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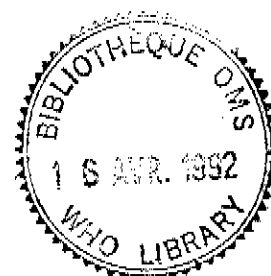
MEDICAL HAZARDOUS WASTE MANAGEMENT

Report on a Training Course

Keszthely, Hungary
10 – 13 December 1991

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1992

EUR/HFA TARGET 23

This activity was organized by the WHO Regional Office for Europe to promote work aimed at achieving the following target in the health for all strategy.^a

TARGET 23

WASTE MANAGEMENT AND SOIL POLLUTION

By the year 2000, public health risks caused by solid and hazardous wastes and soil pollution should be effectively controlled in all Member States.

Keywords

CLINICAL WASTE
MEDICAL WASTE
HOSPITALS
HUNGARY

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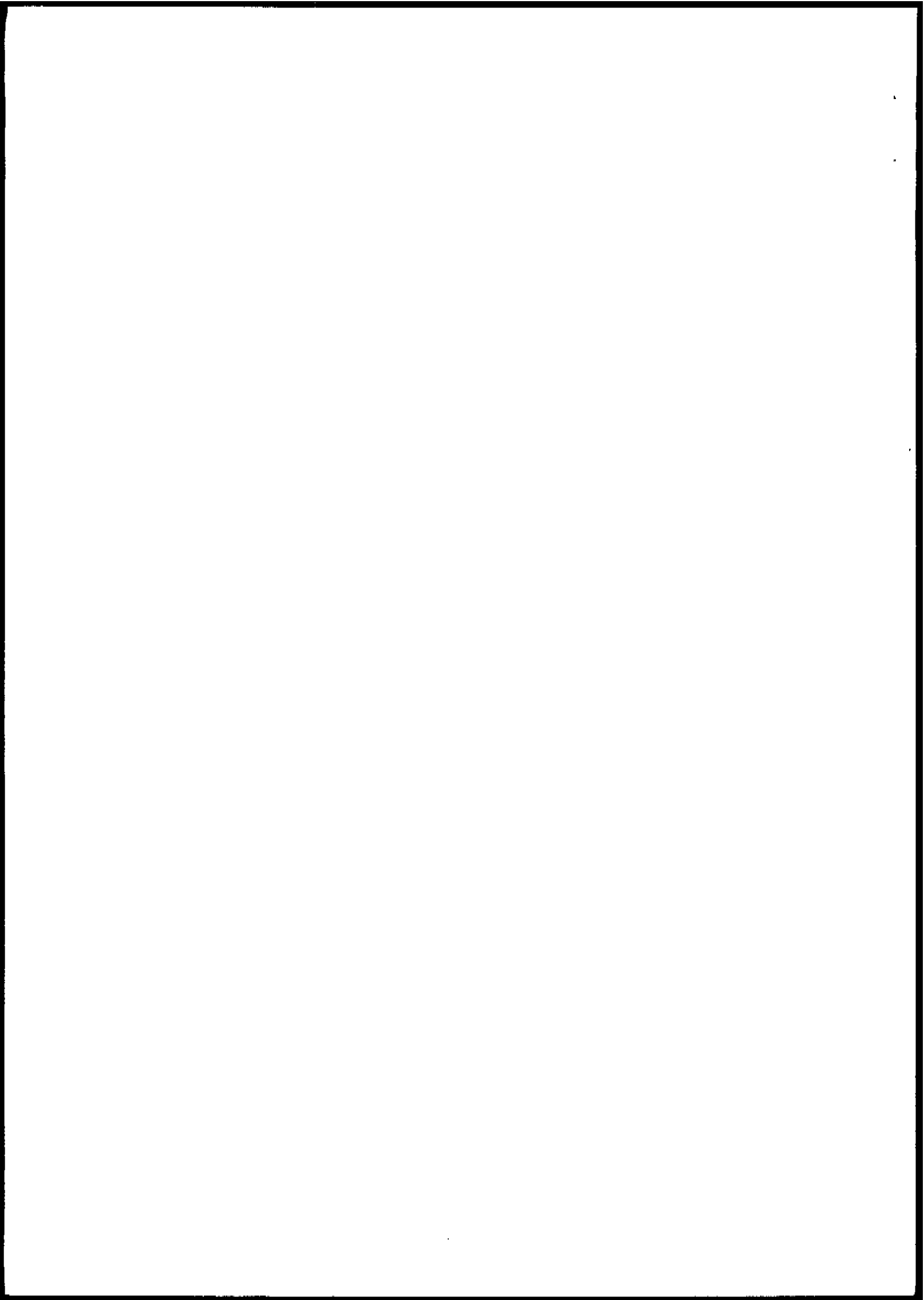
^a *Updating of the European HFA targets*. Copenhagen, WHO Regional Office Europe, 1991 (document EUR/RC41/Inf.Doc./1 Rev.1).

