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The European Nuclear Decommissioning Training Facility II (EUNDETRAF II)

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Final report

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Area: Other activities in the field of nuclear technologies and safety

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Table of contents

Executive summary	1
1 Project objectives and major achievements during the reporting period	2
1.1 Project objectives	2
1.2 Problems	2
2 Work package progress in the period.....	3
2.1 Work package progress	3
2.2 List of project deliverables	7
2.3 List of milestones	8
3 Consortium management.....	9
3.1 Project coordination (Work Package 1)	9
3.2 Management aspects.....	9
Annex: Plan for using and disseminating knowledge	11
Exploitable knowledge and its use.....	11
Dissemination of knowledge	12
Publishable results	15

Executive summary

The primary aim of EUNDETRAF was to pool together knowledge and expertise in the field of nuclear decommissioning from acknowledged European experts and then disseminate it to the wider nuclear industry to improve safety standards and European competitiveness. The mechanism of dissemination of knowledge was by holding training courses. The first training course was held in France in 2004, the second one in Italy in 2006. Each training course was composed of a one-week theoretical and a one-week practical part. The theoretical part was aimed at a broader audience. It consisted primarily of classroom presentations by recognised experts covering all aspects of decommissioning. In addition, there were group discussions and participation in desktop solution of decommissioning problems. Each participant received a textbook covering all the lecture materials as well as handouts of PowerPoint presentations at the beginning of the course. The practical part included visits to decommissioning sites and inspection of decommissioning activities. However, because of problems of site visiting by large numbers of people, this part was limited to a smaller number.

EUNDETRAF II was a consortium of 11 main European organisations representing educational establishments, nuclear industry operators, R&D organisations and regulatory bodies. The consortium consisted of SCK•CEN (Belgium), RWE NUKEM (UK), EWN (Germany), University of Hannover (Germany), Belgatom (Belgium), SOGIN (Italy), CEA/DEN-DPA (France), NRG (Netherlands), UKAEA (UK), DECOM (Slovak Republic) and CEA/INSTN (France).

The first course took place in Saclay, France, from 22 November to 3 December 2004. 29 persons participated in the course, of which 15 participated in the theoretical as well as in the practical part. A quarter of the participants came from the new Member States and 4 came from outside Europe (Japan and Taiwan).

The second course took place in Caorso, Italy, on 6-17 November 2006. In total 26 persons participated in the course, of which 5 participated also in the practical part. A fifth of the participants came from the new Member States and one person came from outside Europe (Japan).

The project ended with the knowledge dissemination meeting, where the consortium decided to stop with the project as foreseen in the contract with the European Commission but to keep the *course material* available for possible future collaboration with other training projects or existing courses.

1 Project objectives and major achievements during the reporting period

1.1 Project objectives

During the first period of the project (year 2004) the objectives were:

- to hold a kick-off meeting in the beginning of the course to make the necessary agreements between the partners on the objectives and certainly the planning for being ready to give the first course at the end of 2004,
- to make a leaflet for having a communication way to the public and thus possible participants, and
- organising the first EUNDETRAF II course in France.

Also during this period the European Commission requested the drafting of a project presentation and a project communication plan.

During the second period of the project (year 2005) the objectives were:

- to hold a peer review of the course in order to have input for the revision of the textbook and transparencies,
- to revise and distribute the course leaflet,
- to start revising the textbook and transparencies, and
- to start with the preparatory works for the practical organisation of the fourth course that will be held in Italy by SOGIN.

During the third period of the project (year 2006) the objectives were:

- organising the second EUNDETRAF II course in Italy, and
- to hold the knowledge dissemination meeting.

1.2 Problems

As the course dates were fixed at the beginning of the project, all the partners knew the deadline. As there was sufficient time for preparing the course, all the partners could easily reach the deadline.

The encountered problems were small and of organisational nature. At the end of 2004, the Italian partner fell ill and this delayed the final revision of his chapter (Chapter 5: Regulatory aspects on decommissioning). Secondly, the Italian course was scheduled to begin in 2006 but was postponed to the end of that year due to a big international conference on decommissioning. This resulted in the fact that the revised leaflet and the electronic inscription form were only available in October 2006.

2 Work package progress in the period

2.1 Work package progress

2.1.1 The kick-off meeting (Work Package 2)

The kick-off meeting, organised by the project coordinator, was held in Brussels on 17 February 2004.

