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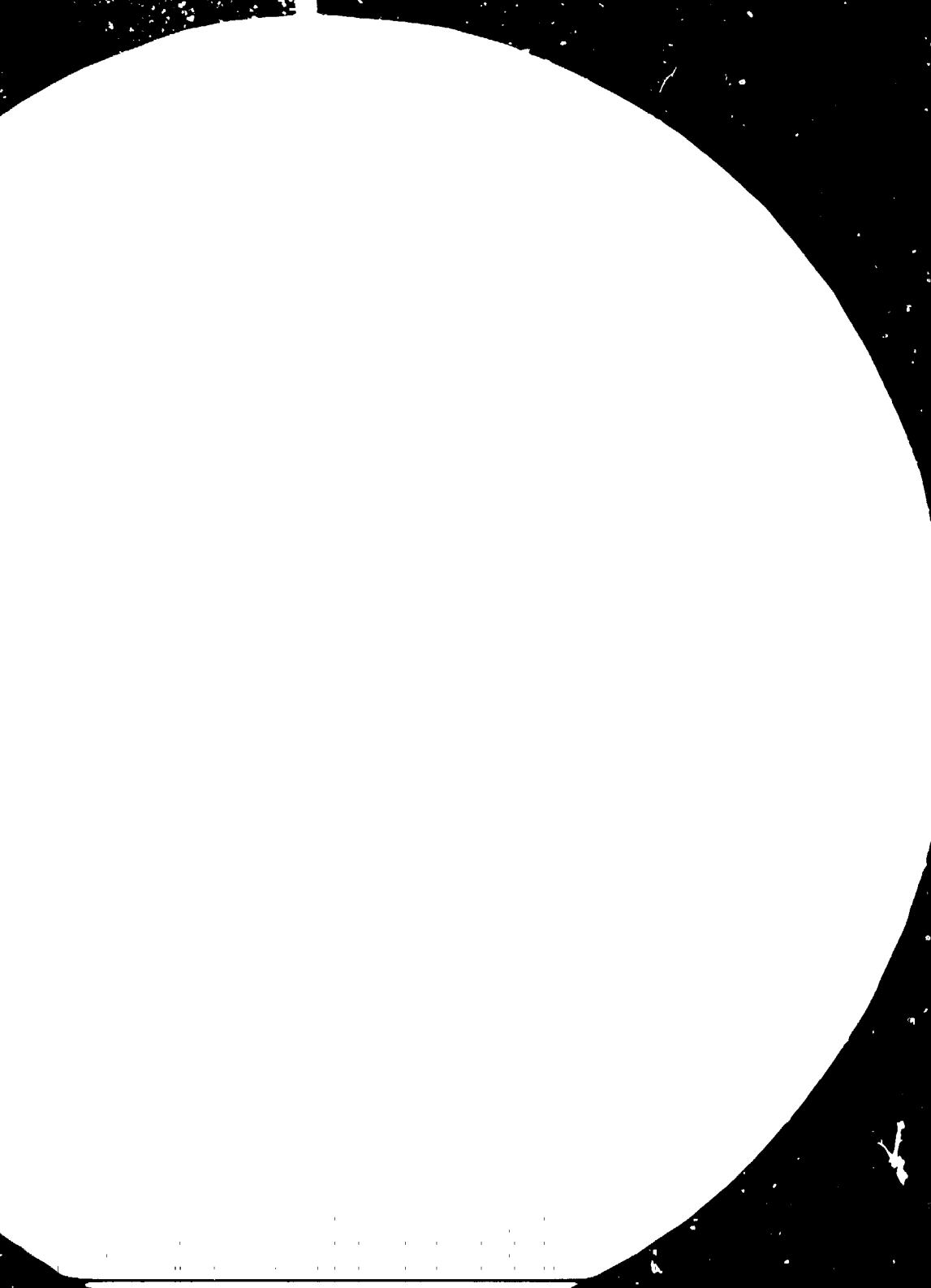
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Joint UNDP/UNIDO/ESCAP/China Senior Expert
Group Meeting on the Creation of a Regional Network
System and the Assessment of Priority Needs on
Research, Development and Training in the field of
Small/Mini Hydro Power Generation

Hangzhou, P.R. China, 12-17 July 1982

Considerations on the Creation of a Regional
Network System on SHG and
Priority Tasks of the Hangzhou Centre *
in 1982-1984

by

Zu Xiaozhang**

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** Regional Research and Training Centre on Small Hydropower Generation, Beijing.

