intense are your expectations?

(MSSP) It is expected that a greater number of participants will be accommodated in the future JICA Programme in order to keep them abreast with the latest developments and techniques in the field of laying out a broader base in the said field.

(PMD) PMD wants to avail this opportunity as far as possible.

(PAEC) JICA & IISEE are doing a very good job. The usefulness of the course directly depends on the participants as how seriously he/she takes it as the knowledge is abuandantly available in IISEE/BRI.

(4) Compare with other programs (other similar training offered by another organization)

How do you evaluate GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING compare with other one?

- level of content:
  ( ) high, ( ) low, (MSSP)(PAEC) neither,
- length:
  (PAEC) long, ( ) short, (MSSP) neither,
- quantification:
  ( ) difficult, ( ) easy, (MSSP)(PAEC) neither
- number of participants
  ( ) many, (CNPP) not many, (PAEC) neither

IV. IMPROVEMENT OF FUTURE GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

(1) Knowledge or technique that your organization hopes participants to obtain from the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING.

In future, what sort of knowledge/technique would you expect your training participants to acquire from the future GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING?

(MSSP) We expect our participants to learn the latest developments in this particular field and the relevant instrumentation.

(PMD) PMD hopes that participants of this GTC will know the latest know how and techniques and able to cope with the requirements of the field.

(PAEC) Determination of seismic input for a soil
Soil structure interaction analysis techniques for generation of floor response.

(2) Improvements of the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING

If you have any opinions/comments regarding the improvements of future courses, please specify as to the following.

a) Duration of program
(MSSP) appropriate
(PMD) sufficient
(PAEC) It is fine

b) Curriculums
(MSSP) appropriate

(PMD) It may be designed in such a way that it may fulfill the requirements of each and every participant.

(PAEC) Subjects from the study of a fault to the acceleration experienced by an equipment should be covered.

c) Contents of training

(MSSP) appropriate

(PMD) It is proposed that contents of training should be more practically oriented.

d) Technique levels

(MSSP) appropriate

(PMD) It is proposed that participants may be provided an opportunity to work at some seismic observatory during his GTC in Japan.

e) Others

(PMD) No

V. JICA AFTER-CARE

JICA conducts after-care services for ex-participants of the GROUP TRAINING COURSE IN THE SEMINAR ON SEISMOLOGY AND EARTHQUAKE ENGINEERING. If you (as an organization) have any opinions/requests concerning this services. Please specify here.

(MSSP) Ex-participants may please be allowed to order the literature about the latest research / development in the field of Seismology and Earthquake Engineering free of cost or on confessional(?) rates.

(PMD) JICA may provide latest literature so that ex-participants can update their knowledge.

VI. MAJOR PROBLEMS OF TECHNOLOGY FOR EARTHQUAKE DISASTER PREVENTION MEASURES IN YOUR COUNTRY

Please describe the present problems in your country and/or in your organization.

(MSSP) In our country seismic design criteria is followed only for vital facilities like dam and nuclear power plants. No such practice is observed in ordinary construction. This is because of non-existence of any legal authority/organization in this respect and hence the lack of awareness in the general public about the seismic hazard.

(PMD) PMD has a network of five Seismic Observatories which were established in sixties.

PMD wants to replace old types of instruments with new ones but it is not possible for PMD to purchase new instruments due to insufficient resources. JICA is requested to provide latest seismic instruments. PMD also wants to intensify its Seismic Network. It is suggested that JICA may send expert mission to Pakistan to study the requirement of Pakistan and on the basis of that report, suitable action may be taken. Earthquake Disaster Prevention measures are not being dealt by PMD. These are the responsibilities of Emergency Relief Cell of cabinet Division of Government of Pakistan.

VII. REQUEST TO JICA

If you have any request to JICA, please specify here.

(MSSP) Pakistan, being located at the junction of three tectonic plates, is an earthquake prone country. But the general awareness about the seismic hazard is lacking mainly because of shortage of trained persons in the field of Seismology & Earthquake

Engineering. Japan , with sufficient resources and high level of technology/know-how in the said field is playing an excellent role in sharing the knowledge with developing countries. It will be highly appreciated if greater number of participants from Pakistan are allowed to participate in these training courses. The upper age limit for participants may be increased in this regard to allow the Senior Scientists/Engineers from our country to participate in these courses to keep themselves abreast of the latest developments in the said field.

(PMD) It is submitted that no officer of PMD has been attended this GTC for the last ten years. Due to the shortage of trained staff in the field of Seismology in PMD, it is requested that at least two seats for the Seismology Course may kindly be allocated for Pakistan and one of the officers may kindly be nominated from PMD every year.

* About the person filled in the questionnaire

Date:

(MSSP) 10-06-1998
(PMD) 12-06-1998

Position:

(MSSP) Director
(PMD) Senior Meteorologist

Printed name:

(MSSP) Dr.Mohammad Quisar
(PMD) Arif Mahmood

BRIEF REPORT OF THE FOLLOW-UP STUDY TEAM FOR EX-PARTICIPANTS OF THE TRAINING COURSE IN SEISMOLOGY AND EARTHQUAKE ENGINEERING

The Japanese Follow-up Study Team (hereinafter referred to as the "Team"), organized by the Japan International Cooperation Agency ("JICA") and headed by Dr. Izuru OKAWA, Head, Building Engineering Division, International Institute of Seismology and Earthquake Engineering ("IISEE"), Building Research Institute("BRI"), Ministry of Construction , visited the Republic of Turkey from January 31 to February 6, 1999, for the purpose of studying the actual circumstances of the ex-participants' activities and the dissemination of the technology and knowledge gained from the Group Training Course in Seismology and Earthquake Engineering (the "Training Course"), and of conducting the open seminar to introduce the latest technology and knowledge concerning seismology and earthquake engineering and obtaining feedback to improve future training courses in Seismology and Earthquake Engineering.