The main goals of this meeting were:

- to define the course date and place
- to set up the structure of the textbook and the content of the chapters
- to discuss the practical organisation of the course
- to discuss some financial and contractual aspects of the project
- to set up an action list and a planning.

The course took place in France at Saclay (near Paris) from 22 November to 3 December 2004.

For this meeting the project coordinator wrote the minutes (Deliverable D1).

2.1.2 Making a leaflet (Work Package 3a)

The partner CEA carried out this work package based on the leaflet from EUNDETRAF I.

The leaflet with inscription form (Deliverable D2) was printed and ready for distribution at the end of April, two weeks later than foreseen in the planning. The leaflet and the inscription form are also available on the decommissioning website (<http://www.eu-decom.be>) for online inscription.

2.1.3 Course preparation (Work Package 4a)

Immediately after the kick-off meeting, the course preparation started. This preparation contained two main items, the editing of the textbook and the editing of the transparencies. All the partners participated in this work package.

In the kick-off meeting, the partners agreed that 15 October 2004 would be the deadline for editing the textbook (Deliverable D4). In order to reach this deadline, the following strategy was agreed.

All the partners who are chapter coordinators set up the framework of their chapter and sent it to the editor in chief (RWE NUKEM) before the end of March. In the beginning of April, an iteration process of one month started for getting a consistent framework of the whole textbook. The main objective of this process was to avoid great overlaps between the chapters. Once the framework was finalised, the partners could start writing the text. The goal was to have the draft of the chapters

ready at the beginning of July so that a second iteration process could start, namely checking the text. Due to the enormous amount of work and the summer holiday, the editor-in-chief had 3.5 months to check the whole textbook.

The consortium did not succeed to reach the deadline of 15 October. The textbook was available on 5 November, two weeks before the start of the course in Saclay. Nevertheless, those two weeks were sufficient to print out the textbook so that all the participants had a copy during the course.

For the transparencies (Deliverable D5) the partners agreed in the kick-off meeting to have them available by mid-September. This deadline was not reached because the transparencies were available only on 10 November. This was due to the fact that most of the partners spent a lot of their time writing the textbook and that they made their transparencies after the finalisation of their part of the textbook. Not that this delay caused a big problem. The transparencies were available before the actual course and there was sufficient time to reproduce them for the participants.

2.1.4 The first course (Work Package 5a)

Once the leaflet and the inscription form were available (on hardcopy and on the Web) one could start with the practical organisation of the course. This comprised mainly the administration of the participants, the setting up of a bus transport between the hotels and the course place and all the practical matters concerning the practical week of the course. This work was carried out by INSTN (CEA).

The course took place at the date agreed during the kick-off meeting and no major problems were encountered. In total 34 persons participated in the course, of which 15 participated in to the theoretical as well as in the practical part.

At the end of the course, the participants received a certificate and they had to fill in a questionnaire. Based on these questionnaires, INSTN edited a course evaluation report (deliverable D7). This report was available from 16 February 2005.

2.1.5 The peer review (Work Package 7)

This period started with the peer review of the course executed by the CEA/INSTN (National Institute for Nuclear Sciences and Techniques), which is an advanced education institution devoted to post-graduate education and professional training.

This review resulted in a peer-reviewed report (Deliverable D8) that was distributed to the partners on 21 March.

