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IAEA 1st CG-Meeting on Radiation Protection of the Environment

Vienna, January 16-17, 2006

***EC-RTD FP 5 & 6 Activities on
Radiation Protection of the Environment***

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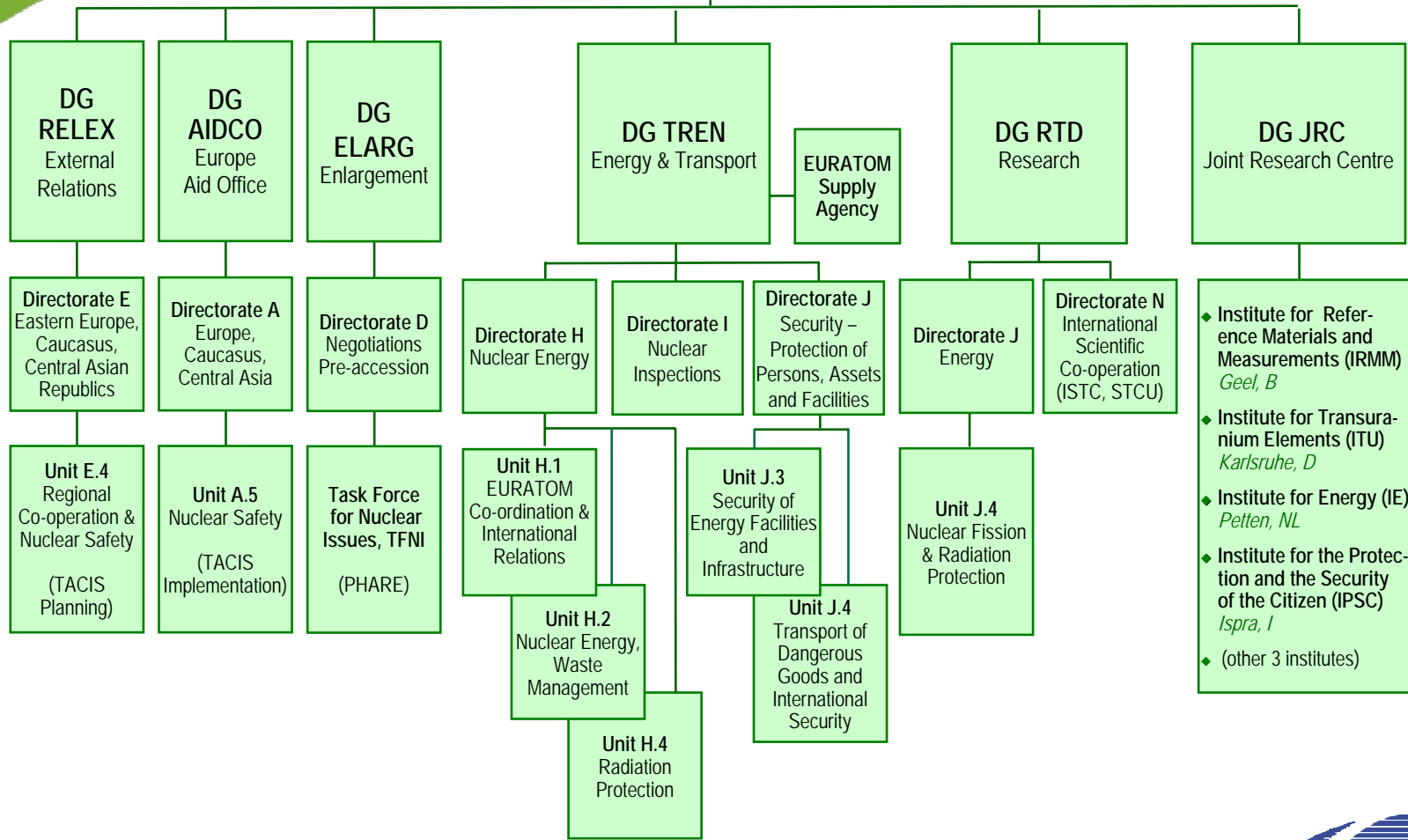
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NUCLEAR ISSUES IN THE EUROPEAN COMMISSION