During their stay in the Republic of Turkey, the Team carried out a field study, including a visit to ex-participants' organizations and other related institutions, shared views and opinions, and had discussions with ex-participants and others, including officials of the Government of the Republic of Turkey and ex-participants' supervisors, on technological and administrative matters regarding the Training Course, so as to evaluate the effectiveness of the Training Course from various viewpoints.

As a result of the field study and discussions, before leaving the Republic of Turkey, this brief report has been prepared to summarize the results of the study, and to present the suggestions and recommendations offered by the Team for the benefit of the respective institutes in the Republic of Turkey as follows.

I. INTRODUCTION

In the recent years, the earthquake disasters, especially in urban areas, have been getting more serious in accordance with the world-wide rapid

urbanization. In order to protect citizens' lives and properties from these disasters and to achieve the constant development, it is quite necessary to monitor the seismological activities and set up the proper disaster prevention measures. Our group training course in Seismology and Earthquake Engineering, as well as the Seminar, are designed to nurture engineers and researchers who can mitigate and prevent the earthquake disaster in their respective countries.

II. OBJECTIVE OF THE TEAM

The Team's main purpose is to advise ex-participants and other members of the ex-participants' organizations and related institutions on technical problems in the field of seismology and earthquake engineering through the open technical seminar, as well as to study the ex-participants' activities through discussions in order to evaluate the effectiveness of the Training Course.
In addition, the Team surveys the future training needs, considering the related and incidental fields, in order to improve and develop the Training Course and strengthen both the regional and country-specific approaches of JICA's Training Programs.

III MEMBER OF THE TEAM

(1) Dr. Izuru OKAWA (Team Leader)
Head, Building Engineering Division,
International Institute of Seismology and Earthquake Engineering,
Building Research Institute, Ministry of Construction

(2) Dr. Tatsuhiko HARA (Technical Advisor)
Seismologist, Applied Seismology Division,
International Institute of Seismology and Earthquake Engineering,
Building Research Institute, Ministry of Construction

(3) Mr. Susumu YUZURIO (Training Planning)
Staff, First Programme Division,
Tsukuba International Centre,
Japan International Cooperation Agency

IV. FOLLOW-UP STUDY TEAM'S ITINERARY

Sunday, January 31
1. Arrival in Ankara

Monday, February 1
1. Visit to JICA Turkey Office
2. Visit to Japanese Embassy
3. Visit to State Planning Organization(SPO)
4. Visit to Middle East Technical University(METU), Civil Eng. Dept.

Tuesday, February 2
1. Visit to Ministry of Public Works & Settlement(MPWS), Directorate of Disaster Affairs
2. Visit to Ministry of Public Works & Settlement(MPWS), Directorate of Technical Research & Implementation

Wednesday, February 3
1. Hold the Seminar at JICA Turkey Office

Thursday, February 4
1. Visit to Istanbul Technical University(ITU), Civil Engineering Faculty

Friday, February 5
1. Visit to Bogazici University(BU), Kandilli Observatory

V. SUMMARY OF THE FOLLOW-UP STUDY

The Team conducted the survey in Republic of Turkey from Feb. 2 to Feb. 6 and interviewed 14 ex-participants at four organizations and visited four ex-participants' organizations (METU, MPWS, ITU, BU). The Team also visited the State Planning Organizations, which selects the appropriate organizations and distribute the general information to them. The result of the study are mentioned below:

1. Effectiveness of the Training Course and ex-participants' activities

The Team has confirmed through the interviews that the training was effective for updating the technical knowledge of participants

and beneficial to the organizations for their research activities. The field trips to the building construction sites and the earthquake observation systems where the state-of-the-art technology is introduced are especially considered to be beneficial and useful for the participants.

The Team has confirmed that they have been developing the knowledge and technology which were gained through the Training Course and utilize them effectively in their research activities, and they have been actively disseminating the acquired information, technology, materials and experience to their colleagues as well. The Team highly appreciates their attitude.

At Middle East Technical University, the Team interviewed Prof. Polat Gulkan, Ms. Filiz Sarifakioglu from Teknik Servis and Mr. Turel Gur (Research Associate, Graduate student)

It was requested by them that subjects on the new technology such as structural response control and seismic risk assessment should be added or increased in the future course.

At Ministry of Public Works and Settlement General Directorate of Disaster Affairs, the Team interviewed four ex-participants : Mr. Salih Karakisa performed his individual study at Kyushu University. His supervisor was Prof. Suzuki, and he learned the technique of focal mechanism determination. After he came back to Turkey, he continued his study, and obtained the master degree. Mr. Ramazan Demirtas conducted his individual study at Geological Survey of Japan, and his supervisor was Dr. Okumura. His main field is paleoseismology. He have continued paleoseismological study after coming back to Turkey, and what he learned during his individual study is useful. Mr. Adem Somer learned the way to calibrate a seismometer in his individual study. His supervisor was Dr. Yokoi at IISEE. He continued his study after coming back to Turkey, and obtained the master degree. The Team also discussed with Mr.N. Bayulke, Mr. C. Kocaman and Mr. A. Hurata.

Through the discussion, it was requested by them that they hope they will be given opportunities to visit Japan again to update their knowledge on Earthquake Engineering and that publications such as the earthquake damage survey reports, and new technology in Japan are sent to ex-participants.

At the General Directorate of Technical research and Implementation, Ministry of Public Works and Settlement, the Team interviewed Mr. Feridun Duygluer, General Director. He requested to the Team that subject related to earthquake disaster mitigation technology in urban planning is added.

