

## **Nuclear Fission and Radiation Protection**

FP6 Work Programme

A new way of working

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### **FP6 - a radical departure from the past**

- greater focus
- clearer European added value
- strengthen European competitiveness
- solve major societal problems
- contribute to European Research Area
- but - maintain continuity with past

### **The European Research Area**

- A blueprint for the future of research in Europe
- Broad support at the highest political, scientific and industrial levels
- Being implemented

### **New instruments to achieve goals**

- Integrated Projects
- Networks of Excellence
- Evolved forms of traditional instruments

Provide Consortia with more

- flexibility
- autonomy

### **Steps in the development of the WP**

- Proposal of a FP by the Commission
- Discussion in Council and Parliament
- Council decision on FP
- Process repeated for SP
- WP prepared by the Commission implements the SP

### **FP6 - Two Framework programmes**

EC	16,270 M€
EURATOM	1,230 M€

### **FP6 - Nuclear Energy (1230 M€)**

#### **• Priority Thematic Areas**

Controlled thermonuclear fusion	750 M€
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Management of radioactive waste	90 M€
Radiation protection	50 M€
• <b>Other activities in nuclear safety field</b>	50 M€
Innovative concepts	
Education and training	
Safety of existing installations	
• <b>Joint Research Centre</b>	290 M€

### **Work Programme - Calls for Proposals**

#### **Fixed Deadlines**

6 May 2003	~67 M€
Spring 2004	~55 M€
Spring 2005	~40 M€

- Networks of Excellence
- Integrated projects
- Integrated Infrastructure Initiatives
- Specific Targeted Research Projects
- Co-ordination Actions

#### **Open call**

Two cut-off dates a year  
 (first 6 May 2003, last 11 April 2006)  
 1 - 2 M€/year

- Specific support actions
- Training fellowships
- Special training courses
- Grants for co-operating with third countries
- Trans-national access to large infrastructures

### **Management of radioactive waste**

#### **Geological disposal**

- Improvement of fundamental knowledge, developing and testing technologies
- New and improved tools for performance and safety assessment; public concerns
- **Partitioning and transmutation and other concepts that produce less waste**

#### **Geological disposal**

*First call*

**NoEs**

- Sustainable integration of European research in the geological disposal of radioactive waste
- Sustainable integration of European research on actinides

**IPs**

- Understanding and physical and numerical modelling of the key processes in the near-field, and their coupling, for different host rocks and repository strategies
- Development and testing of disposal technologies in Underground research Laboratories

**STREPs or Co-ordination Actions**

- Improving the governance of geological waste disposal

*Indicative future topics*

- -Radionuclide migration processes
- -Modelling of coupled THMC processes
- -Tools for performance and safety assessment

**Partitioning and transmutation and other concepts to produce less waste in nuclear energy generation**

*First call*

**IP**

- Partitioning of actinides and fission products from high-level nuclear waste for their transmutation or conditioning in stable matrices

**STRP or Co-ordination action**

- Impact of partitioning and transmutation

*Indicative future topics*

- Transmutation
- Other concepts

**Radiation protection**

- **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

### **First call - Low and protracted doses**

#### **IP**

- Cellular and molecular biology research on the effects of low and protracted doses

#### **Indicative future topics**

- Epidemiological studies
- Further cellular and molecular research

### **First call - Medical exposures and natural sources of radiation**

#### **STREP**

- Safety and efficacy of computed tomography (CT)

#### **Co-ordination Action**

- Safety and efficacy of other imaging techniques

#### **Indicative future topics**

- Therapy
- Management of exposures from NORM

### **First call - Protection of the environment and radioecology**

#### **STREP**

- Protection of the environment from radiation

#### **Indicative future topics**

- Networking of research on radioecology

### **First call - Risk and emergency management**

#### **IP**

- Off-site emergency management

#### **Indicative future topics**

- Governance of nuclear risks

### **First call - Protection of the workplace**

## **Not included in the first call**

### **Indicative future topics**

- Networking research on protection of the workplace

### **Other activities in the field of nuclear technology and safety**

#### **•Innovative concepts**

- Evaluation of new concepts for generating fission energy
- Improved and safer processes for the exploitation of nuclear energy

#### **• Education and training**

- Integration and consolidation of national efforts
- Mobility and human resources
- Transnational access to infrastructures

#### **• Safety of existing installations**

- Plant life management (ageing, safety management)
- Fuel performance
- Severe accident management
- Decommissioning
- Harmonised approaches to safety and best practice

### **First call - Innovative concepts**

## **Not included in the first call**

### **Indicative future topics**

- High temperature reactors
- Other innovative concepts
- Other applications, eg hydrogen production

### **First call - Education and training**

#### **STREPs or Co-ordination Actions**

- Education and training in nuclear engineering and safety
- Education and training needs for radiation protection and radioactive waste management
- *Infrastructures for nuclear fission and radiation protection research*

### **Indicative future topics**

- Education and training activities for radiation protection and radioactive waste management

### **First call - Safety of existing installations**

**NoE and/or IP**

Sustainable integration of European research on severe accident phenomenology and management

**IP**

Prediction of irradiation damage effects on reactor components

**STREP or Co-ordination Actions**

Material test reactors for advancing the knowledge of materials, fuel and production of radioisotopes for nuclear medicine

Decommissioning of nuclear installations

**Indicative future topics**

- Numerical codes for coupling thermal hydraulics, core physics and fuel mechanics
- Networking of plant life management, materials ageing and organisational issues
- High burnup and MOX fuel
- Benchmarking approaches to risk assessment
- Knowledge management

**Indicative levels of Community funding  
for Euratom projects**

- **IP and NoE** - about 5 to 10 M€
- **STREP** - from hundreds of k€ to a few M€
- **CA** - tens of k€ to a few hundred k€

Generally, only one project funded for each research topic in WP

**Information material - Call 17 Dec 2002**

- The Euratom FP6 in brief
- Euratom Work programme 2003
- Guide for proposers (per instrument)
- Application forms (per instrument)
- Evaluation guide

**Available on Cordis**

**<http://www.cordis.lu/fp6/euratom>**