

Active Co-ordinated Research Projects at End 2001

A NUCLEAR POWER

Nuclear Power Planning, Implementation and Performance

- I2.10.11** Scientific basis and engineering solutions for cost-effective assessments of software-based I&C systems
2 Contracts 7 Agreements 99/10/1 02/9/30
Argentina(A), China(C), Czech Republic(A), Finland(A), Germany(A), Republic of Korea (A),
Norway(A), Russian Federation(C), United States of America(A)
- I2.10.12** Mechanism of nickel effect in radiation embrittlement of reactor pressure vessel materials
7 Contracts 6 Agreements 99/12/1 02/11/30
Bulgaria(C), Czech Republic(C), France(A), Hungary(A), India(C), Netherlands(A), Russian
Federation(C) (2), Slovakia(C), Ukraine(C), United Kingdom(A), United States of America(A) (2)
- I2.10.13** Surveillance programmes results application to reactor pressure vessel integrity assessment
2 Contracts 21 Agreements 99/11/10 03/11/9
Argentina(A), Brazil(A), Bulgaria(A), Czech Republic(A) (2), Finland(A), Germany(A) (2), Hungary(A),
India(A), Japan(A), Republic of Korea (A), Mexico(C), Netherlands(A), Romania(A), Russian
Federation(A) (2) Russian Federation(C), Slovakia(A), Spain(A), United States of America(A) (3)
- I2.10.14** Verification of WWER steam generator tube integrity
7 Contracts 5 Agreements 01/3/1 04/12/31
Croatia(C), Czech Republic(C), Finland(A), France(A), Hungary(A) Hungary(C), Russian Federation(C)
(2), Slovakia(C), Spain(A), Ukraine(C), United States of America(A)
- I2.10.15** National approaches to correlate nuclear power plant performance targets and O&M costs
8 Contracts 2 Agreements 99/11/15 04/10/31
Argentina(A), Brazil(C), Czech Republic(C), Hungary(C), India(C), Republic of Korea (C), Mexico(C),
Slovakia(C), Ukraine(C), United States of America(A)
- I2.10.16** Evaluation of radiation damage of WWER reactor pressure vessels using the IAEA database on reactor
pressure vessel materials
6 Contracts 01/9/15 05/9/14
Bulgaria(C), Czech Republic(C), Hungary(C), Russian Federation(C), Slovakia(C), Ukraine(C)
- I2.70.01** Information management solutions for SAT applications (SAT-IM)
3 Contracts 6 Agreements 00/6/1 04/5/31
Bulgaria(C), Hungary(A), India(C), Russian Federation(A) Russian Federation(C), Slovakia(A),
Spain(A), Ukraine(A), United States of America(A)

Nuclear Power Reactor Technology Development

- I3.10.12** Evaluation of high temperature gas cooled reactor performance
2 Contracts 8 Agreements 97/11/1 05/2/28
China(C), France(A), Germany(A), Indonesia(C), Japan(A), Netherlands(A), Russian Federation(A),
South Africa(A), Turkey(A), United States of America(A)
- I3.10.13** Conservation and application of HTGR technology: Advances in HTGR fuel technology
5 Agreements 00/11/1 05/10/31
China(A), France(A), Japan(A), Russian Federation(A), United Kingdom(A)
- I3.20.04** Studies of advanced reactor technology options for effective incineration of radioactive waste
4 Contracts 10 Agreements 01/12/15 05/12/31
Belgium(A), China(C), Czech Republic(C), France(A), Germany(A), Hungary(A), India(C), Japan(A),
Republic of Korea (A), Netherlands(A) (2), Poland(A), Russian Federation(C), United States of
America(A)

Appendix A.1

I3.20.05	Updated codes and methods to reduce the calculational uncertainties of the LMFR reactivity effects 3 Contracts China(C), France(A), Germany(A), India(A), Japan(A), Republic of Korea (A), Russian Federation(C) (2), United Kingdom(A), United States of America(A)	7 Agreements	99/10/1	03/9/30
I3.30.10	Intercomparison of techniques for pressure tube inspection and diagnostics 7 Contracts Argentina(C), Canada(A), China(C), India(C), Republic of Korea (C) (2), Romania(C) (2)	1 Agreement	98/12/15	03/12/14
I3.30.11	Establishment of a thermophysical properties data base for LWRs and HWRs 7 Contracts Canada(A), China(C), Czech Republic(C), France(A), India(C), Republic of Korea (C) (2), Russian Federation(C) (2)	2 Agreements	98/10/22	02/4/21
I3.50.01	Optimization of the coupling of nuclear reactors and desalination systems 9 Contracts Argentina(C), China(C), Egypt(C), India(C), Indonesia(C), Republic of Korea (C), Libyan Arab Jamahiriya(C), Morocco(A), Russian Federation(C), Tunisia(C)	1 Agreement	98/5/15	03/5/14
I3.50.02	Economic research on, and assessment of, selected nuclear desalination projects and case studies 8 Contracts Algeria(C), Argentina(C), China(C), France(A), India(C), Libyan Arab Jamahiriya(C), Pakistan(C), Russian Federation(C), Syrian Arab Republic(C), United States of America(A)	2 Agreements	01/12/15	06/12/31