At the Istanbul Technical University, the Team interviewed Prof. Hasan Boduroglu, and Mr. E. Can Sipahi, Civil Engineer of TEK-YEN, private firm.

Through the discussion, it was requested that subject related to repair and strengthening of structure is added, since such technology is necessary for the restoration of damaged area in recent earthquake.

At the Geophysics Department, Kandilli Observatory of Bogazici University, the Team interviewed two exparticipants called Prof. S. Balamir Ucer and Dr. Serif Baris. Both of them stressed the importance of the training course. Dr. Serif Baris suggested that for experienced participants the basic subjects presented in the first one or two months are not necessary and proposed that participants should be divided into two groups after examinations in the beginning of the course.
They and the Team members confirmed the importance of the communication via the internet for effective exchange of information.

At Earthqauake Engineering Department, Kandilli Observatory, the Team interviewed Prof. Ozal Yuzugullu, Prof. M. Nuray Aydinoglu and Prof. Mustafa Erdik. They appreciated the training course expressing that the current research activity there is partly indebted to the past technology transfer from Japan to Turkey conducted through this training course. They also promised their strong supprot to this training courses in the future.

2. Open Seminar

The Open Seminar was held on Feb. 3 at JICA Turkey Office in order to introduce the latest research results and JICA's cooperation programs to ex-participants and related officials. The seminar was comprised of:

(1) 1995 Kobe Earthquake and Its Implications to Current Seismic Design of Buildings in Japan. by Izuru OKAWA

(2) What do we do using Broadband Seismograms?
by Tatsuhiko HARA

(3) JICA's Technical Cooperation Programs in Seismology and Earthquake Engineering. by Susumu YUZURIO

3. The items suggested by the ex-participants for the improvement of the Training Course are:

(1) a periodical Follow up training of the ex-participants should be established,
(2) the individual training duration should be extended,
(3) subjects such as Structural Response Control, Techniques of Repair and Retrofit of Structures and Earthquake Disaster Prevention Planning of Urban Areas should be increased,
(4) the relevant Information(Kobe earthquake, new technology in Japan and so forth) should be distributed,
(5) practical contents should be more emphasized (than theoretical ones),
(6) the General Information should be distributed every year,
(7) numbers of the examinations should be decreased (since the levels of participants are considerably different),

These valuable suggestions from the ex-participants will be considered carefully by the staffs involved in the Training Course at JICA and IISEE.

VI. SUGGESTIONS AND RECOMMENDATIONS MADE BY THE TEAM

As a result of the discussion and the field study, The Team has made the following recommendations to the ex-participants and their organizations.

(1) Since the internet is available, it is not difficult to collect information on earthquakes in Japan. More intensive communication via the internet (e.g., e-mail, home page) is recommended. The IISEE staffs can inform the appropriate web-sites. In addition, the IISEE established the Web Page recently, frequent accesses to it (http://iisee.kenken.go.jp/) are recommended. The comments on how the home page should be improved are highly appreciated.

(2) The Team considers that the continuous participation to the Training Course is important. Although it is becoming easy to gather information on earthquakes using the internet, in order to utilize it most effectively, deep understanding of the employed theories and techniques is necessary, which is difficult to be achieved without the Training Course.

(3) It is expected that the ex-participants' organizations will provide the further necessary support, both technical and financial, to the ex-participants in order to develop the ex-participants' research abilities utilizing the knowledge and technology transferred through the Training Course.

(4) The ex-participants organizations are expected to make the utmost efforts to promote the dissemination of technology and knowledge transferred through the Training Course to other appropriate institutes, and take the initiatives to establish the close relationships among the related organizations so that they can share the information and collaborate one another effectively.

(5) JICA has various schemes for technical cooperation, such as Training Programs for Overseas Participants, Technical Expert Dispatch Programs, Equipment Provision Programs, Project-type Technical Cooperation Programs, Development Studies, Grant aid Programs and JOCV activity, which are available upon official request from the Turkish government and approval of the Japanese government. The Team expects the related institutes to utilize these programs so that the effect of the Training

Course will be strengthened and achieve the further development in this field.

Lastly, the Team would like to express the deepest appreciation to all the staffs who kindly shared their precious time to have discussions with the Team members. The result of the survey will be reflected to the improvement of the Training Course in the future.

February 6th, 1999

Dr. Izuru OKAWA,

Team Leader,
Follow-up Study Team
for Ex-participants of the Group Training Course in Seismology and Earthquake Engineering,
Japan International Cooperation Agency(JICA)

BRIEF REPORT
OF THE FOLLOW-UP STUDY TEAM
FOR EX-PARTICIPANTS OF THE TRAINING COURSE
IN SEISMOLOGY AND EARTHQUAKE ENGINEERING

The Japanese Follow-up Study Team (hereinafter referred to as the "Team"), organized by the Japan International Cooperation Agency ("JICA") and headed by Dr. Izuru OKAWA, Head, Building Engineering Division, International Institute of Seismology and Earthquake Engineering ("IISEE"), Building Research Institute, ("BRI"), Ministry of Construction, visited the Islamic Republic of Pakistan from February 7 to February 11, 1999, for the purpose of studying the actual circumstances of the ex-participants' activities and the dissemination of the technology and knowledge gained through the Group Training Course in Seismology and Earthquake Engineering (the "Training Course"), and of conducting the open seminar to introduce the latest technology and knowledge regarding seismology and earthquake engineering and of obtaining feedback to improve future training courses in Seismology and Earthquake Engineering.