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Following a request from the Hungarian Ministry of Welfare, the WHO Regional Office for Europe (WHO/EURO) organised a Training Course on Medical Hazardous Waste Management. The course took place at the Agricultural University of Keszthely on the south-western edge of Lake Balaton from 9 to 13 December 1991. This was the second course organised by WHO/EURO on this subject, the first having taken place in Jerusalem, Israel, in February 1989.

Introduction

Regulations dealing specifically with medical waste management do not yet exist in Hungary; yet medical wastes are controlled by laws published in 1981. In 1987, the State Hygienic and Epidemiological Chief Inspectorate examined medical waste management throughout the country and concluded that about 50% of it was disposed of on dumps and 50% was incinerated in plants that do not have adequate gas cleaning equipment. There are no adequate segregation systems for medical waste and these will have to be devised, depending on the final disposal method and the economics of operating the total system.

The objectives of the course were to convene a representative cross section of Hungarian professionals with a common interest in developing a system of medical hazardous waste management; have them listen to presentations by an international panel on the current state of the art; and have them apply the information gained to the Hungarian situation. Because of the growing connections between Hungary and the European Communities, the participants will be expected to devise and implement a suitable regulatory system taking account of the requirements of the Commission of the European Communities (CEC).

Previsit

To acquaint themselves with the Hungarian situation, the international faculty panel members (Annex 1) were accompanied on Monday, 9 December, by members of the Hungarian organizing committee on a visit to the Fővárosi Margit Korház Hospital in Budapest. This visit provided the background on Hungarian practices and standards for medical hazardous waste management, a knowledge which was then very useful while lecturing at the course and during discussions with the course participants.

Participants

Of the 43 participants, including one from Prague, Czech and Slovak Federal Republic, who attended the course, about 20% understood sufficient English, the course language, to obtain maximum benefit. Therefore, simultaneous interpretation to/from Hungarian was necessary and was provided during the whole period of the course. The course participants came from a variety of disciplines. The majority were physicians, toxicologists, hygienists and nurses but there were also a number of county medical officers and public health inspectors, engineers, chemists, waste management specialists, architects, designers and safety officers. Twenty-eight of the participants stayed to the very end of the course and obtained their completion-of-course certificates. (A copy of the certificate is given in Annex 3.)

Course proceedings

The model of a basic course structure, developed for and revised after the course in Israel, was used as the basis for the course in Hungary. The initially devised programme was then amended as the course progressed to meet the local circumstances and needs. The actual programme details are given in Annex 2.

The course began in Keszthely on Tuesday, 10 December. An official welcoming address was given by Dr Elemer Papp, the County's Medical Officer of Health. The training course was officially opened by Dr Denes Papay, State Deputy Medical Officer of Health. Dr Michael Suess (the WHO course organiser), in his reply, thanked Dr Amanda Horváth, the Hungarian course coordinator, for her efforts and the efforts of her team, and for the overall work undertaken in Hungary to assemble the course participants. He then went on to describe the programme for the week and introduced the international faculty panel members. Lectures and slide presentations were then delivered by the panel members on the origins of public concern, problems associated with medical hazardous waste, infection control, regulation and control, categories of medical hazardous waste and methods of their segregation, storage, treatment, recycling and final disposal.