B NUCLEAR FUEL CYCLE AND WASTE MANAGEMENT TECHNOLOGY

Fuel Cycle and Materials

T1.20.13	Hydrogen and hydride induced degradation of the mechanical and physical properties of zirconium based alloys 4 Contracts Argentina(A), Canada(A), China(C), India(A), Republic of Korea (A), Lithuania(C), Pakistan(C), Romania(C), Russian Federation(A), Sweden(A)	6 Agreements	98/11/1	02/10/31
T1.20.14	Data processing technologies and diagnostics for water chemistry and corrosion control in nuclear power plants (DAWAC) 4 Contracts Bulgaria(A), Canada(A), China(A), Czech Republic(C), Finland(A), France(A), Germany(A), Hungary(A), India(A), Japan(A), Romania(C), Russian Federation(C), Slovakia(C), Sweden(A), Ukraine(A), United Kingdom(A), United States of America(A) (2)	14 Agreements	01/3/1	06/3/31
T1.30.07	Spent fuel performance assessment and research (SPAR) 10 Agreements Canada(A) (2), France(A), Germany(A), Japan(A), Korea, Republic Of(A), Russian Federation(A), Spain(A), United Kingdom(A), United States of America(A)		97/7/1	02/6/30
T1.30.08	Ageing of materials in spent fuel storage facilities 3 Contracts Argentina(C), Australia(A), Germany(A), Kazakhstan(C), Romania(C), Russian Federation(A), United Kingdom(A), United States Of America(A)	5 Agreements	99/10/1	03/9/30
T1.30.09	Nuclear fuel cycle aspects of the disposition of depleted uranium (DU) 2 Contracts France(A), India(C), Japan(A), Russian Federation(C), United States of America(A)	3 Agreements	01/11/15	05/11/14

Waste Management and Technology

T2.10.20	Anthropogenic analogues for geological disposal of high-level and long lived radioactive waste 6 Contracts Argentina(C), China(C) (2), Czech Republic(C), Egypt(C), Republic of Korea (A), Ukraine(C), United States of America(A)	2 Agreements	99/7/15	03/7/14
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Appendix A.2

T2.10.21 Chemical durability and performance assessment of spent fuel and high level waste forms under simulated repository conditions
 4 Contracts 11 Agreements 98/12/15 04/2/28
 Argentina(A), Australia(A), Belgium(A), China(C), Croatia(C), Czech Republic(A), France(A), India(A), Japan(A), Republic of Korea (C), Russian Federation(A)Russian Federation(C), Spain(A) (2), United Kingdom(A)

T2.30.14 Technologies and methods for long term stabilization and isolation of uranium mill tailings
 4 Contracts 10 Agreements 00/2/15 04/2/14
 Brazil(A), Canada(A), China(C), Czech Republic(A), France(A), Germany(A), Kazakhstan(C), Republic of Korea (A), Poland(A) (2), Russian Federation(C), Slovenia(A), Ukraine(C), United States of America(A)

C COMPARATIVE ASSESSMENT FOR SUSTAINABLE ENERGY DEVELOPMENT

Energy Modelling, Databanks and Capacity Building

I1.10.02 The impact of infrastructural requirements on the competitiveness of nuclear power
 6 Contracts 1 Agreement 99/10/1 03/9/30
 Bulgaria(C), China(C), India(C), Kazakhstan(C), Pakistan(C), Russian Federation(C), Turkey(A)

D FOOD AND AGRICULTURE

Soil and Water Management and Crop Nutrition

D1.20.06 Management of nutrients and water in rainfed arid and semi-arid areas for increasing crop production
 11 Contracts 5 Agreements 97/12/15 02/8/31
 Argentina(C), Australia(A), China(C), France(A), India(A)India(C) (2), Jordan(C), Kenya(A)Kenya(C), Morocco(C), Niger(C), Pakistan(C), Senegal(C), Syrian Arab Republic(A), Zimbabwe(C)

D1.20.07 Use of nuclear techniques for developing integrated nutrient and water management practices for agroforestry systems
 9 Contracts 5 Agreements 98/12/1 05/11/30
 Australia(A) (2), Benin(C), Chile(C), China(C), Costa Rica(C), France(A), Kenya(A)Kenya(C), Malaysia(C), Nigeria(A), Sri Lanka(C), Uganda(C), Zambia(C)

D1.50.06 Development of management practices for sustainable crop production systems on tropical acid soils through the use of nuclear and related techniques
 9 Contracts 5 Agreements 99/10/15 04/10/14
 Australia(C), Benin(C), Brazil(C) (2), Burkina Faso(C), Colombia(A), Cuba(C), Germany(A), Kenya(A), Mexico(C), Nigeria(A)Nigeria(C), United States of America(A), Venezuela(C)

D1.50.07 Integrated soil, water and nutrient management for sustainable rice-wheat cropping systems in Asia
 7 Contracts 3 Agreements 01/10/1 06/9/30
 Australia(A), Bangladesh(C), China(C) (2), India(A)India(C) (2), Nepal(C), Pakistan(C), Philippines(A)

Plant Breeding Genetics

D2.30.20 Genetic improvement of underutilized and neglected crops in low income food deficit countries (LIFDCs) through irradiation and related techniques
 12 Contracts 4 Agreements 98/12/1 03/11/30
 Bolivia(C), Costa Rica(C) (2), Ecuador(C), France(A) (2), Germany(A), Ghana(C) (2), India(C) (2), Indonesia(C), Slovakia(C), South Africa(C), Syrian Arab Republic (A), Thailand(C).

D2.30.21 Molecular characterization of mutated genes controlling important traits for seed crop improvement
 13 Contracts 6 Agreements 99/7/7 04/7/6
 Brazil(C) (2), Bulgaria(C), Canada(A), China(C) (3), India(A)India(C), Republic of Korea (C) (2), Philippines(C), Poland(C), Portugal(C), Turkey(C), United Kingdom(A) (2), United States of America (A)(2)

Appendix A.3

D2.30.22 Mutritional analysis of root characters in annual food plants related to plant performance
 12 Contracts 4 Agreements 00/8/1 05/7/31
 Argentina(C), Australia(A)(2), Belgium(A), Brazil(C)(2), China(C)(2), Cuba(C), Germany(A),India(C), Israel(A), Mexico(C), Poland(C), South Africa(C), Switzerland(A), Turkey(C), United Kingdom(A), United Republic of Tanzania(C), United States of America(A).

