

THE ANNUAL REPORT FOR 2007

Additional Annex Information

Table A24. Coordinated research projects initiated in 2007

Nuclear Power

- Advances in nuclear power process heat applications (2007–2010)
- Heat transfer behaviour and thermohydraulics code testing for supercritical water cooled reactors (2007–2011)

Nuclear Science

- Minor actinide neutron reaction data
- Data for surface composition dynamics relevant to erosion processes (2007–2012)
- Heavy charged-particle interaction data for radiotherapy (2007–2010)
- Improvement of the reliability and accuracy of heavy ion beam nuclear analytical techniques (2007–2011)
- Integrated approach to dense magnetized plasma applications in nuclear fusion technology (2007–2012)

Food and Agriculture

- Managing irrigation water to enhance crop productivity under water-limiting conditions: a role for isotopic techniques (2007–2012)
- Early and sensitive diagnosis and control of peste des petits ruminants (PPR) (2007–2012)
- Improving the sterile insect technique for tsetse flies through research on their symbionts and pathogens (2007–2012)

Human Health

- Biology of male mosquitoes in relation to genetic control programmes (2007–2012)
- Performance of rest myocardial perfusion imaging in the management of acute chest pain in the emergency room (2007–2010)
- Assessment of left ventricular function in coronary artery disease with nuclear techniques (2007–2010)
- Evaluation of the biological safety and clinical efficacy of lutetium-177–ethylenediaminetetramethylene phosphonic acid for bone pain palliation in metastatic prostate cancer (Phase I/II clinical trial) (2007–2010)
- Investigation of optimal radiotherapy regimen and type of irradiation in treatment of painful bone metastasis (2007–2010)
- Radiotherapy and chemotherapy in advanced non-small cell lung cancer (2007–2011)

Water Resources

- Quantification of hydrological fluxes in irrigated lands using isotopes for improved water use efficiency (2007–2011)

Assessment and Management of Marine and Terrestrial Environments

- Applications of radiotracer and radioassay technologies to seafood safety assessment (2007–2011)

Radioisotope Production and Radiation Technology

- Development of technetium-99m radiopharmaceuticals for sentinel node detection and cancer diagnosis (2007–2011)
- Optimization of digital industrial radiography techniques for specific applications and development of procedures and protocols (2007–2011)
- Evaluation and validation of radioisotope generator-based radiotracer for industrial applications (2007–2011)

- Development of radiation processed products of natural polymers for application in agriculture, healthcare, industry and environment (2007–2011)
- Development of novel adsorbents and membranes by radiation induced grafting for selective separation purposes (2007–2011)

Safety of Nuclear Installations

- Modelling and analysis of radionuclides transport and source term evaluation within containment/confinement and release to the environment for research reactors (2007–2010)

Radiation and Transport Safety

- The appropriate level of regulatory control for the safe transport of naturally occurring radioactive material (NORM) (2007–2010)

Management of Radioactive Waste

- Behaviour of cementitious materials in long term storage and disposal of radioactive waste (2007–2010)
- Upgrading of near surface disposal facilities (2007–2012)

Table A25. Coordinated research projects completed in 2007

Nuclear Power

- Evaluation of high temperature gas cooled reactor performance (1997–2007)
- Updated codes and methods to reduce the calculational uncertainties of liquid metal fast reactor reactivity effects (1999–2007)

Nuclear Science

- Dense magnetized plasmas (2001–2007)
- Development of new techniques and applications of accelerator mass spectrometry (2004–2007)

Food and Agriculture

- Development of strategies for the effective monitoring of veterinary drug residues in livestock and livestock products in developing countries (2002–2007)
- Enabling technologies for the expansion of sterile insect technique (SIT) for the Old and New World Screwworm (2001–2007)
- Integrated approach for improving small scale market oriented dairy systems (2001–2007)

Human Health

- Development of procedures for quality assurance for dosimetry calculations in radiotherapy (2004–2007)
- Development of thermoluminescent dosimeter based quality audits for radiotherapy dosimetry in non-reference conditions (2001–2007)
- Improvement in the treatment of acute lymphoblastic leukaemia by the detection of minimal residual disease (2002–2007)
- Role of radionuclide techniques in the diagnosis of early dementia (2003–2007)