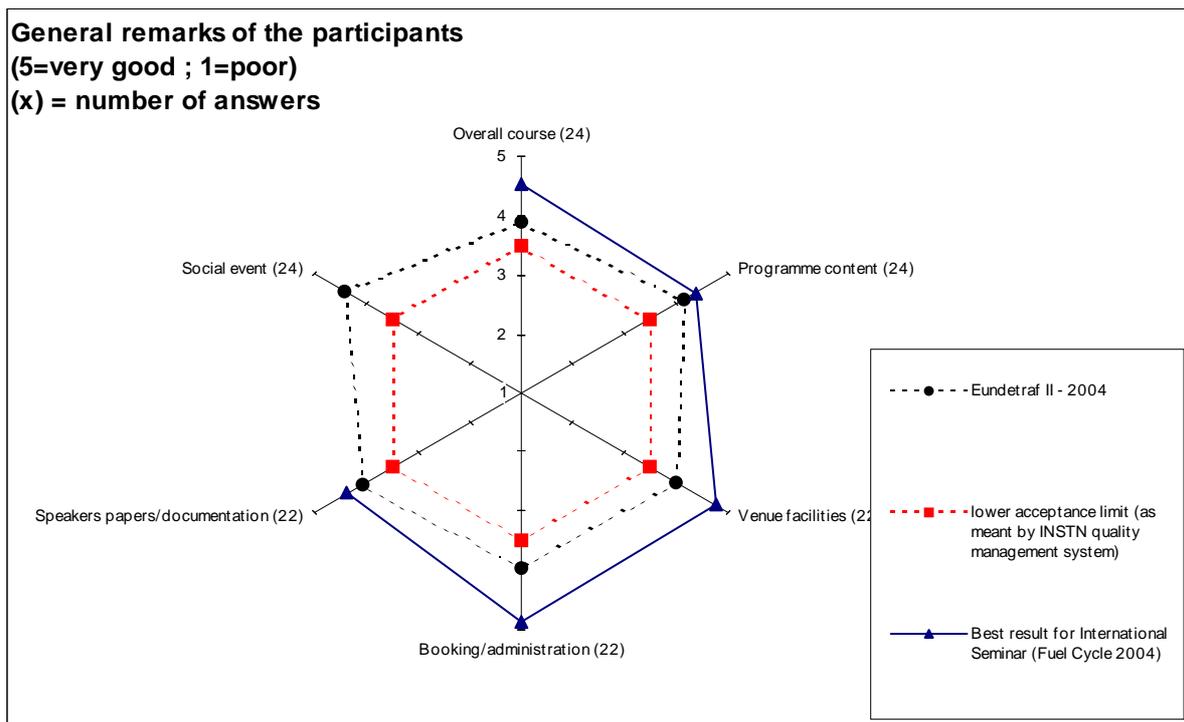
Listed below are the main conclusions of the peer-reviewed report:

- It appears that the content of the course does match the expectations of the participants as all topics important to dismantling are addressed, in a methodical arrangement and with an appropriate duration.

Thanks to the quality of the lecturers, the objectives initially set were met.

Also, besides their oral presentations which were praised by a large majority, their effort to provide a high-quality written document (named the “orange book” by the participants) should be stressed particularly as this was a lesson learnt from EUNDETRAF I and a commitment when applying for EUNDETRAF II.

- For the next seminar, registration conditions should be improved: more detailed information should be sent as early as possible.
- The practical part of the seminar should be more focused on practical aspects: especially, as far as possible, it should include practical demonstrations of the techniques used in dismantling (cutting, decontamination, measurement, use of robots, remote handling, etc.).
- The INSTN quality assessment system was applied to EUNDETRAF II and the results were compared to the lower acceptable limits and to the best ones for an international seminar organised by the INSTN in 2004 (the Nuclear Fuel Cycle, 29 November to 10 December 2004); they are presented in the diagram below which shows that the first EUNDETRAF II seminar lies in the medium.



2.1.6 Revision of the leaflet (Work Package 3b)

The revised leaflet (Deliverable D9) was distributed to the partners at the end of October 2006, eight months later than foreseen.

An action that took quite a long time was the fixing of the course dates for the last course. First there was a demand from a group of 8 Bulgarian people who asked, in the framework of a PHARE contract, to organise the fourth course still in 2005. Finally, SOGIN was not able to do this in 2005 and at the end of June 2005 it was decided to organise the normal course on 13-24 March 2006.

At the end of February 2006, the number of inscriptions was very low probably due to an international conference, held in Hamburg at approximately the same time of the course, on "Release of Radioactive Material from Regulatory Control".

The consortium decided then to postpone the course to 6-17 November 2006. As this date was officialised mid-2006, the leaflet and electronic inscription were officially available at the end of September/beginning of October.

2.1.7 Revision of the textbook and transparencies (Work Package 4b)

All the partners could start with this work packages as soon as they had received the peer-reviewed report (Deliverable D8). As the course was postponed to November 2006, all the partners had enough time to revise their chapters and presentations. The textbook and presentations were delivered to SOGIN in time for printing.

The (revised) deliverables of this work package were the textbook (D4) and the presentations (D5).

2.1.8 The second course (Work Package 5b)

SOGIN started this period with the practical organisation of the second course. This contains mainly the drafting of a course programme.

In parallel, SCK•CEN updated the EUNDETRAF website (www.eundetraf.be) for the online course inscription and a general update for promotional reasons. The latter comprises the uploading of the following:

- The transparencies of the first course held in Saclay, France;
- Pictures of the course in Saclay, France; and
- The revised leaflet for the second course.

The update of the website was finished at the same moment as the revised leaflet; at the end of October.