D2.30.23 Improvement of tropical and subtropical fruit trees through induced mutations and biotechnology
 12 Contracts 4 Agreements 00/8/1 05/7/31
 Australia(A), China(C), Cuba(C), India(C) (2), Indonesia(C), Islamic Republic of Iran(C), Israel(A), Malaysia(C) (2), Pakistan(C), Philippines(C), South Africa(C), Thailand(C), United Kingdom(A), United States of America(A)

Animal Production and Health

D3.10.21 Use of nuclear and colorimetric techniques for measuring microbial protein supply from local feed resources in ruminant animals
 10 Contracts 6 Agreements 96/4/15 02/5/31
 Australia(A), Chile(C), China(A)China(C), Indonesia(C), Italy(A)Italy(C), Malaysia(C), Morocco(C), Spain(A), Sri Lanka(A)Sri Lanka(C), Turkey(C), United Kingdom(A), Viet Nam(C), Zimbabwe(C)

D3.10.22 Use of nuclear and related techniques to develop simple tannin assays for predicting and improving the safety and efficiency of feeding ruminants on tanniniferous tree foliage
 8 Contracts 3 Agreements 98/7/1 04/6/30
 Australia(A), Bangladesh(C), Brazil(C), Canada(A), Germany(C), Indonesia(C), Sri Lanka(C), Tunisia(C), Turkey(C), United Kingdom(A), United States of America(C)

D3.10.23 Integrated approach for improving small scale market oriented dairy systems
 11 Contracts 4 Agreements 01/11/1 06/12/31
 Bangladesh(C), Cameroon(C), Malaysia(A), Pakistan(C), Paraguay(C), Peru(C) (2), South Africa(C), Sri Lanka(C), Tunisia(C), United Kingdom(A), United Republic of Tanzania(C), United States of America(A), Uruguay(A), Venezuela(C)

D3.20.17 To develop and validate standardised methods for using polymerase chain reaction (PCR) and related molecular technologies for rapid and improved animal disease diagnosis
 8 Contracts 4 Agreements 97/1/1 02/12/31
 Cameroon(C), Cote d'Ivoire(C), Ethiopia(C), France(A), Kenya(C), Republic of Korea (C), Mali(C), Pakistan(C), South Africa(A), Sweden(A), United Kingdom(A), United Republic of Tanzania(C)

D3.20.18 The monitoring of contagious bovine pleuropneumonia in Africa using enzyme immunoassays
 12 Contracts 3 Agreements 97/11/15 03/3/31
 Botswana(C), Cote d'Ivoire(C), Ethiopia(C), France(A), Ghana(C), Kenya(C), Mali(C), Namibia(C), Nigeria(C), Sweden(A), Uganda(C), United Kingdom(A)United Kingdom(C), United Republic of Tanzania(C), Zambia(C)

D3.20.19 Assessment of the effectiveness of vaccination strategies against Newcastle Disease and Gumboro Disease using immunoassay-based technologies for increasing farmyard poultry production in Africa
 13 Contracts 5 Agreements 98/4/1 04/3/31
 Cameroon(C), Cote D'ivoire(C), Denmark(A), Egypt(C), Ghana(C), Kenya(C), Madagascar(C), Mauritius(C), Morocco(A)Morocco(C), Netherlands(C), Nigeria(A), Sudan(C), Uganda(C), United Republic of Tanzania(A)United Republic of Tanzania(C), United States of America(A), Zimbabwe(C)

D3.20.20 The use of non-structural protein of foot-and-mouth disease virus (FMDV) to differentiate between vaccinated and infected animals
 15 Contracts 5 Agreements 99/1/15 04/1/14
 Argentina(C) (2), Australia(C), Austria(C), Brazil(A)Brazil(C), China(C) (2), Colombia(C), Denmark(A), Italy(A), Lao PDR(C), Malaysia(C), Myanmar(C), Peru(C), Philippines(C), South Africa(C), Thailand(C), United Kingdom(A), United States of America(A)

Appendix A.4

D3.20.21 Developing, validating and standardising methodologies for the use of PCR and PCR-ELISA in the diagnosis and monitoring of control and eradication programmes for trypanosomosis
 11 Contracts 5 Agreements 00/11/15 05/11/14
 Belgium(A), Bolivia(C), Brazil(C), Burkina Faso(C), Chile(C), China(C), Cote d'Ivoire(C), Germany(A), Kenya(C), Netherlands(A) (2), South Africa(C), Thailand(C), Uganda(C), United Kingdom(A), Viet Nam(C)

Insect and Pest Control

D4.10.12 Enhancement of the SIT through genetic transformation of arthropods using nuclear techniques
 2 Contracts 8 Agreements 94/12/15 02/12/31
 Australia(A), Greece(C), Italy(A) (3), New Zealand(C), United Kingdom(A), United States of America(A) (3)

D4.10.16 Quality assurance of mass produced and released fruit flies for SIT programmes
 13 Contracts 5 Agreements 99/10/1 04/9/30
 Argentina(C) (2), Australia(A), Chile(C), Costa Rica(C), France(A), Guatemala(C), Israel(C) (2), Japan(A), Lebanon(C), Mexico(C) (2), Peru(C), Philippines(C), Portugal(C), South Africa(A), United States of America(A)