Some Consideration on the Creation of
Asian and Pacific Regional Network System on MHG/SHP

Both in the suggestions from the first Seminar-Workshop on the Exchange of Experiences and Technology Transfer in MHG, 10-14 September 1979 in Kathmandu, Nepal, organized jointly by UNIDO and ESCAP and the Second Seminar-Workshop/Study Tour in the Development and Application of Technology for MHG, 17 October - 8 November 1980 in Hangzhou, China and Manila, Philippines, Convened by UNIDO and in the ideas formed in the discussion between Mr. W.H. Tanaka and Mr. K. Watts (Special Adviser of Regional Energy Development Programme, ESCAP), recognition has been attained that it is necessary to create an ESCAP Regional Network System in MHG/SHG in order to increase the contacts among ESCAP member countries and to promote their mutual understanding of various experiences in the field of development of MHG/SHP.

At present, some ESCAP member countries, such as Nepal, India, Indonesia, China, etc. have already created their national research centre or institute of MHG/SHP. Some institutes in other countries may be under creation. The SHP Research and Training Centre in China has been assigned as a Regional Centre. The national centres of member countries may undertake their own research or other works in the field of MHG/SHP, but the Regional Centre might bear the responsibility of priority items in which most of the member countries may be commonly interested. If a Regional Network System is established, the Regional Centre in Hangzhou, China, under the condition of being entrusted by the representatives of the meeting, would act as a focal point of the Network to serve the member countries.

According to relevant documents of UNDP, the tasks of this focal point of the "Network System" are as follows:

1. To organize information services and circulate periodical to others in the "Network" and answer queries from them. The periodical has to reflect the development of MHG/SHP and its trend in the whole world as far as possible.

2. To train the trainees from other countries.
3. To make available short term advisory services to other institutions on request.
4. To provide reports on special aspects and/or meetings requested by other national centres, focal points and institutes.
5. To carry out the test for SHP equipments sent by other units in the "Network" and submit test reports.

In line with the requirements mentioned above, the Regional Centre intends to provide following services to the ESCAP member countries:

1. To edit and publish a regional publication "News Letter on MHG/SHP" (in English) started from 1983, non-periodically in the beginning, and transferred to periodic one later.

The editors will be assigned in the Regional Centre. The manuscripts will come from within China, and also be provided by the relevant institutes and experts in the member countries.

The necessity of establishing an information centre on MHG/SHP might be discussed in the July Meeting.

2. It has been scheduled that the first Training Seminar-Workshop on MHG/SHP in Asian and Pacific Region will be conducted in 1st - 2nd quarter in 1983. After then, training courses for different professions may be held 1-2 times every year.

The objectives of the first Training Seminar-Workshop are: to enable the trainees to have an understanding and preliminary command in the whole process, methodology and experience of SHP construction (including the formulation of policies, mobilization of masses, undertaking of various professional works, etc.), in order to provide them with a fundamental and overall basis of technical knowledge for taking responsibility of technical works of SHP construction in their own countries.

The trainees of the first training Seminar-Workshop will be the technical leading persons selected mainly from the developing countries in Asian and Pacific Region and a few from Africa and Latin America with a number of 20-30.

In order to make this centre better equipped than it was planned in the beginning, it is necessary to expand some facilities of electrified education.

3. Ready to send the SHP advisory service on request, preferably in the work of planning, designing or technical consulting of SHP projects.

4. A study of how to take over the testing tasks of small hydro power entrusted from member countries of ESCAP is being carried on. At present, the nature and scope of the tasks have not been clarified and have to be discussed in this senior experts meeting. In case measuring and testing works of some small hydropower stations may be entrusted to us, then, only some on-site testing equipments are necessary. But if any hydro-turbine model tests would be requested, two possible alternatives might be taken. One is to organize the existing laboratories in China to fulfill the testing tasks by our Centre. In this alternative, only some subsidy is required to upgrade the equipments of the existing laboratory and raise its sophistication. The another alternative is to create a new laboratory in the Centre, which would need an addition of building with floor space of 1500 m² and capital investment of 500,000 yuan (RMB) as well as a whole set of measuring and testing equipments cost about US\$ 600,000 in a rough estimation.

In order to promote the operation of the "SHP Network System", it is recommended that an International Advisory Committee for the Asian and Pacific Regional MHC/SHP Network System will be established. This committee will be a consultative agency, but not a power agency and will principally deliver their consultative comments and suggestions on important technical problems and may probably make contributions in the aspect of financial supports. The committee will not concern any daily management.

It is recommended that the committee members will be composed of some famous and authoritative senior experts in the field of MBG/SHP in ESCAP region and a few of relevant experts from some developed countries. The members may be of 8-12 persons and the meeting of the Committee may be convened once in every 1-2 years. The budget of the meeting is recommended to be listed in the plan of activities of the SHP Network System.

In order to help the focal point of the Network (the Hangzhou Centre) to make good co-ordination among the national centres in the Region, it is possible that an experienced co-ordinator might be designated by UNDP, UNIDO, and ESCAP to work in the Hangzhou Centre for one year. The tasks and terms of reference of the co-ordinator should be clarified. The first co-ordinator, may begin his work at an appropriate time in 1983. A co-ordinator or probably of other forms of organization may be discussed and reviewed in the July Meeting and will be finally decided through consultations among relevant UN organizations and the Ministry of Foreign Economic and Trade and the Ministry of Water Resources and Electric Power of China.