During their stay in the Islamic Republic of Pakistan, the Team carried out a field study, including a visit to ex-participants' organizations and other related institutes, shared views and opinions, and had discussions with ex-participants and others, including officials of the Government of the Islamic Republic of Pakistan and ex-participants' supervisors, on technological and administrative matters of the Training Course, so as to evaluate the effectiveness of the Training Course from various viewpoints.

As a result of the field study and discussions, before leaving the Islamic Republic of Pakistan, this brief report has been prepared with a view to summarize the results of the study, and to present the suggestions and recommendations offered by the Team for the benefit of the respective institutes in the Islamic Republic of Pakistan.

I. INTRODUCTION

In the recent years, the earthquake disasters, especially in urban areas, have been getting more serious in accordance with the worldwide rapid urbanization. In order to protect citizens' lives and properties from these disasters and to achieve the constant development, it is quite necessary to monitor the seismological activities and set up the proper disaster prevention measures. Our group-training course in Seismology and Earthquake Engineering, as well as the group-training course in the

Seminar in Seismology and Earthquake Engineering, are disigned to nurture engineers and researchers who can contribute to the mitigation and prevention of the earthquake disaster in their respective countries.

II. OBJECTIVE OF THE TEAM

The Team's main purpose is to advise ex-participants and other members of the ex-participants' organizations and related institutes on technical problems in the field of seismology and earthquake engineering through the open technical seminar as well as to study the ex-participants' activities through discussions in order to evaluate the effectiveness of the Training Course. In addition, the Team surveys the future training needs, considering the related and incidental fields, in order to improve and develop the Training Course and strengthen both the regional and country-specific approaches of JICA's Training Programs.

III. MEMBER OF THE TEAM

(1) Dr. Izuru OKAWA (Team Leader)
Head, Building Engineering Division,
International Institute of Seismology and Earthquake Engineering,
Building Research Institute, Ministry of Construction

(2) Dr. Tatsuhiko HARA (Technical Advisor)
Seismologist, Applied Seismology Division,
International Institute of Seismology and Earthquake Engineering,
Building Research Institute, Ministry of Construction

(3) Mr. Susumu YUZURIO (Training Planning)
Staff, First Programme Division,
Tsukuba International Centre,
Japan International Cooperation Agency

IV. FOLLOW-UP STUDY TEAM'S ITINERARY

Sunday, February 7
1. Arrival in Islamabad

Monday, February 8
1. Visit to JICA Pakistan Office

2. Visit to Economic Affairs Division, Ministry of Finance and Economic Affairs (EAD)
3. Visit to Pakistan Atomic Energy Commission (PAEC)
4. Visit to Japanese Embassy

Tuesday, February 9
1. Visit to the Pakistan Meteorological Department (PMD)
2. Visit to the National Housing Authority, Ministry of Housing & Works
3. Meeting with ex-participants

Wednesday, February 10
1. Hold the Seminar at the Marriott Hotel
2. Fly to Quetta

Thursday, February 11
1. Visit to Geological Survey of Pakistan, Ministry of Science and Technology
2. Leave for Japan

V. SUMMARY OF THE FOLLOW-UP STUDY

The Team conducted the survey in the Islamic Republic of Pakistan from Feb. 8 to Feb. 11. At first, the Team visited the Economic Affairs Division (EAD), Ministry of Finance and Economic Affairs for the courtesy visit. The EAD selects the appropriate organizations and distribute the general information (GI) to them. The Team expressed the appreciation for their cooperation and assistance to our training course to date. The Team discussed with Mr. S. M. Hasan Zaidim, Deputy Secretary to the division and his assistant Dr. Rashid Manzoor mainly on the destination of the General Information of the course, in view of the limited number of organizations of candidates. They explained that there had been no applications from universities although they had distributed the GI's to the related institutions including universities. They added that they could send GI's to additional organizations if the list of the organizations is given to them. The Team visited three ex-participants' organizations, i.e., the Pakistan Atomic Energy Commission (PAEC), the Pakistan Meteorological Department (PMD), the Geological Survey of Pakistan (GSP)

The Team visited the PAEC, in Islamabad. The Team discussed with Dr. Hasibullah, Director of International Affairs & Training and person in charge of the dispatch of the participants, Dr. Muhammad Qaisar, Director and Dr. Fazal Elahi, Deputy Director.

They requested the Team that the General Information of the Training Course should

reach them earlier than ever, so that they could have enough time to select and prepare for the dispatch. They expressed that they are quite satisfied with the contents of Training Course given to the participants and evaluate it very beneficial to them.

The Team visited the PMD in Islamabad. They discussed with Dr. Qamar-Uz-Zaman Chaudhry, Director General, Mr. Muhammad Rafique, Director and five ex-participants. They explained the ex-participants had disseminated the knowledge obtained in Japan to the staffs in the organizations and took important positions utilizing the knowledge acquired in Japan after completing the course. They requested the Team to accept their staff in the course as before, since there has been no participants from the department since 1989.
The Team also visited the GSP in Quetta. They observed the facilities there. The Team interviewed 14 ex-participants in Islamabad. The result of the interviews are mentioned below:

1. Effectiveness of the Training Course and ex-participants' activities

The ex-participants of Pakistan Meteorological Department (PMD) whom the Team interviewed are Mr. Muhammad Rafiq, Abdul Qayoom Khan, Umar Hayat Shalib, Arif Mahmood, and Iftikhar Hussain Shah (Bukhari). Through the Training Courses, they learned the magnitude determination, focal mechanism determination, and seismic risk analysis. They have been applying their knowledge after they came back to Pakistan. Since Mr. Bukhari participated in the course during 1988-89, there is no participant from PMD. They hoped to update their knowledge on seismology through the Training Course.