The theoretical part of the course was held at the Coarso nuclear power plant on 6-10 November 2006, while the practical part was partially given at Caorso and at the Trino nuclear power plant on 13-17 November 2006. In total 26 persons participated in the course, of which 5 participated also in the practical part.

Like with the first course at Saclay, the participants received a certificate and they had to fill in a questionnaire. Based on these questionnaires, SOGIN edited a course evaluation report (deliverable D13). This report was available on 22 November 2006.

2.1.9 The knowledge dissemination meeting (Work Package 6)

At the end of the project, a meeting was foreseen to discuss the future of the project and course. This meeting, called the knowledge dissemination meeting, was held in Brussels on 4 December 2006.

Despite the low number of partners at this meeting, it was decided to stop the project as foreseen in the contract but make it possible to offer (a part of) the course material to other courses or interested organisations and to set up a cooperation with them.

The deliverable of this work package was the meeting report (D16) available on 20 December 2006.

2.1.10 Grants (Work Package 8)

On demand of the European Commission, the project foresaw for each training course grants for a total of EUR 12 500. The aim of these grants is to attract young students from central and eastern European countries.

For the first course, held in Saclay, three students were restrained. Unfortunately, for the course held in Caorso no one sent a candidature.

2.2 List of project deliverables

Del. no	Deliverable name	Work package no	Date due	Actual/forecast delivery date	Estimated indicative person months	Used indicative person months	Lead contractor
D1	Kick-off meeting report	WP 2	M1	M1	n.a. *	n.a.	SCK
D2	Leaflet first course	WP 3a	M3	M4	0.43	n.a.	INSTN/CEA
D4 D5	Textbook Transparencies	WP 4a	M8	M11	6.35	n.a.	All partners
D7	Evaluation report first course	WP 5a	M12	M14	n.a.	n.a.	INSTN/CEA
D8	Peer-reviewed report	WP7	M16	M15	0.45	n.a.	INSTN/CEA
D9	Leaflet second course	WP3b	M14	M22	0.43	n.a.	SCK•CEN
D13	Evaluation report second course	WP5b	M24	M35	n.a.	n.a.	SOGIN
D16	Knowledge dissemination report	WP6	M36	M36	n.a.	n.a.	SCK•CEN
D17	Project presentation	WP1	M3	M3	n.a.	n.a.	SCK•CEN
D18	Project communication plan	WP1	M6	M6	n.a.	n.a.	SCK•CEN
-	Project reports	WP1	See Section 3.2				SCK•CEN

* Not available.

2.3 List of milestones

Milestone no	Milestone name	Work package no	Date due	Actual/forecast delivery date	Lead contractor
M1	Kick-off meeting	WP2	M2	M2	SCK•CEN
M2	Leaflet available	WP3a	M4	M4	CEA/INSTN
M3	Draft framework textbook	WP4a	M4	M4	NUKEM
M4	Definitive framework available	WP4a	M4	M4	NUKEM
M5	Draft textbook available	WP4a	M7	M7	NUKEM
M6	Textbook available	WP4a	M10	M11	NUKEM
M7	Scheduling first course	WP5a	M11	M11	CEA/INSTN
M8	Revised leaflet available	WP3b	M16	M33	
M9	Transparencies available	WP4a	M9	M11	NUKEM
M10	Revised textbook available	WP4b	M28	M35	NUKEM
M11	Revised transparencies available	WP4b	M28	M35	NUKEM
M12	Scheduling second course	WP5b	M28	M35	SOGIN

3 Consortium management

3.1 Project coordination (Work Package 1)

During the first period, the project coordinator wrote the project communication plan and the project presentation, required by the Commission. These documents were delivered on time to the Commission. Although the consortium agreement had to be delivered at the end of March, it was already set up before the signing of the contract.

A major coordination task was of course the organisation of the first course in Saclay, which required intensive communication between the organising partner CEA and the project coordinator.

The second period started with the writing of the necessary periodic project reports by the project coordinator for the European Commission. These reports were the periodic activity report, the periodic management report and the report on the distribution of the EC's contribution. Also during this period, the project coordination focused on the fixing of the new date of the second course. This comprised an intensive and broad communication between the SCK•CEN (project coordinator) and SOGIN (course organiser).

As for the second period, the third period started also with the writing of the same periodic reports by the project coordinator.

