









**Multiannual Programme  
of the Joint Research Centre  
1980 - 1983**

**1980**  
**Annual Status Report**  

---

**Training and education**

Published by the  
COMMISSION OF THE EUROPEAN COMMUNITIES  
Directorate-General  
Scientific and Technical Information  
and Information Management  
Bâtiment Jean Monnet  
LUXEMBOURG

Reproduction in whole or in part of the  
contents of this publication is free, provided  
the source is acknowledged

© ECSC-EAEC, Brussels-Luxembourg, 1981  
Printed in Italy

ISBN 92-825-2350-0  
Catalogue number: CD-NE-81-015-EN-C

## EDUCATION AND TRAINING

### 1980

Research Staff:	9
Budget:	784.000 ECU
Projects:	
16 Courses or Seminars, as listed in section 2	

Programme Manager:	<b>B. HENRY</b> Commission of the European Communities Joint Research Centre Ispra Establishment I-21020 Ispra (Varese), Italy
--------------------	--

### 1. INTRODUCTION

The Education and Training Programme has been set up in recognition of the growing importance of continuing education in modern technological society. It is designed to improve the dissemination of scientific and technical knowledge in subjects related to the research activities of the JRC, to the potential external users: industries, public bodies, research and educational organizations, etc. . .

Moreover, owing to the number and the quality of specialists of the various fields covered by the courses who are brought to Ispra as lecturers or participants, this programme plays an important role in the integration of the research teams of the JRC with the European scientific world, and in the development of contacts and ties between European scientists active in a given field.

The Education and Training programme consists both of Courses giving the fundamentals of new or specialized disciplines, and Seminars at research level presenting the state of very rapidly evolving subjects. Though oriented towards applied science and technology, generally their scientific content is at a high level and addressed to persons having an university education, and often some experience in the field.

The lecturing staff consists both of invited experts and JRC staff members.

The courses, intended for external participation, are advertised accordingly in European Countries. A registration fee is requested from participants to cover part of the organisation costs.

### 2. RESULTS

During the year 1980, the following Courses and Seminars have been held:

#### NUCLEAR SCIENCE

“Engineering Aspects of Thermonuclear Fusion“: Course, 5 days

“Radiation Shielding Methods“: Course, 5 days

#### REACTOR SAFETY

“Multiphase Processes in LMFBR Safety Analysis“: Seminar, 3 days

“Thermohydraulic Problems related to LWR Safety“: Course, 5 days

“Computation of Transient Fluid-Structure Problems“: Course, 5 days

“Safety Problems related to Sodium Handling“: Course, 5 days



## ENGINEERING

"Risk and Safety Assessment in Industrial Activities": Seminar, 5 days

"In-Service Inspection Techniques for Power Reactor Pressure Vessels": Course, 3 days

"Training of Operating Personnel for Technologies with Hazard Potential: Theory and Practice": Seminar, 5 days

"Introduzione alla Meccanica della Frattura" (in Italian): Course, 5 days

## CHEMICAL SCIENCE AND TECHNIQUES

"Practical Glass Capillary Gas Chromatography": Course, 4 days

"Application of Mass Spectrometry to Trace Analysis": Course, 5 days

## HEALTH PHYSICS/FISICA SANITARIA

"Fondamenti di Radioprotezione" (in Italian): Course, 9 days

"Radioprotezione Fisica nelle Attività Medico-Sanitarie" (in Italian): Course, 5 days

"Fondamenti di Sorveglianza Medica della Radioprotezione" (in Italian): Course, 5 days.

"Evaluation Methods of Internal Radioactive Contamination": Course, 5 days

Seven of these Courses were essentially repeats of courses held in previous years while the remaining nine were completely new. Among the latter, one should emphasize the first Ispra Course ever organized in the field of thermonuclear fusion which reflects the growing importance of this discipline in JRC research.

The place occupied by nuclear reactor safety in this programme should be pointed out: this is the first year in which the important effort devoted to this field in the research programme is shown in the education programme.

No course in the field of new energies took place in 1980, but this subject was well covered in 1979. It will also be covered in 1981.

Participation in the various courses (2146 participant - days) has varied widely, sometimes in a rather unexpected manner. However, as in the past, subjects having a potential interest for industry, and/or in which JRC research is already well established and integrated with European efforts have continued to produce the courses with the largest external appeal.

It is encouraging to note that the courses held in 1980 were judged "very satisfactory" or "satisfactory" by about 95% of those participants who answered the evaluation inquiries, and "unsatisfactory" by only 4%.

The work in publishing the Ispra Courses has been continued: 5 contracts for publications of courses of the 1980 programme have been allocated, which will bring to 16 the total number of Ispra Courses published or under publication.

Some progress has been made in the definition and the preparation of courses especially designed for the training of specialists from developing countries, as explicitly envisaged in the multiannual programme 1980 - 1983. A first course on "Managing National Energy Systems in Developing Countries" will take place in October 1981 and plans for courses on the applications of remote sensing techniques are currently being set up.