D4.10.17 Development of improved attractants and their integration into fruit fly SIT management programmes
 14 Contracts 4 Agreements 00/4/1 05/3/31
 Argentina(C), Brazil(C) (2), Colombia(C), Costa Rica(C), France(A), Greece(C), Honduras(C), Israel(C), Mauritius(C), Mexico(C), Pakistan(C), Portugal(A), Spain(A)Spain(C), United Kingdom(A), United States of America(C) (2)

D4.20.05 Genetics application to improve the SIT for tsetse control/eradication
 3 Contracts 6 Agreements 97/1/1 03/1/30
 Belgium(A), Canada(A), Cote d'Ivoire(C), Greece(C), Italy(A), Kenya(C), United States of America(A)(3)

D4.20.08 Improved attractants for enhancing the efficiency of tsetse fly suppression operations and barrier systems used in tsetse control/eradication campaigns
 6 Contracts 2 Agreements 94/12/15 02/3/31
 Burkina Faso(C), Hungary(C), Kenya(C), Mali(C), Switzerland(A), Uganda(C), United Republic of Tanzania(C), United States of America(A)

D4.20.09 Enabling technologies for the expansion of SIT for old and new world screwworm
 6 Contracts 4 Agreements 01/8/1 05/7/31
 Brazil(C), Indonesia(C), Iran, Islamic Republic Of(C), Sweden(A), United Kingdom(A)United Kingdom(C), United States of America(A) (2), Uruguay(C), Venezuela(C)

D4.30.02 Evaluating the use of nuclear techniques for the colonization and production of natural enemies of agricultural insect pests
 15 Contracts 3 Agreements 99/8/1 04/7/31
 Argentina(C), Austria(A) (2), Bangladesh(C), Bulgaria(C), China(C), Guatemala(C), India(C), Indonesia(C), Mexico(C), Pakistan(C), Poland(C), Slovakia(C), Syrian Arab Republic(C), Turkey(C) (2), United States of America(A)United States of America(C)

Food and Environmental Protection

D5.20.34 Alternative methods to gas and high performance liquid chromatography for pesticide residue analysis in grain
 10 Contracts 97/12/1 02/10/31
 Argentina(C), Bangladesh(C), China(C), Croatia(C), Hungary(C), India(C), Pakistan(C), Panama(C), Philippines(C), Turkey(C)

Appendix A.5

- D5.40.03** Quality control of pesticide products
15 Contracts 3 Agreements 00/12/1 05/11/30
China(C) (2), Cuba(C), Greece(A), Hungary(C) (2), India(C) (2), Republic of Korea (C), Myanmar(C), Nigeria(C), Philippines(C), Thailand(C), Turkey(C), United States of America(A) (2), Uruguay(C), Viet Nam(C)
- D5.50.01** The classification of soil systems on the basis of transfer factors of radionuclides from soil to reference plants
11 Contracts 3 Agreements 98/11/1 03/12/31
Australia(A), Brazil(C), Bulgaria(C), Chile(C), China(C), Greece(C), India(C), Japan(A), Russian Federation(C), Syrian Arab Republic(C), Turkey(C), Ukraine(C), United States of America(A), Viet Nam(C)
- D6.10.19** Determination of profiles of human bacterial pathogens in foods for export by introduction of quality-assured microbiological assays
10 Contracts 2 Agreements 97/12/15 02/11/30
Australia(A), Austria(A), Brazil(C), Chile(C), India(C), Indonesia(C), Republic of Korea (C), Mexico(C), Nigeria(C), Paraguay(C), Philippines(C), Thailand(C)
- D6.10.20** Irradiation as a phytosanitary treatment of food and agricultural commodities
11 Contracts 4 Agreements 98/12/1 02/12/31
Australia(A), Brazil(C), Chile(C), China(C) (2), Islamic Republic of Iran(C), Japan(A), Malaysia(C), Philippines(C), Poland(C), Syrian Arab Republic(C), Thailand(C), Turkey(C), United States of America(A) (2)
- D6.10.21** Evaluation of methods of analysis for determining mycotoxin contamination of food and feed
15 Contracts 4 Agreements 98/11/1 03/10/31
Argentina(C), Australia(C), Brazil(C), Canada(A)Canada(C), China(C), Cuba(C), Egypt(C), Ghana(C), India(C), Indonesia(C), Italy(A), Malaysia(C), Philippines(C), South Africa(C), United Kingdom(A)United Kingdom(C), United States of America(A), Uruguay(C)
- D6.10.22** Use of irradiation to ensure hygienic quality of fresh, pre-cut fruits and vegetables and other minimally processed food of plant origin
12 Contracts 3 Agreements 01/4/1 05/3/31
Argentina(C), Brazil(C), Canada(A), Chile(C), China(C), Egypt(C), Hungary(C), India(C), Korea, Republic Of(C), Malaysia(C), Pakistan(C), Portugal(C), Turkey(C), United Kingdom(A), United States of America(A)

E HUMAN HEALTH

Nuclear Medicine

- E1.10.13** Development and validation of an Internet based clinical and technical study communication system for nuclear medicine
9 Contracts 1 Agreement 98/12/15 02/12/14
Argentina(C), China(C) (2), Greece(C), India(C) (2), Thailand(C), United Kingdom(C) (2), United States of America(A)
- E1.10.14** To compare clinical application software between nuclear medicine laboratories by software phantoms developed by the Agency and COST B2 project.
8 Contracts 2 Agreements 99/12/15 03/12/14
Argentina(C), Austria(A), Chile(C), China(C), Cuba(C), Hungary(C), India(C), South Africa(C), Thailand(C), United Kingdom(A)
- E1.20.16** Radioimmunoassay of advanced glycation end products (AGEs) in the long term management of diabetes mellitus
5 Contracts 2 Agreements 00/9/1 04/8/31
China(C), Greece(C), India(C), Mexico(C), Thailand(C), United Kingdom(A), United States of America(A)