The ex-participants of Geological Survey of Pakistan (GSP) whom the Team interviewed are Mr. Muhammad Rashid Pervaiz Mahre and Mr. Muhammad Asghar. They Performed their individual studies with Dr. Hurukawa of the IISEE, respectively.

The ex-participants of Pakistan Atomic Energy Commission whom the Team interviewed are Mr. Javed Iqval, Mr. Karam Khan, Mr. Hamid Mahmood, Mr. Tariq Mahmood, Mr. Abdul Hakim, and Mr. Shehzad Atta Shaheen. They learned many techniques of seismology and earthquake engineering, and have been applying and disseminating them after they came back to Pakistan. Mr. Tariq Mahmood called for the JICA support for their entering Japanese universities.

The ex-participant of Water and Power Development Authority Pakistan is Mr. Nadeem UL Haq. He performed his individual study with Dr. Imoto of NIED, and has continued his subject after the training. He stressed the significance of the Training Course, and raised the subjects Computer Programming, Source Mechanism, and Earthquake Prediction as the most beneficial subjects for him.

The ex-participant of National Engineering Services Pakistan whom the Team interviewed is Mr. Yawer Saeed. he performed the seismic risk analysis of Pakistan utilizing GIS as his individual study.

The Team has confirmed through the interviews that the training was effective for updating technical knowledge of participants and beneficial to the organizations for their research activities. The lectures and practices on determination of source mechanisms and rupture processes are considered to be highly beneficial and useful for the participants and their organizations.

The Team has confirmed that they have been developing the knowledge and technology which they gained through the Training Course and utilize them effectively in their research activities, and that they have been actively disseminating the acquired information, technology, materials and experience to their colleagues as well. The Team highly appreciates their attitude.

2. Open Seminar

The Open Seminar was held on Feb. 10 at the Marriott Hotel in order to introduce the latest research results and JICA's cooperation programs to ex-participants and related officials. The seminar was comprised of:

(1) The 1995 Kobe Earthquake and Its Implications to Current Seismic Design of Buildings in Japan. by Izuru OKAWA

(2) What do we do using Broadband Seismograms?
by Tatsuhiko HARA

(3) JICA's Technical Cooperation Programs in Seismology and Earthquake Engineering. by Susumu YUZURIO

3. The items suggested by the ex-participants for the improvement of the Training Course are:

(1) It will be more beneficial for the training when some academic degrees on completion of the course are considered.

(2) Practical training is needed as well as the theoretical one.

VI. SUGGESTIONS AND RECOMMENDATIONS MADE BY THE TEAM

As a result of the discussion and the field study, the Team has made the following recommendations to the ex-participants and their organizations.

(1) More intensive communication via the Internet (e.g., e-mail, Home page) is recommended. The IISEE established the Web Page recently, and frequent accesses to "http://iisee.kenken.go.jp/" are welcome. The comments of how the home page should be improved are highly appreciated.

(2) The training should contribute to the upgrading of the seismic performance of general structures by reflecting the knowledge to revise the building code or provisions and strengthening of the structures.

(3) It is expected that the ex-participants' institutions will provide the further necessary support, both technical and financial, to the ex-participants in order to develop the ex-participants' research abilities utilizing the knowledge and technology transferred through the Training Course.
(4) The ex-participants organizations are expected to make the utmost efforts to promote the dissemination of technology and knowledge transferred through the Training Course to other appropriate institutes, and to take the initiatives to establish the close relationships among the related organizations so that they can share the information and collaborate one another effectively.
(5) JICA has various schemes for technical cooperation, such as Training Programs for Overseas Participants, Technical Expert Dispatch Programs, Equipment Provision Programs, Project-type Technical Cooperation Programs, Development Studies, Grant Aid Programs and JOCV activity, which are available upon official request from the Government of the Islamic Republic of Pakistan and approval of the Government of Japan.

The Team expects the related institutes to utilize these programs so that the effect of the Training Course will be strengthened and they can achieve the further development in this field.

Lastly, the Team would like to express the deepest appreciation to all the staffs who kindly shared their precious time to have discussions with the Team members.
The result of the survey will be considered carefully and reflected to improve the Training Course in the future.

February 11th, 1999

Dr. Izuru OKAWA,

Team Leader,
Follow-up Study Team, for Ex-participants of the Group Training Course in

Seismology and Earthquake Engineering,
Japan International Cooperation Agency (JICA)

平成10年度

（第10回）

地震工学IIコース
研修実施要領

平成10年8月

国際協力事業団

筑波国際センター

目　　次

1．コース名等

1）コース名　　（和文）地震工学Ⅱコース
　　（英文）Group Training Course in Seismology and
　　Earthquake Engineering Ⅱ
2）設立年度　　平成元年度
3）研修機関　　平成10年８月31日～平成11年７月25日
4）定　　員　　20名
5）受入研修機関　建設省建築研究所

2．コースの目的・背景

1）コースの目的

本コースの目的は、下記到達目標の下に講義、討論、演習、実習及び研修旅行ならびに個人研修を行い、これにより地震学及び地震工学分野における研修員の知識・技能を向上させ、両分野において重要な役割を果たすに足る十分な能力を有する研究者・技術者を養成することにある。

2）コースの背景

本コースは当初、地震学、地震工学を学ぶために日本を訪れる若い研究者・技術者の増加を契機として、国際地震工学研修として昭和35年に東京大学などが中心となって発足した。その後、地震災害から人類を守るための国際協力の必要性が広く内外に認識されるようになり、昭和37年１月に建設省建築研究所内に国際地震工学部が創設され、同研修は同部において研修員受入事業として進められることとなった。その後昭和38年９月からは日本政府と国連との共同事業として９年間実施され、昭和47年９月以降は日本政府の単独事業となった。昭和49年には国際協力事業団が発足したことにより同研修はその研修事業の一環に組み入れられ、集団研修「地震工学」コースとして昭和63年まで実施され、昭和35年の研修開始から受け入れた研究者・技術者の数は合計50か国575名となった。