Lectures continued on Wednesday, 11 December, dealing with specific problems in more depth, including the concepts of the best practicable environmental option (BPEO), best available techniques not entailing excessive cost (BATNEEC), the overall waste management framework, environmental impact, training and the development of communication networks, principles of radioactivity and control of radioactive waste. The morning's work was concluded with an intensive panel session where questions on a range of subjects dealt with during the lectures and presentations were debated. Following a short presentation after lunch and a plenary briefing on the work in workshops, the participants divided into the three following workshops:

1. Development of national regulations and a code of good practice for the management of medical (clinical) waste, together with a set of measures to get them implemented.
2. Development of a model for the management of medical waste for a 600-bed general hospital, including out-patient facilities.
3. Development of a national epidemiological scheme on the effects of medical waste on human health, including an evaluation system.

In the evening, three video tapes were shown to the participants:

- Emerging viruses (British Broadcasting Corporation Open University)
- Protecting London's environment (London Waste Regulation Authority)
- Follow the yellow bag code (London Waste Regulation Authority)

On Thursday morning, 12 December, interim reports were given by the leaders of the three workshops and their presentations were then opened for discussion. The workshops then resumed. In the afternoon, a number of issues that emerged during the workshops were dealt with during lectures by the panel members, after which the workshops were resumed to continue work on the final reports.

The final session on Friday, 13 December, began with the presentation of the final reports on the three workshops, followed by a short lecture on the incineration of chemicals. Two visiting lecturers then dealt with their subjects of radioactive waste and the work of the International Solid Wastes and Public Cleansing Association (ISWA).

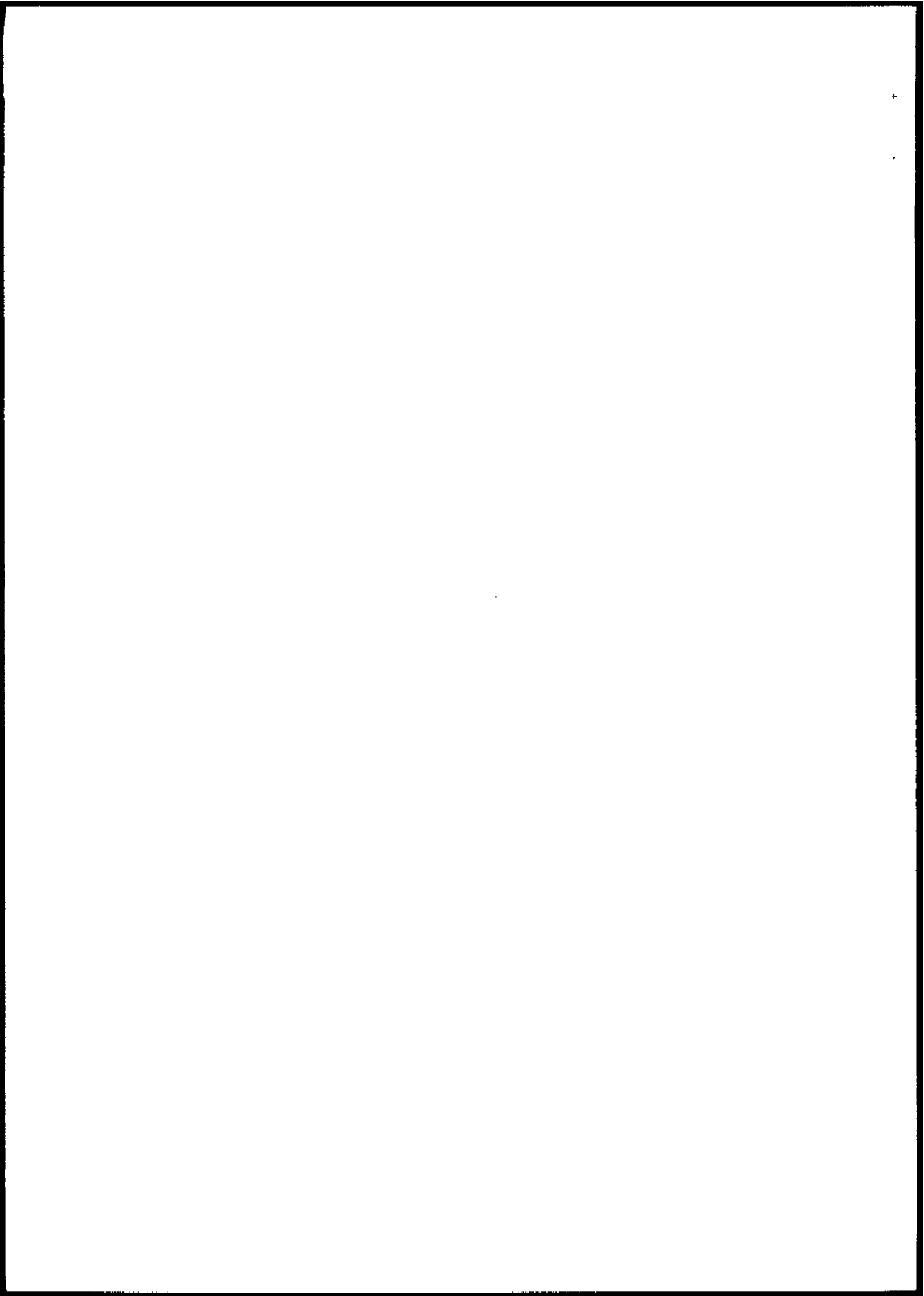
It was agreed at the end of the course that the course participants would meet in approximately one year's time to review progress. The course was concluded by the formal distribution to the participants of the course certificates by the course coordinators.