Appendix A.6

E1.30.18	Study of the relationship between recurrent lower respiratory tract infection, gastroesophageal reflux and bronchial asthma in children 9 Contracts Chile(C), China(C), Colombia(C), India(A), Pakistan(C), Philippines(C), Poland(C), South Africa(C), Thailand(C), Turkey(C)	1 Agreement	99/12/15 02/12/14
E1.30.19	Thematic CRP on Management of liver cancer using radionuclide methods with special emphasis on trans-arterial radioconjugate therapy and internal dosimetry 10 Contracts Australasia(A), Austria(A), China(C), Colombia(C), France(A), India(A)India(C), Republic of Korea (C) (2), Mongolia(C), Philippines(C), Singapore(C), Slovenia(A), Thailand(C), United Kingdom(A), United States of America(A) (2), Viet Nam(C)	8 Agreements	00/9/1 05/8/31
E1.30.20	Intravascular radionuclide therapy (IVRNT) using liquid beta-emitting radiopharmaceuticals to prevent restenosis following percutaneous transluminal coronary angioplasty 13 Contracts China(C), Colombia(C), Cuba(C), Cyprus(C), Germany(A), Hungary(C), India(C), Iran, Islamic Republic Of(C), Republic of Korea (A) Republic of Korea (C), Poland(C), Singapore(C), Thailand(C), Turkey(C), United States of America(A) (2), Uruguay(C)	4 Agreements	00/11/15 03/11/14
E1.30.21	Comparative evaluation of ictal brain SPECT, magnetic resonance imaging (MRI) and X-ray computerized tomography (CT) of brain in the management of patients with refractory seizures 9 Contracts Argentina(C), Belgium(A), China(C) (2), Colombia(C), India(C), Italy(A), Republic of Korea (A) Republic of Korea (C), South Africa(C), Thailand(C), Turkey(C)	3 Agreements	00/12/1 03/12/31
E1.30.22	Harmonization of radionuclide procedures and protocols in the management of neonatal hydronephrosis 10 Contracts Algeria(C), Chile(A)Chile(C), China(C), Colombia(C), Cuba(C), Estonia(C), India(C), Islamic Republic of Iran(A), Pakistan(C), Peru(C), Slovakia(C), Spain(A)	3 Agreements	01/8/1 04/7/31
E1.30.23	Radionuclide imaging to predict and evaluate the response of breast cancer to neoadjuvant chemotherapy 11 Contracts Argentina(C), Chile(C), China(C), Colombia(C), Croatia(C), Cuba(C), India(C), Italy(A), Republic of Korea (C), Poland(C), Singapore(C), Thailand(C)	1 Agreement	01/8/1 04/7/31
E1.50.15	Molecular typing of mycobacteria strains in multi-drug resistant tuberculosis 8 Contracts Brazil(C), India(C) (2), Republic of Korea (C), Malaysia(C), Morocco(C), Netherlands(A), Russian Federation(C), South Africa(C)	1 Agreement	97/12/1 02/11/30
E1.50.16	Genotype/phenotype correlation in thalassemia and muscular dystrophy 10 Contracts Australia(A), Brazil(C), Cyprus(C), India(C), Mauritius(C), Pakistan(C), South Africa(C), Thailand(C), Tunisia(C), Turkey(C), United Kingdom(C)	1 Agreement	98/11/1 02/11/30
E1.50.17	Development of an improved serological kit for Chagas diagnosis using radionuclide methods 10 Contracts Argentina(C) (2), Bolivia(C), Brazil(C) (3), Honduras(C), Mexico(C), Panama(C), Venezuela(C)		99/3/1 02/11/30
E1.50.18	The significance of viral load and virus type in Hepatitis B and C for Pathogenesis and treatment efficacy 7 Contracts Argentina(C), China(C), India(C), Republic of Korea (C), Malaysia(C), Russian Federation(C), United Kingdom(A), Uruguay(C)	1 Agreement	99/10/1 02/9/30

Appendix A.7

Applied Radiation Biology and Radiotherapy

E3.30.12	Clinical application of radiosensitizers in cancer radiotherapy 5 Contracts India(C), Japan(A) (2), Pakistan(C), Sri Lanka(C), Turkey(C), United Kingdom(C)	2 Agreements	94/9/15	02/12/31
E3.30.13	Randomised clinical trial of radiotherapy combined with Mitomycin C in the treatment of advanced head and neck tumours 10 Contracts Bulgaria(C), Denmark(C) (2), India(C) (2), Italy(A), Malaysia(C), Pakistan(C) (2), Sri Lanka(C), Turkey(C), United States of America(A)	2 Agreements	95/4/15	03/4/30
E3.30.17	Regional hyperthermia combined with radiotherapy for locally advanced cancers 5 Contracts China(C) (2), India(C), Japan(A) (2), Republic of Korea (C) (2), United States of America(A)	3 Agreements	97/12/15	02/12/14
E3.30.18	Aspects of radiobiology applicable in clinical radiotherapy - Increase of the number of fractions per week 8 Contracts Chile(C), Denmark(A) (2), Estonia(C), India(C) (2), Lebanon(C), Pakistan(C) (2), Saudi Arabia(C)	2 Agreements	98/9/15	06/3/31
E3.50.07	Comparative assessment of teletherapy modalities 11 Contracts Brazil(C), China(C), Croatia(C), Cuba(C), Greece(C), India(C), Indonesia(C), Netherlands(C), Pakistan(C), Peru(C), South Africa(C)		01/8/1	03/7/31

