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SUMMARY REPORT*
ON THE PROJECT

***ASSISTANCE TO DEVELOP A REGIONAL PROGRAM
IN ENVIRONMENTAL MANAGEMENT/
CLEANER PRODUCTION IN THE IRON AND STEEL INDUSTRY
IN SOUTH EAST ASIAN REGION****

prepared by the

***ENVIRONMENTAL COMMITTEE OF SOUTH EAST ASIA
IRON AND STEEL INSTITUTE***

*The views expressed in this paper are those of the authors and do not necessarily reflect the views of the Secretariat of the United Nations Industrial Development Organization (UNIDO). Mention of firm names and commercial products does not imply the endorsement of UNIDO. This document has not been edited.

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FOREWORD

This report is to summarise the project outputs of the Environmental Working Group of SEAISI - later called, SEAISI Environmental Committee and to be submitted to its sponsor, UNIDO, and to be distributed to each National Committee of SEAISI.

The Project is titled:

"ASSISTANCE TO DEVELOP A REGIONAL PROGRAM IN ENVIRONMENTAL MANAGEMENT/CLEANER PRODUCTION IN THE IRON AND STEEL INDUSTRY IN SOUTH EAST ASIAN REGION"

The Project started on August 1992 and ended on July 1994 within 2 years duration.

This Report is divided into three main parts:

Part I : Minutes and Annexed Materials of the General Meeting of the Working Group.

(File 1: First, Third & Fourth Meeting)
(File 2: Second Meeting)

Part II : Papers presented in Workshops & Conference.

(File 3):

- 1) Workshop On EAF (Electric Arc Furnace) Dust Treatment held in Petaling Jaya, Malaysia on 6-7th September, 1993;
- 2) Workshop On Sludge Treatment In Mini-Mills held in Bangkok, Thailand on 18-19th July, 1994;
- 3) SEAISI Conference On Environmental Control and Energy Saving Practices Within the Iron & Steel Industry Held in Sendai, Japan On 11-15 April, 1993 (Synopses only).

Part III : Technical Information Materials and Data gathered and filed by the members of the Working Group during the running of the project - (File 4).

Each part of the Report is bound separately. Originals and sources of this Report are filed in SEAISI under Project 4.

Members of the Working Group extend their deepest gratitude to UNIDO and to all National Committees as well as to all Experts who have contributed to the Workshops and gathering and analysing the voluminous data.

Members of the Working Group are also hoping that this Report will be an informative document to people who daily operate the pollution control facilities in the Iron and Steel Industries and aspire to find advanced ways to protect the environment for industrial prosperity.

PROJECT DESCRIPTION

A. OVERALL OBJECTIVE:

To reduce the impact of the development of the iron and steel sector on the environment by means of establishing efficient and integral mechanisms of educational cooperation in the field of environment among plants and institutions of the South East Asian region.

B. IMMEDIATE OBJECTIVE:

To assist the members of the South East Asian iron and steel industry in strengthening their capabilities of designing, formulating and implementing comprehensive and tailor made programmes for the promotion, introduction and application of cleaner technologies and environmental management techniques by means of incorporation of working groups in selected areas of environmental concern and by designing a regional programme on environmental management.

The Environmental Working Group was responsible for the formulation of a comprehensive awareness and educational programme for the regional industry which will include a focus on:

- * Metallurgical solid waste management;
- * Metallurgical liquid waste management;
- * Air pollution control;
- * Legal Framework Of Environmental Management.

The chief objectives of the Working Group were to:

- identify each South East Asian countries' needs in the field of environmental management with relation to above issues;

- identify potential local points for technology transfer in the region;
- prepare comprehensive educational and co-operation programmes (training, seminars, experience exchange, educational, etc.) amongst members of the working group and supporting bodies within the region;
- develop cost-benefit analysis which support the application of environmental management methodologies (decided by the working group not to be included in the activities).
- prepare methodologies and a regional programme including joint training activities, demonstration pilot plants, joint-research activities for the iron and steel sector of the region (only partly included).

The following national iron and steel associations have participated in the Project through SEAISI.

- Indonesia : Indonesia National Committee for SEAISI
- Malaysia : Malaysian Iron and Steel Industries Federation.
: Malaysian National Committee for SEAISI
- Philippines: Philippine Iron & Steel Institute
- Singapore : Singapore National Committee for SEAISI
- Thailand : Thailand Steel Club
- Brunei : No representative at this stage
- Vietnam : Recommend Southern Steel Union of Vietnam
- Japan : Japan National Committee for SEAISI
- Australia : Australian National Committee for SEAISI

South Korea: Korea Iron and Steel Association
Korea National Committee for SEAISI

Taiwan : Taiwan Steel and Iron Industries Assoc.
Taiwan National Committee for SEAISI

In the framework of the Project, a series of regional meetings and educational seminars was conducted. The major event was the regional conference meeting on environmental issues in iron and steel industry of South East Asia, "Environmental Control and Energy-Saving Practices Within The Iron and Steel Industry" held in Japan on 11-15 April 1993.