Conclusions and recommendations.

The training course was reviewed and evaluated by the international faculty panel members after its completion. It was agreed that, as a whole, it had been very successful and that the participants had benefitted in a number of different ways. For example, they were now more aware of the problems that inadequate systems of medical waste management may pose; they had discussed a range of methods for improving waste management systems; they had identified, through discussion in the very successful workshops, a number of problems, including the need for training, better communication systems and the need for a national system developed by practitioners working in the field; and they had made good progress in developing a national strategy, having bonded into teams in the workshops who would be able to tackle the implementation of such a strategy.

The format, length, pace and variety of the programme were all judged to be suitable and the documentation provided by the faculty were all of a high standard but would have been of greater benefit if translated into Hungarian.

The format has now been tested and the model programme stands up to scrutiny as a basis for future courses, but will require adaptation to meet local circumstances. Future courses will give more attention to some additional subjects (Annex 4).



ANNEX 1

LIST OF COURSE COORDINATORS AND LECTURERS

- | | |
|---|--|
| Dr Michael J. Suess
Regional Adviser for Environmental
Health Hazards
World Health Organisation
Regional Office for Europe
Copenhagen, Denmark | Course organiser and
WHO coordinator, and lecturer |
| Dr Amanda Horváth
Head, Department of Soil Hygiene
National Institute of Hygiene
Budapest, Hungary | Course coordinator in Hungary |
| Dr Anke Rot
Private Consultant
(Formerly, Head, Hospital Department,
Ministry of Welfare, Health and Cultural Affairs,
Netherlands)
Wassenaar, The Netherlands | Faculty panel member, panel coordinator,
and lecturer |
| Mr Björn O. Fremming
Chief Engineer, Haukeland Hospital
Bergen, Norway | Faculty panel member and lecturer |
| Mr William K. Townsend
Head, Policy and Technical Division
London Waste Regulation Authority (LWRA)
London, United Kingdom | Faculty panel member, lecturer,
and rapporteur |
| Mrs Jeanne Moeller
Secretary General, International Solid Wastes
and Public Cleansing Association (ISWA)
Copenhagen, Denmark | Guest lecturer |
| Dr Laszlo B. Sztanyik
Director-general, "Frederic Joliot Curie"
National Research Institute for
Radiobiology and Radiohygiene
Budapest, Hungary | Guest lecturer |