Dosimetry and Medical Radiation Physics

E2.10.03	Dosimetry in X-ray diagnostic radiology. An international Code of Practice 5 Agreements Germany(A), Malaysia(A), Sweden(A), United Kingdom(A), United States of America(A)		00/12/1	05/11/30
E2.10.04	Development of techniques at SSDs for the dissemination of absorbed dose to water standards 4 Contracts Algeria(C), Argentina(C), France(A), India(C), Norway(A), Thailand(C)	2 Agreements	01/4/1	04/3/31
E2.40.09	Development of a Code of Practice for dose determination in photon, electron and proton beams based on measurement standards of absorbed dose to water 3 Contracts Brazil(C), France(A), Germany(A), India(C), Slovenia(C), United States of America(A)	3 Agreements	97/9/1	02/11/30
E2.40.12	Development of TLD-based quality audits for radiotherapy dosimetry in non-reference conditions 6 Contracts Algeria(C), Argentina(C), Bulgaria(C), China(C), Cuba(C), Poland(C)		01/12/15	06/12/31

Nutritional and Health-related Environmental Studies

E4.10.11	Validation and application of plants as biomonitors of trace element atmospheric pollution, analyzed by nuclear and related techniques 9 Contracts Argentina(C), Brazil(A), Chile(A), China(C), Germany(A), Ghana(C), India(C), Israel(C), Jamaica(C), Netherlands(A), Norway(A), Portugal(C), Romania(C), Russian Federation(C)	5 Agreements	97/12/15	02/12/31
E4.10.12	Health impacts of mercury cycling in contaminated environments studied by nuclear techniques 7 Contracts Brazil(C), Canada(A), China(C), Germany(A), India(C), Japan(A), Philippines(C), Slovenia(C), Sweden(A), United Republic of Tanzania(C), Venezuela(C)	4 Agreements	99/9/1	04/8/31

Appendix A.8

E4.10.13	Use of nuclear and related analytical techniques in studying human exposure to toxic elements consumed through foodstuffs contaminated by industrial activities 11 Contracts Brazil(C), China(C), Czech Republic(C), Ghana(C), India(C), Nigeria(C), Peru(C), Russian Federation(C), Slovenia(C), South Africa(A), Uzbekistan(C), Viet Nam(C)	1 Agreement 01/12/15 06/12/31
E4.30.10	Isotopic evaluations in infant growth monitoring - a collaboration with WHO (partly RCA) 4 Contracts Bangladesh(C), Brazil(C), Chile(C), Pakistan(C), United Kingdom(A), United States of America(A)	2 Agreements 99/11/1 02/10/31
E4.30.11	Application of nuclear techniques in the prevention of degenerative diseases (obesity and non-insulin dependant diabetes) in ageing 8 Contracts Brazil(C), Chile(C), China(C), Cuba(C), India(C), Jamaica(C), Mexico(C), New Zealand(A), Nigeria(C), United Kingdom(A), United States of America(A)	3 Agreements 98/12/15 02/12/31
E4.30.12	Use of isotopic techniques to examine the significance of infection and other insults in early childhood to diarrhoea morbidity, mal-assimilation and failure to thrive 12 Contracts Argentina(C), Bangladesh(C), Belgium(A), Benin(C), Chile(C), Cuba(C), India(C), Indonesia(C), Mexico(C) (2), Pakistan(C), Senegal(C), United Kingdom(C)	1 Agreement 99/12/15 03/12/14
E4.30.13	Thematic CRP on Isotopic and complementary tools for the study of micronutrient status and interactions in developing country populations exposed to multiple nutritional deficiencies 8 Contracts Bangladesh(C), Brazil(C), Ghana(C), India(C), Indonesia(C), Pakistan(C), Sri Lanka(C), Thailand(C)	01/12/15 07/12/31
E4.30.14	Application of isotopic and nuclear techniques in the study of nutrition-pollution interactions and their impact on the nutritional status of human subjects in developing country populations 7 Contracts Bangladesh(C), Chile(C), China(C), India(C), Kenya(C), Republic of Korea (A), Peru(C), Viet Nam(C)	1 Agreement 01/12/15 05/3/31
G4.10.03	Radiochemical, chemical and physical characterisation of radioactive particles in the environment 4 Contracts Denmark(A), Finland(A), Hungary(C), Kazakhstan(C), Norway(A), Russian Federation(C), Ukraine(C), United States of America(A)	4 Agreements 00/12/1 05/11/30

F MARINE ENVIRONMENT AND WATER RESOURCES

Development and Management of Water Resources

F3.10.02	Isotopic composition of precipitation in the Mediterranean Basin in relation to air circulation patterns and climate 10 Contracts Algeria(C), Austria(A), Croatia(C), Egypt(C), France(A), Greece(C), Israel(A), Italy(A), Lebanon(C), Morocco(C), Portugal(C) (2), Slovenia(C), Spain(A), Turkey(C)	5 Agreements 00/6/15 04/6/14
F3.30.11	Isotope response to dynamic changes in groundwater systems due to long term exploitation 8 Contracts Australia(A), Denmark(A), Germany(A) (2), India(C), Israel(C), Jordan(C), Malaysia(C), Philippines(C), South Africa(C), Switzerland(A), Tunisia(C), Turkey(C), United States of America(A)	6 Agreements 99/6/1 03/5/31
F3.30.12	Origins of salinity and impacts on fresh groundwater resources: Optimization of isotopic techniques 7 Contracts Australia(A), China(C), Israel(C), Italy(A), Jordan(C), Republic of Korea (C), Morocco(C), Pakistan(C), Sweden(A), Tunisia(C), United Kingdom(A), United States of America(A)	5 Agreements 00/8/1 05/7/31
F3.30.13	Application of isotopes to the assessment of pollutant behaviour in the unsaturated zone for groundwater protection 7 Contracts Austria(A), China(C), Germany(C), India(C), Pakistan(C), Slovenia(C), South Africa(C), Syrian Arab Republic(C), United Kingdom(A), United States of America(A)	3 Agreements 00/12/15 03/12/14