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DG RTD: Research

Nuclear Fission & Radiation Protection Unit

(<http://www.cordis.lu/fp6-euratom>)

(http://europa.eu.int/comm/research/energy/fi/article_1121_en.htm)

- Research is carried out in the EU as part of the Research & Training programme on “Nuclear Energy” within the Framework Programme of *European Atomic Energy Community (EURATOM)*
- It contributes to *Fission Energy & Radiation Protection* research topics; emphasis is changing with Framework Programme activities
- Current Framework Programme (FP6) activities are:
 - * Management of Radioactive Waste
 - * **Radiation Protection**
 - * Other activities in the field of nuclear technology & safety





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Radiation Protection Research

Radioecology FP4 & 5

(1994 – 2002)

- **EC funded projects:**

- ~ 33 projects with a Community contribution of ~ 18 M€

- **Objectives:**

- Improved understanding and modelling of the behaviour and impact of radionuclides in various environments (terrestrial & aquatic)

- Software packages for environmental decision support (EDS) systems for remediation and counter measurements

- Protection of the environment

- * provide the conceptual, methodological & scientific basis for policy/standards development*





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Radiation Protection Research *Protection of the environment FP5* (1998 – 2002)

FASSET project (<http://www.ERICA-project.org>)

- Launched in Nov. 2000 & coordinated by SSI, SE, involved 15 organisations in 7 European countries
- Developed a **framework for assessment of environmental impact** of ionising radiation in European ecosystems (marine, freshwater & terrestrial) including ~30 reference organisms
- Provided **database and models** for assessment of the environmental transfer of radionuclides and their uptake and turnover in the identified target organisms, including a **handbook** on the use of the models.
- Developed **radiation dosimetry models** for selected target organisms, which can be used to tabulate absorbed dose rate coefficients for each organism and major radionuclide of concern
- Final report in spring 2004; see also:

Journal Radiation Protection Vol. 24, N° 4A, Dec. 2004





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Radiation Protection in FP6 (2002 - 2006)

- **Quantification of risks at low and protracted doses:**
 - Epidemiological studies
 - Cellular and molecular biology research

- **Better integration of European research on:**
 - Medical exposures and natural sources of radiation
 - **Protection of the environment and radioecology**
 - Risk and emergency management
 - Protection of the workplace





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Radiation Protection in FP 6 (2002 - 2006)

- *Quantification of risks at low and protracted doses:*
 - Epidemiological studies
1 IP & 3 STREP; EC funding M€ ~ 12.0
 - Cellular and molecular biology research
1 IP & 1 SSA; ~ 10.4
- *Better integration of European research on:*
 - Medical exposures and natural sources of radiation
1 STREP, 1 CA & 1 SSA ~ 3.25
 - *Protection of the environment and radioecology*
1 STREP & 1 SSA ~ 1.55
 - Risk and emergency management
1 IP ~ 7.0
 - Protection of the workplace
1 CA ~ 0.3





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Response to the Call for Proposals Euratom Call 2005/6 Fixed Call Cut-off date 11/10/2005

Radiation Protection

*(15 proposals received; requested EC grant ~29 M€;
call indicative budget 14€)*

4 Topics to be implemented through three types of instruments:

- IP on - targeted effects of radiation
- STREPs on - cellular & molecular biology research on the effects of low & protracted exposures to radiation
- risk governance & malevolent uses of radiation
- CAs on - nuclear medicine diagnostic techniques
- protection of the environment & radioecology





Radiation Protection in FP6

Area	Project acronym & name & coordinating organisation	Instrument	(M€)
<i>Protection of the environment & radioecology</i>	<ul style="list-style-type: none">• ERICA: Environmental risk from ionising contamination: Assessment and management (<i>SSI, SE</i>)• RECOIL: Recommendations on Protection: Dissemination of international radiation results (<i>ICRP, SE</i>)	STREP	1,5
		SSA	0.053