At the end of this period, an important amount of effort was spent by the project coordinator on writing the different, contractually demanded, final reports and filling in (online) questionnaires. The list below summarises these items:

- Final activity report
- Final management report
- Final plan for using and dissemination of the knowledge
- Final report on the distribution of the EC's contribution
- Final science and society reporting questionnaire
- Final reporting questionnaire on workforce statistics
- Final socio-economic reporting questionnaire.

Besides these administrative aspects, a lot of coordination was done by SOGIN and the project coordinator for the practical organisation of the second course, held in Caorso.

3.2 Management aspects

As it was a small project with clear deliverables and deadlines for each partner, the project did not encounter major management difficulties. Once the course dates were fixed, all the related tasks were done on time. The fact that the communication between the partners was mainly done by e-mail has not slowed down the project. A

lot of the partners participated already in EUNDETRAF I and had gained some experience on the importance of reaching the different deadlines.

The only negative aspect encountered was the severe and heavy project administration required by the European Commission. Only in October 2004, ten months after the start of the project, the European Commission released the document concerning the project reporting. Because this document was not available at the time of the contract negotiations, the type and number of reporting deliverables was based on FP5 projects.

This comprised three management reports (Deliverables D3, D10 and D14), two progress reports (Deliverables D6 and D12), a mid-term report (Deliverable D11) and a final report (Deliverable D15).

Annex: Plan for using and disseminating knowledge

Exploitable knowledge and its use

The only exploitable object of the project is the course itself.

Therefore, during the time that the project ran, efforts were taken to comply with a whole course or a part of a course to any training request in the field of decommissioning.

There were two such efforts. In a first one SCK•CEN and RWE NUKEM replied to a bid for giving training courses in Romania. One of these training courses covers the field of decommissioning which gives the opportunity to use parts of the EUNDETRAF course. A second one was that decommissioning training could be given to people from Lithuania in the framework of a PHARE contract. This training course would be based on the EUNDETRAF course. Both efforts ended up without results. For the first one, the proposal was not retained by the caller and for the second one the course could not be organised due to the late demand of the PHARE project and the fixed end date for that specific course.

At the end of the project, the partners organised the knowledge dissemination meeting (Work Package 6). After intensive discussion, the present partners had the following opinions:

- As the signals from the European Commission for funding new training courses seemed not so positive, it would not be worthwhile to submit a new project proposal for a special training course in the framework of FP7.
- All the partners had a negative financial balance for this project. Therefore they would encounter major difficulties justifying the organisation of such a course on their own vis-à-vis their financial departments.

As result, the main conclusion was to stop with the project as foreseen in the contract with the European Commission but to keep the existing course material available for other courses like:

- ENEN or European Nuclear Education Network, which is a non-profit international organisation with the mission to preserve and develop the higher nuclear education and expertise.
- EMRP or European Master in Radiological Protection funded by DG Education and Culture of the European Commission, with SCK•CEN, UJF Grenoble, the Technical University of Prague, INSTN, and NHC Scotland as partners.
- ENETRAP or European Network on Education and Training in Radiological Protection.

The goal is to inform the responsible of these courses that EUNDETRAF II material exists and that they can use it. This message was communicated by the project coordinator to the SCK•CEN responsible for training and education who is also the SCK•CEN contact person for ENETRAP.

In case a EUNDETRAF II partner sees an opportunity to organise a complete course or a part of the training course in the future, he can always take contact with the project coordinator.

Dissemination of knowledge

As the training course itself is the only exploitable object of the course, one has to attract possible participants for the course. Therefore the communication with the public is very important and can be considered as a sort of knowledge dissemination. In the first paragraph below the different ways of communication to the public are discussed. A next paragraph summarises what was already undertaken while the last paragraph discusses the future actions.

As the second course was organised in the last year of the project, there was plenty of time for the execution of the different work packages. Even the delay of a few months for revising the leaflet did not affect the general project planning.

The different ways of communication

The leaflet

A leaflet is the basic communication way and is therefore a work package in the project. The responsible partner for this work package was CEA (France). The leaflet reflects the content and the main objectives and goals of the course. It also included the necessary data for the interested participants' inscription.

The leaflet was a coloured two-sided A4 cardboard paper with a registration form included. It will be printed in 500 copies and distributed amongst the different partners. In their turn, the partners will distribute the leaflet to interested participants via other communication ways described below (e.g. personal contacts, conferences).

The World Wide Web

At the same time of the issue of the leaflet, this leaflet and the registration form were also electronically available on the World Wide Web, more specific on the European decommissioning site www.eu-decom.be. In this way, we used a modern way of communication in the society of today.