Appendix A.9

G APPLICATIONS OF PHYSICAL AND CHEMICAL SCIENCES

Nuclear and Atomic Data for Applications

- F4.10.16** Fission product yield data required for transmutation of minor actinide nuclear waste
4 Contracts 6 Agreements 97/10/1 03/3/31
Belarus(C), China(C), Germany(A), Japan(A), Kazakhstan(C), Netherlands(A), Russian Federation(A), Ukraine(C), United Kingdom(A), United States of America(A)
- F4.10.17** Nuclear model parameter testing for nuclear data evaluation (Reference input parameter library: Phase II)
5 Contracts 6 Agreements 98/7/1 02/6/30
Belgium(A), China(C), Cuba(C), France(A), Hungary(C), India(C), Japan(A), Netherlands(A), Russian Federation(A), Ukraine(C), United States of America(A)
- F4.10.18** Development of a database for prompt gamma-ray neutron activation analysis
4 Contracts 3 Agreements 99/4/1 03/3/31
China(C), Hungary(C), India(C), Republic of Korea (A), United States of America(A) (2), Viet Nam(C)
- F4.20.04** Update of X- and gamma-ray decay data standards for detector calibration
5 Contracts 5 Agreements 98/4/1 02/12/31
Brazil(C), France(A), Germany(A), Hungary(C), Russian Federation(C), Slovakia(C) (2), Spain(A), United Kingdom(A), United States of America(A)
- F4.30.11** Atomic and molecular data for fusion plasma diagnostics
2 Contracts 9 Agreements 01/7/15 04/6/30
Austria(A), Germany(A) (2), Netherlands(A), Russian Federation(C), Spain(A), The Former Yugoslavian Republic of Macedonia(C), United Kingdom(A) (2), United States of America(A) (2)
- F4.30.12** Data for molecular processes in edge plasmas
3 Contracts 8 Agreements 01/8/1 04/7/31
Austria(A), Belgium(A), Czech Republic(C), France(A), Germany(A), Italy(A), Japan(A), Russian Federation(C), Slovakia(C), Sweden(A), United States of America(A)

Nuclear Instrumentation

- F1.10.07** Application of nuclear techniques to anti-personnel landmines identification
7 Contracts 8 Agreements 99/10/1 02/9/30
Australia(A), Canada(A), Croatia(C), Egypt(A), Hungary(C), Italy(A), Netherlands(A), Russian Federation(C), Slovakia(C), Slovenia(C), South Africa(C), Sweden(A), United States of America(A) (2), Viet Nam(C)
- F1.10.08** Development and applications of alpha particle spectrometry
8 Contracts 6 Agreements 00/7/1 03/6/30
Algeria(C), Bulgaria(C), China(C), Cuba(C), Finland(A), India(C), Kazakhstan(C), Republic of Korea(A), Mexico(C), Norway(A), Russian Federation(A), Slovenia(C), Spain(A), Sweden(A)
- F1.10.09** In-situ applications of X-ray fluorescence (XRF) techniques
9 Contracts 3 Agreements 00/7/10 04/7/9
Albania(C), Argentina(C), Belgium(A), China(C), Ghana(C), Hungary(C), Italy(A), Mongolia(C), Pakistan(C), Poland(C), Slovenia(C), United Kingdom(A)
- F1.10.10** Development of distance learning (DL) modules on troubleshooting of nuclear instruments
5 Contracts 1 Agreement 01/11/1 04/12/31
Argentina(C), Brazil(C), Cuba(C), India(C), Israel(A), Viet Nam(C)

Utilization of Research Reactors and Particle Accelerators

- F1.20.13** Development and practical utilization of small angle neutron scattering (SANS) applications
8 Contracts 4 Agreements 00/8/25 03/8/31
Austria(A), Brazil(C), France(A) (2), Germany(A), Greece(C), Hungary(C), India(C), Republic of Korea(C), Portugal(C), Russian Federation(C), South Africa(C)
- F1.20.14** The use of ion beam techniques for analysis of light elements in thin films, including depth profiling
7 Contracts 3 Agreements 00/8/1 03/7/31
Brazil(C), China(C), Croatia(C), Finland(A), France(A), Hungary(C), Mexico(C), New Zealand(A), Portugal(C), Slovenia(C)