DETAILED PROGRAMME OF THE COURSE

Tuesday, 10 December, 1991

- 09.00 - 09.15 Official welcome by the Hungarian host
- 09.15 - 10.00 Opening ceremony
- 10.00 - 10.15 Introduction of faculty panel members and outline of the course programme
- 10.15 - 11.00 Lecture - origins of public concern, history of medical waste management and introduction to infection control
- 11.00 - 11.20 Break
- 11.20 - 12.20 Lecture and slide presentation - framework of waste management, including storage collection, transfer, treatment and disposal systems
- 12.20 - 13.05 Lecture - hazardous waste categories in hospitals and an introduction to segregation systems
- 13.05 - 14.30 Lunch
- 14.30 - 15.00 Lecture - introduction to environmental considerations in waste management, including public acceptance of waste management facilities
- 15.00 - 15.45 Lecture and slide presentation - systems of material handling in hospitals
- 15.45 - 16.30 Panel session open for questions from the participants and discussion
- 16.30 - 16.45 Break
- 16.45 - 17.30 Lecture - sterilization, disinfection, including hazards to human health from infections in hospitals

Wednesday, 11 December, 1991

- 09.00 - 09.15 Introduction of the planned workshops
- 09.15 - 09.45 Lecture - waste regulation and control concepts, including CEC waste directives, training and environmental impact
- 09.45 - 10.25 Lecture - intra-hospital communication, management committees, safety groups and influence of hygienists
- 10.25 - 11.20 Lecture - waste minimization and recycling in hospitals, techniques of incineration and systems of gas cleaning
- 11.20 - 11.50 Break
- 11.50 - 12.30 Lecture - principles of radioactivity, control of radioactive waste and international limit values
- 12.30 - 13.20 Panel session open for questions from the participants and discussion

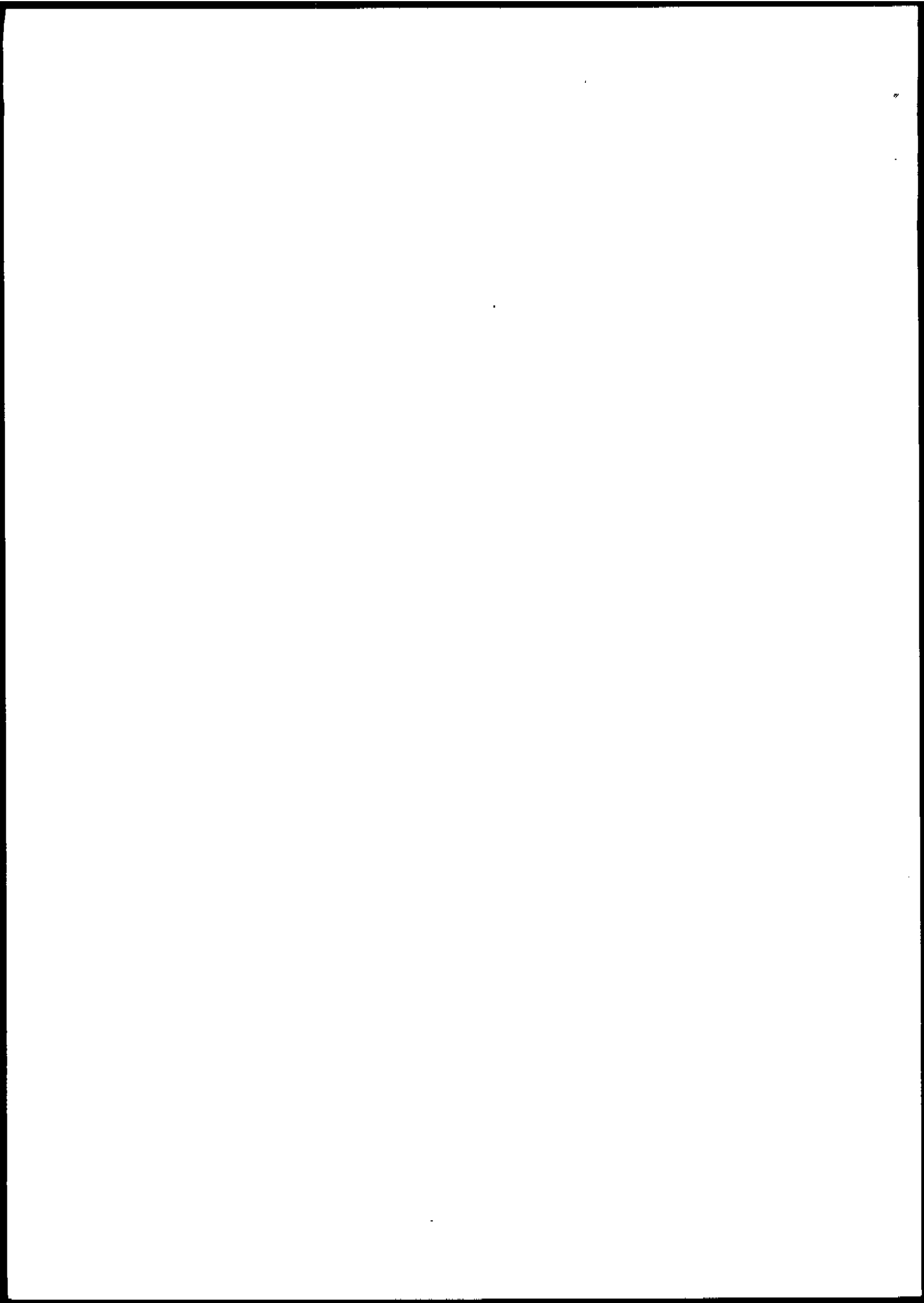
- 13.20 - 14.30 Lunch
14.30 - 14.45 Lecture - gas cleaning of incinerators, and gas sampling standards and results
14.45 - 17.30 Workshops - briefing, definition of group objectives and divided group activities
18.45 - 19.30 Video tape presentation