さらに同年におけるコース見直しの結果、平成元年度より「地震工学Ⅱ」コースとして継続実施することが決定され、本年度はその第10回を迎えることとなる。

3．到達目標

研修員が研修期間終了までに、次のことが出来るようになること。

① 地震学及び地震工学分野における重要且つ最新の知識と技術の習得

② 地震観測、地震記録解析、地震探査、地震予知・防災、土質調査、構造動力学、構造実験、耐震設計法等の関連分野におけるいくつかの特別課題に関する高度の知識と技術の習得

③ この研修期間中に習得した知識と技術を用い、各国固有の状況に応じ、地震災害の軽減及び防止に役立つ能力と判断力を養う。

4．研修項目・研修方法

1）研修項目

地震学コース及び地震工学コースは以下の各項目について研修を実施する。

a．地震学コース　　合計　203日

イ．講義・討論　　107日

① バックグラウンド　　23日

本コースのガイダンス及び数学、コンピュータ・データ処理など本コースを受講する上で必要な知識の確認・習得をする。

② 地震計測　　13日

地震観測の実習、観測された地震記象の解釈及び解析

③ 地震波動　　15日

地震波伝播に関する物理学を習得する。

④ 地震過程　　9日

地震という破壊現象の起こり方を学ぶ。特に発震機構の実習に力を入れる。

⑤ 地震活動　　5日

地震が地球上のどこでどのように発生しているかを知る。特にその統計的性質（余震の減り方、大きい地震と小さい地震の発生数の関係等）について詳しく紹介する。

⑥ 構造　　7日

地球内部の地震波速度構造を、表層から中心核まで明らかにする。地震探査の実習により表層構造を求める。

⑦ テクトニクス　　6日

大地の変形・変動の観測及び解釈・理論、特にプレート・テクトニクスについて詳しく学ぶ。

⑧ 地震予知・防災　　7日

地震発生の予測、地震危険度解析、被害予測手法の紹介

⑨ 特論 5日

津波・火山と地震など、地震に深く関連したテーマを紹介する。

⑩ その他 17日

研修員によるカントリーレポートの報告及びユネスコ講師による特別講義。

ロ．個人研修 75日

ハ．見学等 4日

ニ．研修旅行 10日

ホ．シンポジウム出席 6日

b．地震工学コース 合計 203日

イ．講義・討論 101日

① 工学基礎 12日

数学・コンピュータや地震工学概論など本コースを受講する上で必要な知識の確認、習得。

② 地震動（外力） 6日

自然現象としての地震動、特に強震動について、理学的及び工学的立場から概説する。加えて地震動を構造物に作用する入力としてとらえるときの考え方について紹介する。

③ 地盤工学 8日

地盤の静的・動的特性やその試験法について概説する。

④ 構造解析 28日

構造物の構成部材や全体系の静的・動的な性質を知るための解析手法の原理から応用法に至るまでを習得する。

⑤ 耐震設計 31日

主に日本で行われている種々の構造に対する耐震設計法について、その概念から設計例に至るまでを紹介する。また、地盤条件に応じた基礎構造の構築法について紹介する。

⑥ 地震防災 8日

都市災害としての地震被害を考え、耐震診断、補修補強の方法とともに、都市計画やライフライン施設の防災について紹介する。

⑦ 特別講義 5日

その他参加する研修員の興味ある話題、最新のトピック等について特別講義が企画される。

⑧ コロキウム 3日

参加する研修員により、各母国の地震工学事情、各自興味のある話題に関する研究成果について紹介される。

ロ．個人研修 75日

ハ．見学等 5日

ニ．研修旅行 10日

ホ．その他　　7日

2）研修方法

① 本コースでは講義、討論、演習、実習、見学及び研修旅行ならびに個人研修により研修を実施する。

② 地震学、地震工学の2部門に分け、カリキュラムを作成し、共通する講義は合同とする。

③ 研修の後半4ヵ月間は各研修員が選択した研修テーマについて個人研修を実施する。この研修は、指導教官の指導の下に実施する。

④ 使用言語は英語とする。

地震学コース（1998－1999）講義実施予定

（講義期間：1998. 9.14－1999. 3.31）

分類	講義科目（◎は試験実施）（＊はEと共通）	講師	日数（小計）	1998 9	10	11	12	1999 1	2	3
バック・グラウンド	ガイダンス	古川・横井・末次・芝崎・原	2	－						
	地震数学 ◎	鈴木・芝崎	8		―					
	-コンピュータ ◎	末次・原・勝間田・横井	5		―	―				
	-インターネットによるデータ取得	原・井上	2	－						
	データ処理 ◎	原・横井	6(23)			―	―			
地震計測	近地地震観測 ◎	横井	4			－			―	
	近地地震解析 ◎	古川	4				―			
	遠地地震解析 ◎	上垣内	3						―	
	地震観測所実習	高山・西前・鎌谷	2(13)				―			
地震波動	地震波動理論 ◎	ゲラー・山下	8		―	―				
	地震波動シミュレーション	竹中	3				―			
	表面波・散乱・減衰	蓬田	2							―
	強振動 ＊	入倉	2(15)				―			
地震過程	震源過程	菊地	4			―				
	地震メカニズム演習 ◎	末次	5(9)				―			
地震活動	-地震活動と地震統計 ◎	井元	3					－	－	－
	-地震活動演習	石川	2(5)		－					
構造	地殻・上部マントル構造	岩崎	2						－	－