Radioisotopes and Radiation Technology

- F2.20.32** Development of kits for Tc99m radiopharmaceuticals for infection imaging
9 Contracts 3 Agreements 00/6/15 03/6/14
Argentina(C), China(C), Hungary(A), India(C), Indonesia(C), Mexico(C), Netherlands(A), Pakistan(C), Poland(C), Thailand(C), United States of America(A), Uruguay(C)
- F2.20.33** Standardized high current solid targets for cyclotron production of diagnostic and therapeutic radionuclides
7 Contracts 4 Agreements 00/10/1 03/9/30
Argentina(C), Belgium(A), China(C), Hungary(A), Indonesia(C), Islamic Republic of Iran(C), Kazakhstan(C), Romania(C), Russian Federation(A), Saudi Arabia(C), United States of America(A)
- F2.20.34** Radiation synthesis of stimuli-responsive membranes, hydrogels and adsorbents for separation purposes
6 Contracts 4 Agreements 00/12/15 04/12/14
Egypt(C), France(A), Germany(A), Hungary(C), India(C), Japan(A), Kazakhstan(C), Republic of Korea(A), Poland(C), Turkey(C)
- F2.20.35** Development of radioimmunoassays and kits for non clinical applications
8 Contracts 4 Agreements 01/8/1 06/7/31
China(C), Cuba(C), Greece(C), Hungary(A), India(A), Indonesia(C), Islamic Republic of Iran(C), Poland(C), Thailand(C), United Kingdom(A), United States of America(A), Uruguay(C)
- F2.30.18** Development and validation of speciation analysis using nuclear techniques
5 Contracts 2 Agreements 01/3/1 04/3/31
Argentina(C), Austria(A), Belgium(A), Brazil(C), China(C), Ghana(C), Slovenia(C)
- F2.30.19** Integration of residence time distribution (RTD) tracing with computational fluid dynamics (CFD) simulation for industrial process visualization and optimization
6 Contracts 5 Agreements 01/3/1 04/3/31
Australia(A), Brazil(C), Cuba(C), Czech Republic(C), France(A), Germany(A), India(C), Republic of Korea(C), Norway(A), Poland(C), United States of America(A)

Nuclear Fusion Research and Plasma Physics Applications

- F1.30.07** Comparison of compact toroid configurations
8 Contracts 10 Agreements 98/11/1 02/12/31
Argentina(C), Brazil(C), China(C), India(C), Israel(C), Italy(A), Japan(A) (5), Russian Federation(C) (2), Ukraine(C), United Kingdom(A), United States of America(A) (3)
- F1.30.08** Elements of power plant design for inertial fusion energy
8 Contracts 9 Agreements 00/12/15 05/12/14
Czech Republic(C), Germany(A), Hungary(C), India(C), Japan(A) (2), Republic of Korea(C), Poland(C), Russian Federation(C) (2), Spain(A), United States of America(A) (5), Uzbekistan(C)

F1.30.09 Dense magnetized plasmas
 5 Contracts 01/12/15 05/12/31
 Czech Republic(C), Poland(C) (2), Russian Federation(C) (2)

H NUCLEAR SAFETY

Safety Assessment Developments

J4.50.02 Development and application of indicators to monitor NPP operational safety performance
 4 Contracts 8 Agreements 99/10/1 03/9/30
 China(A), Czech Republic(C), India(C), Lithuania(A), Netherlands(A), Pakistan(C), Slovakia(A) (2),
 Spain(A), Sweden(A), Ukraine(C), United Kingdom(A)

J4.60.01 Round-robin exercise on WWER (water-cooled and -moderated reactor pressure vessel)-440 RPV weld
 metal irradiation embrittlement and annealing
 5 Contracts 4 Agreements 96/10/1 01/12/31
 Belgium(A), Finland(A), France(A), Hungary(C), Norway(A), Russian Federation(C) (3), Slovakia(C)

Nuclear Plant Engineering Safety

J7.10.08 Safety of RBMK type Nuclear Power Plant in relation to external events
 8 Contracts 5 Agreements 97/12/15 02/12/14
 Bulgaria(C), Finland(A), Germany(A), Italy(A), Russian Federation(C) (6), Ukraine(C), United
 States of America(A) (2)

Research Reactor Safety

J7.10.09 To update and expand the IAEA reliability data for research reactor PSAs
 7 Contracts 4 Agreements 01/3/15 04/3/14
 Argentina(C), Australia(A), Austria(A), Brazil(C), Canada(A), Czech Republic(C), India(C),
 Indonesia(C), Republic of Korea (A), Romania(C), Viet Nam(C)

I RADIATION SAFETY

Radiation Protection

J1.70.04 Image quality and patient dose optimisation in mammography in Eastern European Countries
 8 Contracts 3 Agreements 99/10/1 02/9/30
 Czech Republic(C), France(A)France(C), Hungary(C), Italy(A)Italy(C), Poland(C), Romania(C),
 Slovakia(C), Spain(A)Spain(C)

Safety of Radiation Sources and Security of Radioactive Materials

J1.70.05 To investigate appropriate methods and procedures to apply probabilistic safety assessment (PSA)
 techniques of large radiation sources
 5 Contracts 2 Agreements 00/6/27 03/6/30
 Argentina(C), Canada(A), China(C), Cuba(C), Japan(C), Mexico(C), United States of America(A)

Safe Transport of Radioactive Material

J1.30.08 Development of radiological basis for the transport safety requirements for low specific activity
 materials and surface contaminated objects
 7 Agreements 97/9/1 02/11/30
 Brazil(A), Canada(A), France(A), Germany(A), South Africa(A), United Kingdom(A), United States of
 America(A)

J1.30.09 Accident severity during air transport of radioactive material
8 Agreements 98/6/1 02/8/31
Canada(A) (2), France(A), Germany(A), Ireland(A), Sweden(A), United Kingdom(A), United States of America(A)

J1.30.10 Radiological aspects of package and conveyance non-fixed radioactive contamination
7 Agreements 01/9/1 04/8/31
France(A), Germany(A), Japan(A), Sweden(A), United Kingdom(A) (2), United States of America(A)

J RADIOACTIVE WASTE SAFETY
Safety of Disposable Radioactive Waste

J9.10.05 The use of selected safety indicators (concentrations; fluxes) in the assessment of radioactive waste disposal
1 Contract 9 Agreements 00/2/15 05/2/14
Argentina(A), Brazil(A), China(A), Cuba(A), Czech Republic(A), Finland(A), Japan(A), Sweden(A), United Kingdom(A)United Kingdom(C)