LIST OF THE WORKING GROUP MEMBERS

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17. Mr. Richard Johns
Secretary General of SEAISI
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18. Mr. Lee Jai-Eun
Secretary General of SEAISI
(Assumed position of Secretary General of SEAISI
on 4th June 1993)

SUMMARY OF PROJECT ACHIEVEMENTS

| EXPECTED | RESULTED |
|---|--|
| <p>1. Selection of members to be part of the initial working group.</p> <p>2. First General Meeting of the working group.</p> | <p>1. One member from each country of Indonesia, Malaysia, Philippines, Singapore, Thailand, Japan, Australia, South Korea, and Taiwan was nominated before the First Meeting and a representative from Vietnam has joined since the Second Meeting.</p> <p>The working group was recommended as a Standing Committee of SEAISI by the Board of Directors Meeting of SEAISI after its own suggestion and called "SEAISI Environmental Committee".</p> <p>2. The First General Meeting of the working group was held on 28-29 August 1992 at the SEAISI Office in Shah Alam, Malaysia. Objectives and results of the Meeting are to be drawn from the Report.</p> |

| EXPECTED | RESULTED |
|--|--|
| <p>3. Preparation of Report of the capabilities/ experts available in South East Asia region in the field of environment including the list of institutes/ plants that could act as demonstration units.</p> | <p>3. A separate list of Experts and Institutes was not prepared. Experts contributed to the workshops and conference are considered as the main capabilities in the region. The names of Experts and their affiliated Institutes or companies are listed in the Report.</p> |
| <p>4. Second General Meeting of the working group.</p> | <p>4. The Second General Meeting was held on 18-19 January 1993 at RIST, Research Institute Of Industrial Science & Technology, in Pohang, Korea.</p> <p>Objectives and results of the Meeting are to be learned from the Report.</p> |
| <p>5. Educational seminars with selected consultants for training</p> | <p>5. Workshop on EAF Dust Treatment was held on 6-7 September 1993 in Petaling Jaya, Malaysia. 8 Experts presented their papers and 28 Specialists took part in the Workshop and discussed the thematic.</p> <p>Workshop on Sludge Treatment in Mini-Mills was held on 18-19 July 1994 at Siam City Hotel in Bangkok, Thailand. 7 Experts presented their papers and 21 participants discussed the thematics.</p> |

| EXPECTED | RESULTED |
|---|---|
| 6. Discussions of the draft of the Regional Program with concerned parties at national and regional levels | 6. Subjects of all Workshops, guidelines and other educational activities were selected by Questionnaires sent to the SEAISI Member Companies, and all results of those activities were discussed during the Meeting of the working group. |
| 7. Regional conference meeting on environmental issues in iron and steel industry of South East Asia region, SEAISI Conference on Environmental Control and Energy Saving Practices within the Iron & Steel Industry. | 7. Altogether 46 papers were presented and 212 persons interested in the subjects attended the conference. A number of the members of the working group took part in the conference. The list of papers and synopsis is included in the Report. |
| 8. Presentation of regional program of environmental management/cleaner production in South East Asia region at the above conference by the working group. | 8. Presentation was not carried out explicitly by the working group. It is obvious that the presentation planned here will be realised in connection with point 9. |

| EXPECTED | RESULTED |
|--|---|
| <p>9. Coordination Meeting in Vienna with representatives of each working group, South East Asia region and Latin America.</p> <p>Objectives of this coordination meeting are:</p> <ul style="list-style-type: none">a) To present and revise the final draft of the regional program to members of other ASEAN Missions, UNIDO, potential donors and UNDP representatives;b) To discuss possible mechanisms for financing the long-term program. | <p>9. The meeting has not been realised during the Project time. It is suggested herewith that the meeting be integrated in the forthcoming "Global Consultation On Environmental Management/ Cleaner Technologies in the Metallurgical Industry which will be held in Venezuela 1995.</p> <p>The Draft of the regional program and possible mechanisms for financing the long-term program are proposed under Chapter, <u>"FURTHER PROGRAM/ RECOMMENDATIONS"</u></p> |

CONCLUSIONS

1. Readiness of all iron and steel industries, institutions and individuals in South East Asian region who are concerned with the iron and steel production to reduce the impact of the development of iron and steel sector on the environment was expressed strongly during the whole running time of the Project.