## 3. CONCLUSIONS

Although not as high as in 1977 or 1979, the external response to the courses, which is a good measure of the usefulness and the efficiency of this programme, has maintained a satisfactory level in 1980.

Progress in the diversification of the subjects, as a result of the development of new areas in JRC research, and of the objectives, with the implementation of a programme for developing countries, is encouraging.

**Salgs- og abonnementskontorer · Vertriebsbüros · Sales Offices  
Bureaux de vente · Uffici di vendita · Verkoopkantoren**

**Belgique - België**

*Moniteur belge — Belgisch Staatsblad*  
Rue de Louvain 40-42 —  
Leuvensestraat 40-42  
1000 Bruxelles — 1000 Brussel  
Tél. 512 00 26  
CCP 000-2005502-27  
Postrekening 000-2005502-27

*Sous-dépôts — Agentschappen:*

Librairie européenne — Europese  
Boekhandel  
Rue de la Loi 244 — Wetstraat 244  
1040 Bruxelles — 1040 Brussel

**CREDOC**

Rue de la Montagne 34 - Bte 11 —  
Bergstraat 34 - Bus 11  
1000 Bruxelles — 1000 Brussel

**Danmark**

*J.H. Schultz — Boghandel*

Møntergade 19  
1116 København K  
Tlf. (01) 14 11 95  
Girokonto 200 1195

*Underagentur:*

Europa Bøger  
Gammel Torv 6  
Postbox 137  
1004 København K  
Tlf. (01) 14 54 32

**BR Deutschland**

*Verlag Bundesanzeiger*

Breite Straße — Postfach 10 80 06  
5000 Köln 1  
Tel. (0221) 21 03 48  
(Fernscreiber: Anzeiger Bonn  
8 882 595)  
Postscheckkonto 834 00 Köln

**France**

*Service de vente en France des publica-  
tions des Communautés européennes*

*Journal officiel*  
26, rue Desaix  
75732 Paris Cedex 15  
Tél. (1) 578 61 39 -- CCP Paris 23-96

*Sous-dépôt*

D.E.P.P.  
Maison de l'Europe  
37, rue des Francs-Bourgeois  
75004 Paris  
Tél. 887 96 50

**Ireland**

*Government Publications*

Sales Office  
G.P.O. Arcade  
Dublin 1

or by post from

*Stationery Office*

Dublin 4  
Tel. 78 96 44

**Italia**

*Libreria dello Stato*

Piazza G. Verdi 10  
00198 Roma — Tel. (6) B508  
Telex 62008  
CCP 387001

*Agenzia*

Via XX Settembre  
(Palazzo Ministero del tesoro)  
00187 Roma

**Grand-Duché  
de Luxembourg**

*Office des publications officielles  
des Communautés européennes*

5, rue du Commerce  
Boîte postale 1003 — Luxembourg  
Tél. 49 00 81 — CCP 19190-81  
Compte courant bancaire:  
BIL 8-109/6003/300

**Nederland**

*Staatsdrukkerij- en uitgeverijbedrijf*

Christoffel Plantijnstraat, 's-Gravenhage  
Tel. (070) 62 45 51  
Postgiro 42 53 00

**United Kingdom**

*H.M. Stationery Office*

P.O. Box 569  
London SE1 9NH  
Tel. (01) 928 69 77, ext. 365  
National Giro Account 582-1002

**United States of America**

*European Community Information  
Service*

2100 M. Street, N.W.  
Suite 707  
Washington, D.C. 20 037  
Tel. (202) 862 95 00

**Schweiz - Suisse - Svizzera**

*Librairie Payot*

6, rue Grenus  
1211 Genève  
Tél. 31 89 50  
CCP 12-236 Genève

**Sverige**

*Librairie C.E. Fritze*

2, Fredsgatan  
Stockholm 16  
Postgiro 193, Bankgiro 73/4015

**España**

*Libreria Mundi-Prensa*

Castelló 37  
Madrid 1  
Tel. 275 46 55

**Andre lande · Andere Länder · Other countries · Autres pays · Altri paesi · Andere landen**

Kontoret for De europæiske Fællesskabers officielle Publikationer · Amt für amtliche Veröffentlichungen der Europäischen Gemeinschaften · Office for Official Publications of the European Communities · Office des publications officielles des Communautés européennes · Ufficio delle pubblicazioni ufficiali delle Comunità europee · Bureau voor officiële publikaties der Europese Gemeenschappen

Luxembourg 5, rue du Commerce Boîte postale 1003 Tél. 49 00 81 · CCP 19 190-81 Compte courant bancaire BIL 8-109/6003/300



**NOTICE TO THE READER**

All scientific and technical reports published by the Commission of the European Communities are announced in the monthly periodical '**euro-abstracts**'. For subscription (1 year : BFR 1.500) please write to the address below.

ECU	BFR.	UKL	IR	USD.
3.60	150	2	2.50	4.30



OFFICE FOR OFFICIAL PUBLICATIONS  
OF THE EUROPEAN COMMUNITIES

ISBN 92-825-2350-0

Boîte postale 1003 - Luxembourg

CDNA07261ENC