Thursday, 12 December, 1991

- 09.00 - 09.15 Introduction of the day's programme
09.15 - 11.05 Interim reports by the three workshops' leaders and panel discussion
11.05 - 11.25 Break
11.25 - 13.30 Workshops - continue work
13.30 - 14.30 Lunch
14.30 - 14.45 Lecture - waste minimization in hospitals, including categorization and packaging of hazardous waste
14.45 - 15.00 Lecture - infection control measures in hospitals, including highlights of video tapes and the lessons for waste management
15.00 - 15.30 Lecture - a national regulatory framework for waste management, including integration of clinical waste produced in the community
15.30 - 15.55 Panel session open for questions from the participants and discussion
15.55 - 16.05 Break
16.05 - 17.30 Workshops - preparation of final reports

Friday, 13 December, 1991

- 09.00 - 09.15 Introduction of the day's programme
09.15 - 10.15 Presentations - final reporting by the representatives of the three workshops
10.15 - 10.50 Lecture - regional hospital waste management in Norway, including chemicals in hospital and their disposal.
10.50 - 11.10 Break
11.10 - 12.00 Management of radioactive waste in medical institutes, including regulation and control measures
12.00 - 12.35 The work of ISWA
12.35 - 13.00 Distribution of certificates
13.00 - 13.10 Closing ceremony





ANNEX 3



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WORLD HEALTH ORGANIZATION EGÉSZSÉGÜGYI VILÁGSZERVEZET
Regional Office for Europe Európai Területi Irodája
Copenhagen Kopenhága
Denmark Dánia

MINISTRY OF WELFARE
Department of Public
Health and Epidemiology
Budapest, Hungary

NÉPJÓLETI MINISZTERIUM
Közegészségügyi és
Járványügyi Főosztálya
Budapest, Magyarország

EVSZ EGÉSZSÉGÜGYI VESZÉLYES HULLADÉKOK KEZELÉSE

Keszthely, 1991 december 10-13.

WHO TRAINING COURSE ON MEDICAL HAZARDOUS WASTE MANAGEMENT

Keszthely, 10-13 December 1991

THIS IS TO CERTIFY THAT:

EZENNEL IGAZOLJUK, HOGY:

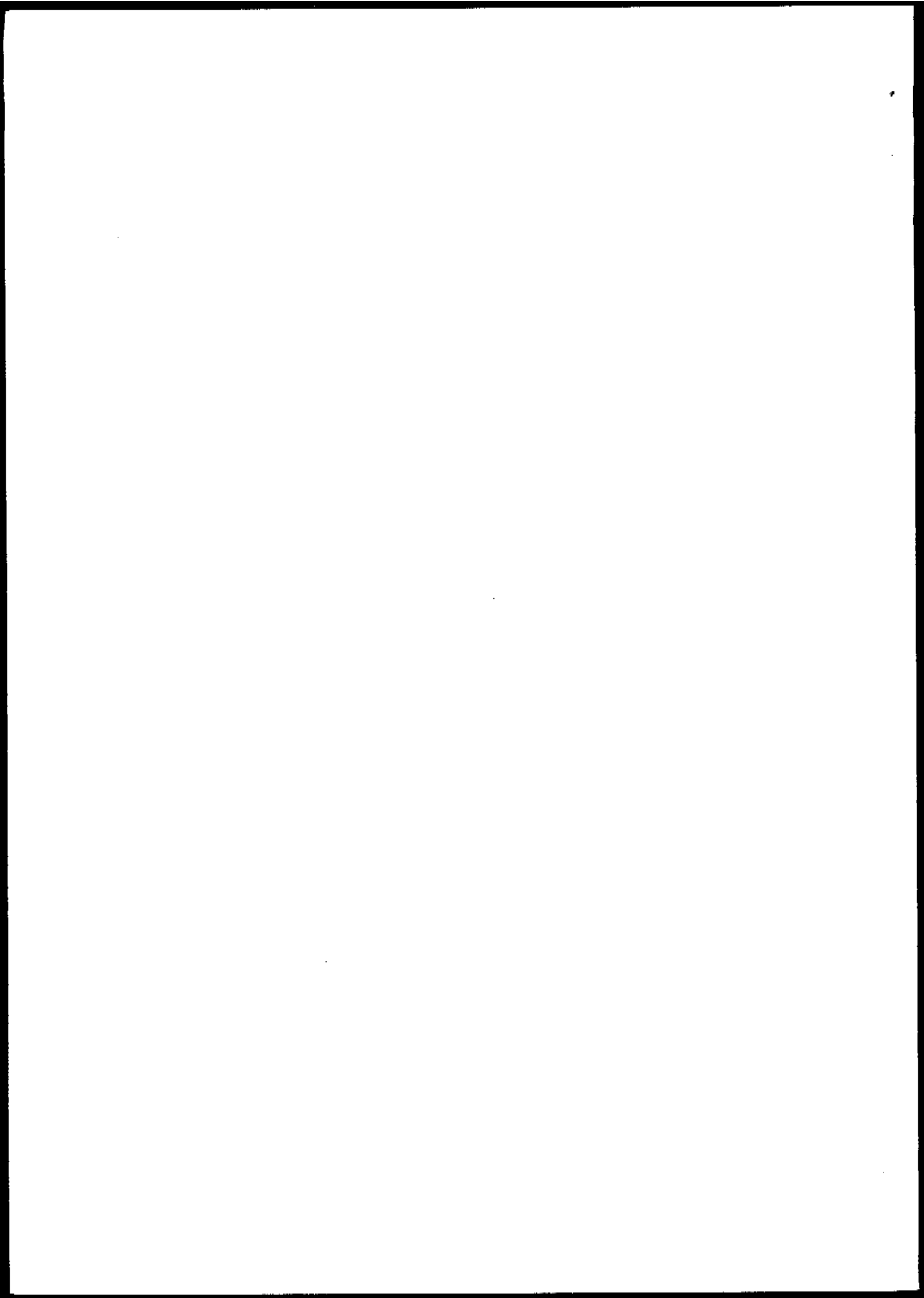
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Participated in and completed the Course of Study.

A tanfolyamon résztvett és elvégezte

Dr MICHAEL J. SUESS
COURSE COORDINATOR
WHO REGIONAL OFFICE
FOR EUROPE
COPENHAGEN

Dr AMANDA HORVÁTH
COORDINATOR
HUNGARIAN ORGANIZING
COMMITTEE
BUDAPEST



ANNEX 4

SUBJECTS WHICH REQUIRE MORE ATTENTION IN FUTURE COURSES

1. Public perception of risk
2. Risk assessment
3. Risk and safety management
4. International waste management
5. Chemical toxicity levels
6. Hazardous materials - data and information systems
7. The waste management framework outside the hospital
8. Problems of waste disposal
9. Radioactive waste management in the hospital
10. Hospital (clinical) waste arising in the community
11. Disposal of laundry sludge