Establishment of an efficient and integral mechanism of educational cooperation in the field of environmental protection among plants and institutions of the region was therefore, necessary.

2. A Working Group was formed with 10 Experts or manager in the field of environmental management or pollution control in the iron and steel industry. Each member of the working group was nominated by the affiliated national iron and steel association or National Committee for SEAISI.

The Working Group was well advised during its first meeting on the objectives of the Project and being well aware with its responsibility for the formulation of a comprehensive awareness and educational programme for the regional iron and steel industry in the region.

The Working Group was recommended as a Standing Committee of SEAISI by the Board of Directors Meeting of SEAISI after its own suggestion and called subsequently "SEAISI Environmental Committee".

3. Four meetings had been held during the running of the project, and the main agenda of the meetings were:
 - Discussion and selection of the specific area which were interested mostly by the iron and steel industries in the region;
 - Set-up of national and regional education programs according to the main interests;

- Preparing the educational seminars and workshops and evaluation of those results;
 - Preparation and distribution of technical information materials and data like manuals, guidelines, benchmarks, and standards, etc.;
 - Discussion and decision for future activities and programmes.
4. The Working Group prepared and conducted or took part in the following educational activities during the Project time:
- Workshop on EAF Dust Treatment,
 - Workshop on Sludge Treatment in Mini-mills,
 - Conference On Environmental Control and Energy Saving Practices within the Iron and Steel Industry,
 - Solid Waste Management Tour.
5. The Working Group prepared and distributed the following technical information materials and data:
- Legal Framework of Environmental Standards,
 - Benchmarks of EAF Air Pollution Control,
 - Benchmarks of Solid Waste Treatment of EAF Plants,
 - Manual on EAF Dust Collection.
 - Manual on Environmental Measurement and Evaluation,
 - Manual on Control of Fugitive Dust,
 - Technical Review of Pollution Control Facilities in Steel Industries,
 - Other diverse information materials.

FURTHER PROGRAM/RECOMMENDATIONS

1. Further activities of the Committee:

1.1 Objectives:

The Committee adopted its objectives after its resolution of the last meeting as follows:

"To promote the exchange of technologies and information for improving the abilities of environmental conservation for the sole purpose of sustainable development in South East Asia".

"To reduce the negative impact of the development of the iron and steel industries on the environment by means of establishing efficient and integral mechanisms of educational co-operation in the field of environmental management and pollution control technology among plants and institutions in the region"

1.2 Activities:

The Committee will promote the exchange of diverse information materials of pollution control technologies, environmental management systems and the development progress of environmental issues of each country and its iron and steel industries through its meetings and individual contacts.

The committee will prepare and conduct further various comprehensive awareness and educational programme including workshops, seminars, conference, and plant visits in the region or outside the region if necessary.

To realise these activities, the Committee will have a regular general meeting annually in the Asian region in combination with a technical exchange session and plant visits.

2. Areas for UNIDO's further assistance, including financial requirements:

2.1 Assistance to the annual meeting;

As a rule, 4 days meeting
(1 day General Meeting of the Committee,
1 day Technical Exchange Session,
2 days Plant Visits)

About 20 participants
(10 Committee Members including Chairman, 2 SEAISI
Representatives, 1 UNIDO Representative, 5 Experts,
and some additional participants representative for
National Committee)

All Committee Members will cover their own expenses,
except member representative of Vietnam.

Daily subsistence allowance (DSA) and travel for 5
experts are to be paid by the project.

DSA and travel for Committee Member representative
of Vietnam are to be paid by the project.

Additional participants will cover their own
expenses.

2.2 Assistance to the awareness and educational
programmes (Workshop, Conference or Plant Tour,
etc.);

The Committee will conduct as a rule, 1 programme in
2 years.

10 selected participants (mostly experts) will be
financed by the project.

2.3 Assistance to some co-ordination meeting;

A) Meeting at the Global Consultation
(planned to be held in Venezuela 1995)

1 representative of SEAISI Environmental Committee and 1 representative of SEAISI will participate in the Venezuela Conference and present the regional programme of environmental management/cleaner production in South East Asian region including the achievements of the present project.

DSA and travel will be covered by the project.

- B) Other co-ordination meetings between SEAISI, ILAFA, AISU, and AISA are recommended.

Delegates of the above institutions will be financially supported by the project if meetings are suggested by the Committee as necessary.

The assistance programme will run in two years term, and the successive extension must be verified by SEAISI and UNIDO.

The annual and total project budget are to be determined in the proposal if UNIDO make an assent for the project in principle.