An Outline of Priority Tasks of the Regional R+D and Training
Centre for SHP Generation in 1982-1984

(A Preliminary Draft)

The first phase construction of the Asian and Pacific Regional R+D and Training Centre for SHP Generation in Hangzhou, China will be completed in the 4th quarter of this year, while the second phase construction of the project will also be expected to complete the building and equipment installation and put into service in 1983-1984. According to the project document of the Centre and relevant recommendations, some considerations on the activities of the Centre in 1982-1984 have been carried out and are given in the following for reference of discussion in the meeting.

I. Technical Training

The first Training Seminar-Workshop on MHG/SHP will be conducted in the first half of 1983; the trainees will be technical leading persons from ESCAP member countries; it is expected that the trainees will understand and preliminarily hold the whole process, methodology and experiences of SHP construction through training in order to provide them with a fundamental and overall basis of technical knowledge for taking the responsibility of technical work of SHP construction in their own countries. The number of trainees may be 20-30.

It is recommended that a training course for middle level SHP technical personnels of different professions be held in 1984, the trainees should be engineers, and emphasis be laid on the planning and design of SHP projects, which may be divided into six professions, i.e. exploration and surveying, planning, hydraulic structure, hydro mechanical engineering, electrical engineering, construction and installation. It is expected that the trainees will master fundamental measures and methods of SHP exploration and surveying, design and construction through training. In case of limitation of finance, it may be held twice, the first course for training of exploration surveying, planning and hydraulic structure design personnels in the first half of 1984 with 20-25 persons and a duration of 2 months. The second course for training of mechanical and electrical design, construction and installation technicians in the first half of 1985 with persons and time duration same as the first course.

II. Establishment of Regional Information Network System and Exchange of Technical Information

The publication of a booklet describing the history, present situation, experiences and academic activities on SHP development and some practical illustrations of SHP planning and design in China, probably entitled as "the General Situation and Trends of SHP in China", would be strived under the support of UNIDO, UNDP and ESCAP in this year.

A nonperiodical or periodical "News Letter on MRG/SHP in Asian and Pacific Region" will begin to publish from 1983, which will cover:

1. The trend of SHP development in Asian and Pacific region and China
2. The SHP technical activities in Asian and Pacific region and China
3. The experiences of SHP development in Asian and Pacific region and China
4. Synopsis from selected papers on SHP techniques in Asian and Pacific region and China

The "News Letter" mentioned above will make contact and exchange with other relevant institutes engaging in the SHP field.

It is recommended that an Asian and Pacific regional information meeting on MRG/SHP would be convened in 1984 in order to establish an information network system and their liaison organization, and to exchange experiences.

III. Erection of a pilot project on automation and telemechanization of a rivulet's cascade development

The objectives of this pilot project are: to study the technology of automation and telemechanization of SHP station and the questions of optimum design of a rivulet's cascade development, to provide a demonstrative for the trainees of Asian and Pacific regional training course. At present, the site selection is being carried on near Hangzhou District, Zhejiang Province. It is planned that the preliminary design of this project will be submitted in the end of this year. The expenses of required

equipment are obtained from UN. This project may be expected to be completed and put into operation, and to begin its test work in the end of 1984.

IV. Research and experiments

Scientific research and experiments of the Centre should be carried out in combination with the technical training and the SHP technical subjects of common interest to the member countries of Asian and Pacific region. The pilot project of automation and telemechanization for a rivulet's cascade development is one of the subjects. It is desired that the other subject may be proposed by the member countries based on their actual needs and be discussed in this meeting and be confirmed of their contents.

Since there are no laboratory facilities in the first and second phase construction of the project of the Centre the experimental tasks probably be proposed by member countries at present may be entrusted to the existing water conservancy and hydro power scientific research institutes in China through our Centre. How to establish the laboratory of the Centre (such as turbine and electrical laboratories) may be decided in accordance with the nature and scope of experiments. For concrete proposal see "some considerations on the set up of SHP Network system in Asian and Pacific Region".

V. Study tour

1. Due to lack of experiences in the operation and management of international centre it is desired that a study tour to some international centre in developed countries with rich experiences would be arranged for 4-5 persons in about 4 weeks in 1983.

2. A study tour with 3-4 persons of the Regional Centre to some member countries in Asian and Pacific Region in order to further find out the needs on SHP technical training and opinions on the training results of developing countries in the Region and to make mutual exchange of views is also intended. The time required will be about 4 weeks.

VI. Consultant

The Centre intends to undertake advisory services on SHP techniques for the member countries in Asian and Pacific Region. It is scheduled to send an expert group of 6 person-months to the Regional SHP advisory team organized by REDP-ESCAP in 1983-1984. In addition, experts may also be sent to the member countries to undertake advisory services on SHP planning, designing and equipment ordering and purchasing from China on request.