The partners selected this site for the following reasons:

- the site had the same subject as the course, namely (nuclear) decommissioning; so the visiting public of this site could be also interested in the course;
- the EUNDETRAF II project co-ordinator, SCK•CEN, was also the website responsible;
- the www.eu-decom.be site was also a EC project so with the use of this site for EUNDETRAF II we fulfilled the demand to merge different EC projects.

Another advantage of having the leaflet and the registration form on the Web was that the registration could be done automatically and that the registration management of the course was easier.

Another goal of using the Web was that one could use the linking possibility between different websites. Therefore the partners agreed during the kick-off meeting to investigate the possibility of creating a link between their home site and the leaflet + the registration form on www.eu-decom.be.

It was the responsibility of SCK•CEN to put the leaflet + the inscription form on www.eu-decom.be. The design of the registration management (setting up of a small database and the automatic messenger tool to the project co-ordinator and the course secretariat when somebody registers) was also the responsibility of SCK•CEN.

Personal contacts

Personal contacts are the most common way to communicate and make publicity for the EUNDETRAF II course. The main advantage of a personal contact is that it is direct, which can increase the effectiveness of the publicity.

The fact that the partners belong to the main European decommissioners and that the world of decommissioning is rather small implies that the partners can spot very easily a need of decommissioning training by a contact relying on his personal contact network. Once a training need was spotted, the partner could then easily make publicity for the course.

It was up to each partner to select the time and his contact person.

Conferences

Conferences are very similar to personal contacts but it is not so direct.

At a conference, a partner can make publicity for the course. This can be done by several ways, like mentioning the course at the end of a presentation or present the leaflet on the stand of his firm.

The kick-off meeting discussed this way of communication and at that time it was not yet known to which conferences all the partners would go. Therefore it depended on the partner's intention to make publicity for the course on conferences.

Mailing

Instead of making publicity on conferences, one could also use the mail service of the Internet for distributing the leaflet and inscription form.

If a partner's company had a contact database, a selection could be made of persons to be contacted for this course.

Besides mailing on own initiative, another mailing was carried out amongst the previous participants of the former courses in EUNDETRAF I, which was subject of an FP5 contract from which EUNDETRAF II was a continuation. This action was done by SCK•CEN.

A third mailing was done with the mailing list managed by the European Commission. The project co-ordinator took contact with the respective press and information officer to discuss how interested persons could be reached.

Nuclear networks and international nuclear organisations

A lot of the partners participated in the earliest decommissioning programmes of the European Commission. As a consequence, those partners became specialists in different national and international workgroups organised by national and international organisations. Being member of those organisations can open a way to reach groups of persons interested in the course.

National organisations like the Nuclear Society and the Young Generation Society give the opportunity to reach persons of a country's own nuclear industry. International organisations like the IAEA and OECD give the possibility to reach a public outside the countries of the EU.

National contact points

Agreed at the kick-off meeting, each partner took contact with his own national contact point to discuss how the national contact point could promote EUNDETRAF II.

Advertising

On the one hand, we relied on the advertising possibilities of the European Commission, namely the free magazine *RTD Info* and the Research website on EUROPA. For the first one, the project co-ordinator contacted the European Commission on how one could advertise for the course. For the second one, the project co-ordinator sent the project presentation, which was already a project deliverable, for publication on that website.

On the other hand, there was always the possibility to advertise in specific journals. The main problem here was the financial aspect. Advertising in these journals implicated costs that were not foreseen in the project budget. This implied that the budget for covering these costs had to come from the received registration fees. Estimating the total amount of registration fee was very difficult and therefore the partners decided not to rely very much on this type of communication way. Nevertheless, if a partner found it useful to put an advertisement in a journal he could always contact the project co-ordinator to get permission to publish the advertisement.

Achievements

- The leaflet and the availability of the leaflet and inscription form on the www.eu-decom.be site were necessary to register the interested persons. This implied that those two deliverables had to be available as soon as possible.
- The communication ways personal contacts, conferences, and nuclear networks and international nuclear organisations were used in the whole duration of the project. The frequency of use depended on the partner's goodwill.
- Mailing, advertising, and using national contact points were done approximately four months before the start of the course (i.e. from the end of June to the beginning of July).
- The project coordinator wrote a project presentation and sent it to the Commission. The Commission used this project presentation for its database and made it available on the Internet.

Publishable results

Regarding the contents of the project, the project hasn't any publishable result.