	地震波トモグラフィ	井上	2						―	
	地震探査 ◎	太田	3(7)							―
テクトニクス	地震とプレートテクトニクス ◎	瀬野	4					―		
	地殻変動	橋本	2(6)						―	
地震予知防災	地震予知と震災軽減	石橋	2							―
	地震ゾーネイション	服部・金子	4					―		
	地震防災教育 ＊	三浦	1(7)			―				
特論	地震地質学	衣笠	1						―	
	津波	都司	2							―
	火山と地震	山岡	2(5)							―
その他	特別講義	鹿嶋＊・＊安藤・＊吉田・尾瀬・＊深尾・＊石原	3	－			―	―	－	－
	コロキウム		3		―				―	
	自習・試験・その他		11(7)	－	－	―	－ －	－	―	－ ―
見学（＊東大筑波地震観測所、東大地震研究所、気象庁、＊松代精密地震観測所、国土地理院、＊地質調査所、防災科学技術研究所、応用地質、横浜市立大学）			4	－		－	―		―	
出席（ＥＳＧ98、地震学会）			6		―	－				
研修旅行（北海道5、関西5）			10(20)		―				―	
合計講義日数			126	9	10	11	12	1	2	3
（合計休日数＝暦上の休日数－休日講義数）			(73)	1998				1999		

＊印の見学の大部分は講義に含まれ、＊印の特別講義は見学に含まれる。
－印は今年度変更された科目
今年度の主な変更点
・講義日数減少：「コンピュータ」「地震活動と地震統計」
・講義日数増加：「インターネットによるデータ取得」「地震活動演習」
・研修旅行日数：15日から10日

地震工学コース（1998－1999）講義実施予定

（講義期間：1998. 9.14－1999. 3.31）

分類	講義科目（◎は試験実施）（＊はEと共通）	講師	日数（小計）	1998 9	10	11	12	1999 1	2	3
工学基礎	ガイダンス	大川・萩原	1	－						
	数学・コンピュータ◎	小山・平出・鹿嶋	3							
	地震工学概論	浜田・渡部	2	－						
	構造実験 ◎	野口・上之薗・福山 平出・鹿嶋	4			－	－		－	－
	構造物信頼性理論	神田	2(12)						－	
地震動（外力）	地盤震動 ◎	山中・小山	2				—			
	強震観測・設計用入力地震動	久保	2			—	—			
	動的相互作用	三浦(賢)	2(6)							—
地盤工学	土質力学 ◎	山田	3		—	—				
	地盤調査法	大岡・阿部	2		—	—				
	地盤動力学	松尾・古関	3(8)			—	—			
構造解析	構造解析 ◎	松島・壁谷澤 喜々津	10	—	—	—	—			
	構造動力学 ◎	南・井上	10	—	—	—	—			
	有限要素法 ◎	和田・野口	6		—				－	—
	極限解析	大井	2(28)							—
耐震設計	設計用地震荷重	石山・緑川	2		－					
	動的耐震設計	福沢・河西	2				—			
	耐震極限設計法 ◎	秋山・西山(功)	3					—	—	—
	制振構造	和田・寺本	2						－	－
	-ＲＣ構造 塩原・田中(仁)・勅使川原・福山		6		－	－	－	－		
	鋼構造 ◎	田中(淳)	3						—	
	ＰＣ構造	西山(峰)	1							
	基礎構造	福井・廣谷・飯場・許斐	4				—	－		－
	橋梁	山崎(淳)・大塚・運上	3						—	－
	インフラストラクチャー	菅野(高)・山口	4				－	－		
	（港湾・ダム・トンネル・小電力施設）	長井・当麻 大友								
	組積造	水野	1(31)					－		
地震防災	都市防災	棚橋・岡田・糸井川	2							—
	ライフライン	山崎(文)	1							－
	-耐震診断・補修補強	菅野(俊)・寺山	4						—	
	地震防災教育	三浦(房)	1(8)						－	－
その他	特別講義		5				－		—	—
	コロキウム		3	－		－				
	自習・その他		7(15)	－	－	－	－	－		－
見学等（建研、土研、防災科研等）			5		－	—		－		
研修旅行（北海道5、関西5）			10(15)		—			—		—
合計講義日数（合計休日数＝暦上の休日数－休日講義数）			124	9	10	11	12	1	2	3
				1998				1999		

－印は今年度変更された科目

今年度の主な変更点

・講師減少：「ＲＣ構造」「耐震診断・補修補強」

・研修旅行日数：15日から10日

5．研修員参加資格要件

1）人選方法及び選考基準

参加希望国政府がGeneral Information（応募案内書－以下「G.I.」という。）に応じて提出した推薦要請書類（A2 A3 Form）に基づき、国際協力事業団筑波国際センターと建設省建築研究所の関係者が、G.I.に記載の研修員参加資格要件を基準として協議し人選を行う。

2）G.I.に記載の参加資格要件は次のとおり。

① 自国政府からの推薦を受けた者
② 大学卒業者または同等資格者で地震学、地震工学分野で3年以上の経験を有する者
③ 基礎数学（微分、積分等）を理解している者
④ 4ヵ月の個人研修の間、研究報告書を作成提出する能力を有すること
⑤ 英語の読み書きに十分通じていること
⑥ 35才以下の者
⑦ 心身ともに健康で、支障なく研修生活を送ることができる者であること。
（女性については妊娠していないこと。）
⑧ 軍隊に在籍していない者

