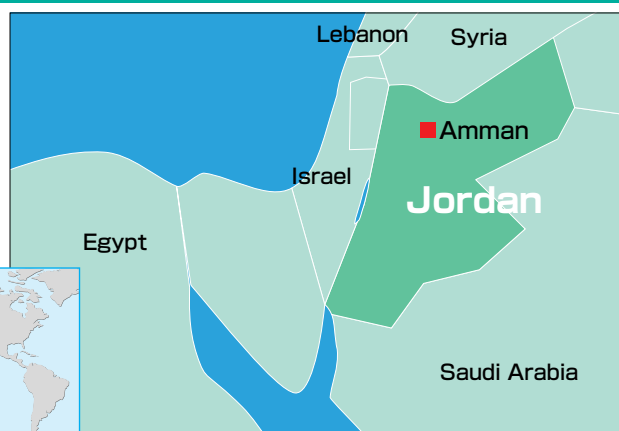


Electric Power Training Phase 2



Project Sites Amman

1. Background of Project

In Middle-East countries, due to the increase in demand for electric power, it is a pressing issue to train technicians in the fields of power generation, transmission, transformation, and distribution. Based on this background, JICA implemented the Project-Type Technical Cooperation, "Electric Power Training Center in the Hashemite Kingdom of Jordan", to support human resources development from 1986 to 1990 for the Government of Jordan. Furthermore, aimed at diffusing and transferring the results of this cooperation to surrounding Arabian countries, the Third Country Training Program "Electric Power Industry Training" was executed for five years from 1992. The extension of training for another five years was determined in April 1997 based on the recommendation of the final evaluation carried out in March 1996.

2. Project Overview

(1) Period of Cooperation

FY1997 – FY2001

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

National Electric Power Company (NEPCO),
The Electric Training Center (of Jordan Electricity Authority (ETC))

(4) Narrative Summary

1) Overall Goal

The technology and knowledge of the electric power field for participants from Arabian countries are improved.

2) Project Purpose

The training participants learn the basic knowledge and the use of standard technology of the following areas: ① construction and maintenance of distribution line systems, ② construction and maintenance of indoor substations, ③ construction and maintenance of outdoor substations, ④ construc-

tion and maintenance of overhead power transmission lines, ⑤ the operation and maintenance of power plants.

3) Outputs

- The training participants gain knowledge and learn about technology related to ground cables and ABC system cables.
- The training participants gain knowledge and learn about technology related to the construction, operation and maintenance of distribution line systems/ABC systems, and the construction of ground cables.
- The training participants gain knowledge and learn about technology related to the construction, operation and maintenance of high voltage transmission lines.
- The training participants gain knowledge and learn about technology related to the construction, operation and maintenance of the distribution systems.

4) Inputs

Japanese Side

Training expenses	81 million yen
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Jordan Side

Instructors	91
Training expenses	5 million yen

(5) Participant Countries

Algeria, Bahrain, Egypt, Mauritania, Morocco, Oman, Saudi Arabia, Syrian Arab Republic, Tunisia, and Yemen

3. Members of Evaluation Team

Hiroshi KURAKATA, JICA Jordan Office,
Amen NABULSI, National Electric Power Company (NEPCO),
Ibrahim HAWARI, The Electric Training Center (ETC)
Riyad AL-REOUSAU, The Electric Training Center (ETC)

4. Period of Evaluation

January 2001 – March 2001

5. Results of Evaluation

(1) Relevance

For this training, before setting up of the training curriculum, the executing agency (NEPCO) established the training themes and contents by hearing the needs of the organizations in the surrounding countries. According to the questionnaires given to the training participants at the final evaluation survey (sent to 60 out of 87 participants, with 50 replying), 95% of participants replied that they are "making use of the knowledge and technology learned in the training", thus the contents of the training are seen to be reflecting the needs and are properly set up.

(2) Effectiveness

Analyzing the evaluation report carried out right after the training, regarding the four items of the teaching method, the appropriateness of the curriculum, the application of technology, and the degree of achievements, the training participants evaluated on average from 3.5 to 3.9 out of 5 points. The curriculum, the teaching method, etc. all satisfied the necessary standard, and the contents of the training also satisfied the training participants. According to the questionnaire given to the training participants for the final evaluation survey, 95% of those who answered indicated that they are "making use of the knowledge and the technology learned in the training". Judging from this result, the training contributes to the improvement of the technology of construction, operation and maintenance of the facilities such as distribution and transmission lines, and it can be said that the training have achieved its objectives.

(3) Efficiency

In addition to the fact that the executing agency, NEPCO, has had extremely high ability for management of the training courses and administrative works, there was no problem with regard to the technical level, experience, and willingness of the lecturers. For these reasons, it can be said that the training was extremely useful for both the participants and the execution side, and that the effects also can be recognized to be high.

(4) Impact

In the questionnaire to the bosses of the training participants, almost all of them answered, "the knowledge and technology are transferred from the training participants to other engineers", and replied that it is useful for the improvement of the skills of their organizations.

(5) Sustainability

With extremely high management ability, NEPCO implemented effective training for the participants from Middle-East countries. And according to the result from the training evaluation report made just after the end of



Training on the maintenance of transmission lines

the training, there were no problems with the teaching method of the lecturers. In the background of these, when implementing the training, the lecturers monitored the technical level of each participant, and reflected the results with management of lectures and the practices. Such careful process results in positive effects.

Also regarding the management of the actual training, the administration of budget and the settlement after the training are properly processed. Based on these, it is judged that NEPCO would be able to implement the training program independently from now on.

6. Lessons Learned and Recommendations

(1) Lessons Learned

This training is a success model in the sense that the result of the Project-Type Technical Cooperation was diffused to the surrounding areas. This is because of the facts that the detailed training plan was made by setting the training themes and contents according to the needs of the surrounding countries, and the training implementing organization had high abilities.

(2) Recommendations

The area concerned is politically unstable mainly because of the Palestine Disputes, and various efforts are made toward the building of peace. The training with the theme of "stable electricity supply in the area by interconnection of transmission lines" can be comparatively easy for gaining consensus on the importance of the training objectives. It is necessary to make efforts to utilize the scheme of the Third-country Training Programme and increase the number of the areas mutually cooperated by establishing the network among the areas. In this case, careful selection of the technology and the engineers for the training becomes very important.