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ERICA

Specific Targeted Research Project
**Environmental Risk from Ionising
Contaminants: Assessment and Management**
(<http://www.ERICA-project.org>)

➤ **Nature and goals:**

- Provide an *integrated approach* showing how to go from exposure to radioactive substances, to possible effects (**assessment**) on animals, plants & ecosystems, to measuring & estimating risks (**risk characterisation**) and finally to decide what to do (**management**)

➤ **Activities:**

- Provide an *assessment tool* (WP 1)
- Provide *risk characterisation methodologies* for ecological meaningful estimates of risk (WP 2)
- Provide managerial guidance together with stakeholder involvement; *Communication & Decision-making* (WP 3)
- Apply and test in *case study* scenarios for different sites the assessment methodologies (WP 4)





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ERICA

Environmental Risk from Ionising Contaminants: Assessment and Management

(<http://www.ERICA-project.org>)

Anticipated achievements: ERICA integrated approach (D-ERICA) will consist of a practical handbook to assessment, risk characterisation and management, and a user-friendly software tool.

Co-ordinator: Dr Carl-Magnus Larsson, SSI, SE

Partners: 15 organisations from 6 EU Member Countries & NO and the End-User Group (EUG) representing stakeholders and experts outside the consortium from European & other countries

Duration: 36 months (01.03.2004 - 28.2.2007)

Total costs / **EU-Grant:** 3.9M€ / ~1.5M€





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RECOIL

Specific Support Action

Recommendations on Protection: Dissemination of International Radiation Results

(<http://www.icrp.org>)

➤ **Nature and goals:**

- Utilise research results obtained inter alia through the EC FP 5 & 6 in developing practical advice, in the format of radiological protection recommendations.

➤ **Activities:**

- Major method will be to draft reports and to meet for critical discussions on reference fauna & flora in 2005/6
- Results obtained will be disseminated and exploited as ICRP reports on: *Radiation effects on non-human species and protection of the environment* in 2007





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RECOIL

*Recommendations on Protection: Dissemination
of International Radiation Results*

(<http://www.icrp.org>)

➤ **Anticipated achievements:**

Issue a set of fundamental recommendations on radiological protection by providing a set of reference fauna and flora, and defining quantities and units to be used, disseminating research results from FP 5 & 6

- **Co-ordinator:** Dr. Jack Valentin, ICRP, SE

➤ **Partner:** 1 from UK (ICRP)

➤ **Duration:** 24 months (01.03.2005 - 28.02. 2007)

➤ **Total costs / EU-Grant:** 0.053M€ / ~ 0.053M€





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http://europa.eu.int/comm/research/energy/fission_publication.html





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EURATOM FP7 (2007 - 2011)

Nuclear Fission & Radiation Protection

Objectives

- *Establish a sound scientific & technical basis for the safe long-term management of hazardous radioactive waste*
- *Promote safer, more resource-efficient and competitive exploitation of nuclear energy*
- *Ensure a robust and socially acceptable system of protection of man & the environment against the effects of ionising radiation*





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EURATOM FP7

Nuclear Fission & Radiation Protection

Proposed Activities SP

- **Management of Radioactive Waste**
- **Reactor Systems**
- **Radiation Protection**
 - * *Quantification of risks for low & protracted exposures*
 - * *Medical uses of radiation*
 - * *Emergency management & rehabilitation*
 - * *Malevolent uses of radiation or radioactive material*
 - * *Other topics: National research activities in other areas will be more effectively integrated*
- **Infrastructures**
- **Human Resources and Training**





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7th Framework Program *Roadmap*

- **April 6th, 05 :** Commission adoption of FP7 proposal
EC & EURATOM FP (COM (2005) 119 final)
- **September 21, 05:** Commission adoption SP proposal
(COM(2005) 445 final)
- **Mid-Dec. 05:** EP 1st reading EC- , Opinion on EURATOM FP
- **Summer 2006:** Council adoption of
 - *EC + EURATOM FP 7*
 - *EC + EURATOM SP 7*
 - *Rules for participation*
- **Winter 2006:** First call of EURATOM Fission proposal