3）応募割当国

32ヵ国　インドネシア、フィリピン、中国、大韓民国、インド、ネパール、パキスタン、パプア・ニューギニア、トンガ、ヴァヌアツ、コスタ・リカ、エル・サルヴァドル、グァテマラ、メキシコ、ニカラグァ、ボリヴィア、チリ、コロンビア、エクアドル、ペルー、イラン、トルコ、アルジェリア、エジプト、エティオピア、ガーナ、タンザニア、ザンビア、ジプティ

6．研修実施体制及び運営

1）本研修コースの運営は、建設省建築研究所と国際協力事業団筑波国際センターが協力・協議のうえ基本方針並びに実施計画を決定し行う。

2）上記決定に基づき、筑波国際センターが本コースについて㈱建築研究振興協会と研修業務委託契約を締結し、研修実施の業務を委託する。

3）国際協力事業団は、研修業務が円滑に行われるために業務調査と必要な場合の通訳業務を行う研修監理員を配置する。

7．研修・宿泊施設等

使用する研修施設・宿泊施設は次のとおり

1）研修施設

建設省建築研究所国際地震工学部

〒305－0802　茨城県つくば市立原１

Tel　0298－79－0679～80

Fax　0298－64－6777

2）宿泊施設

国際協力事業団筑波国際センター

〒305－0074　茨城県つくば市高野台３－６

Tel　0298－38－1111㈹

Fax　0298－38－1119㈹

0298－38－1790(業務第一課)

8．研修教材・研修資機材

使用する研修教材・研修資機材は次のとおり。

1）研修教材

各講師が選定もしくは用意した英文テキストを使用する。

2）研修資機材

①　スライド等効果的な研修用資機材を使用する。

②　受入研修機関の資機材を必要な範囲内において利・活用する。

9．研修付帯プログラム

本コースのため次の研修付帯プログラムを実施する。

1）来日指定日　平成10年８月31日(月)

2）集合ブリーフィング（１日間)

来日時、事務諸手続き、滞在諸手当の支給手続、日常生活の一般留意事項等について集合ブリーフィングを原則として来日の翌日に実施する。

3）一般オリエンテーション（3日間）

日本滞在中の必要知識として、我が国の現状紹介のためのオリエンテーションを実施する。

1日目	①ブリーフィング（銀行口座開設・書類作成） ②所長挨拶・ビデオ上映・館内案内
2日目	①外国人登録 ②つくば市内バスツアー
3日目	①講義「日本の歴史」 ②講義「日本の教育」 ③講義「日本の文化」
4日目	①講義「日本の社会」 ②講義「日本の政治・行政機構」
5日目	東京都内バスツアー （東京タワー・皇居・銀座・浅草）

4）プログラムオリエンテーション（1日以内）

技術研修の開始に先立ち、コース目的、日程、内容、方法等につき説明のうえ周知徹底をはかり、あわせて研修員の要望等を聴取し、実施・運営の円滑化をはかるため、オリエンテーションを実施する。

5）日本語研修（1週間）

研修員の滞日生活の充実および日本文化の理解を深めるため、基礎会話から日本語の研修を実施する。また、希望者を対象に週2回程度の日本語一般コースを実施する。

6）コンピュータ講座（夜間…希望者）

最近の科学技術の発展を支えているコンピュータによる情報処理について、基礎的理解を得られるようにWindows95／Office97に関するコンピュータ初級講座（週3回計6回）を実施する（任意参加）。

7）厚生行事

当センターが実施する日本文化紹介パーティーその他の厚生行事に参加する。

10. 研修の評価

1）本コースの評価は次のようにして行う

a．建築研究所の主催で行うもの。

① 試験（基礎的な分野に対してのみ）

② 実習に対するレポートの提出

③ 個人研究の中間発表、最終発表における研究成果の発表

b．筑波国際センターの主催で行うもの

① 研修員記入のアンケートの数量的分析に基づき、研修員との討論形式により行う。

② 上記の評価会には研修員・受入研修機関関係者及び筑波国際センター研修課関係者が出席する。

③ 評価は次期研修のカリキュラム改善を目的とし、研修修了数日前に研修事業部が様式化したアンケートにより、コースの目的、カリキュラムデザイン、レベル、教え方、研修員の習得の度合い等について研修員に回答させた資料に基づいて行う。

2）反省会

研修修了後、研修実施関係者と会合をもち、上記評価会の結果を参考として、本年度のコース内容、運営体制等について検討し、次年度以降のコース運営の改善を行う。

3）研修実施報告書の作成

上記1)～2)を参考として、事業団担当者が本コース実施に係る事項を研修実施報告書にまとめる。

11. 研修員の待遇

(1) 入国資格

日本で技術研修を受けるために来日する者（通常、入国査証コードは研修であり、留学生とは完全に区分される)。なお、日本滞在中は日本国法令の適用を受ける。また、働いて収入を得ることはできない。

(2) 研修員の病気、事故、災害等

イ．研修員は、研修期間中に発生した事故や病気について、JICAが交付するメディカルカードを医療機関に提示することで、無料で治療をうけることができる。

ロ．また、研修実施中の災害等に関しては、JICAの規定による保償給付が受けられる。

(3) 滞在費

国際協力事業団の規定に基づき、研修員に滞在費用その他が支給される。

イ．各国の国際空港～東京間の往復航空券（PTA方式による発券）

ロ．国際協力事業団筑波国際センターにおける宿泊費（朝食及び夕食の一部を含む）の他、一日あたり3,594円の生活費。その他支度料（20,000円)、書籍費（4,000円)、資格送付料（2,000円～13,000円　地域別）が来日時に支払われる。

ハ．研修旅行に伴う費用

研修旅行中は、実費宿泊費、生活費が支払われる。

(4) 修了証書

このコースを修了した研修員に対し、国際協力事業団は修了証書を発給する。