Water Resources

- Design criteria for a network to monitor isotope compositions of runoff in large rivers (2002–2007)
- Isotope methods for the study of water and carbon cycle dynamics in the atmosphere and biosphere (2004–2007)

Assessment and Management of Marine and Terrestrial Environments

- Nuclear applications to determine bioaccumulation parameters and processes used for establishing coastal zone monitoring and management criteria (2002–2007)

Radioisotope Production and Radiation Technology

- Industrial process gamma tomography (2003–2007)

Management of Radioactive Waste

- Application of safety assessment methodologies for near surface waste disposal facilities (2002–2007)
- Characterization and performance studies and demonstration in underground research laboratories of swelling clays as engineered barriers of geological repositories (2004–2007)
- New developments and improvements in processing of ‘problematic’ radioactive waste streams (2003–2007)

Table A26. Training courses, seminars and workshops in 2007

Nuclear Power

- Workshop on natural circulation in water-cooled nuclear power plants ICTP Trieste
- Workshop on nuclear power plant simulators for education ICTP Trieste
- Workshop on steps for conducting technology of evolutionary water cooled reactors Headquarters
- Workshop on technology and applications of accelerator driven systems ICTP Trieste

Nuclear Fuel Cycle and Materials Technologies

- Course/workshop on conversion of Slowpoke and miniature neutron source reactors Headquarters

Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development

- Course/workshop on competitiveness of nuclear power and other electricity generation technologies in restructured electricity markets USA
- Course/workshop on designing sustainable energy systems Croatia
- Course/workshop on managing nuclear knowledge Japan
- Course/workshop/school on nuclear knowledge management ICTP, Trieste
- E-training on evaluating external cost of health and environmental impacts of nuclear power and other energy options Republic of Korea
- IAEA/RCA regional course on applications of IAEA analytical tools for evaluation of sustainable energy strategies for addressing climate change issues Republic of Korea
- Regional AFRA course on comparative assessment of energy and electricity supply options South Africa
- Regional AFRA course on energy demand assessment for French speaking countries Tunisia
- Regional AFRA course on energy demand assessment using the IAEA's Model MAED Sudan
- Regional AFRA workshop on energy demand analysis using the IAEA tool MAED Headquarters
- Regional AFRA workshop on energy statistics and energy indicators for sustainable development in SADC countries Mauritius
- Regional course on energy demand assessment using the IAEA's Model MAED Headquarters; Venezuela
- Regional course on harmonization of national data inputs to MESSAGE for regional scale energy modelling and grid interconnection analyses United Arab Emirates
- Regional course on incorporating environmental aspects into energy and electricity scenarios using the IAEA's energy model MESSAGE Yemen

- Regional course on translating energy data and analysis into strategies for sustainable energy development United Republic of Tanzania

Nuclear Science

- Course/workshop on conversion of slowpoke and miniature neutron source reactors Headquarters
- IAEA/RCA regional course on advanced neutron beam technology and applications Republic of Korea,
- IAEA/RCA regional course on harmonization of data and source components Philippines
- IAEA/RCA regional course on neutron irradiation technology Indonesia
- IAEA–ICTP workshop on nuclear data: Medical applications ICTP, Trieste
- Regional (AFRA) course for developers of information and communication technology materials Egypt
- Regional (AFRA) course for staff from stakeholders on basic QA/QC and interpretation of data Algeria
- Regional (AFRA) course on data quality control, validation and evaluation in air pollution studies Ghana
- Regional (AFRA) course on EDXRF methodology applied to air samples and QC/QA Kenya
- Regional (AFRA) course on operating systems UNIX, WinNT, Networking and PACS applied to nuclear medicine Sudan
- Regional course on evaluation and interpretation of data for particulate air pollution Mexico
- Regional course on field programmable gate array applications for nuclear instruments Mexico
- Regional course on field programmable gate array applications Jordan
- Regional course on QC test procedures in nuclear instrument maintenance and refurbishment Indonesia
- Regional course on the use of gamma rays for the preservation of cultural heritage and the disinfection of art objects France
- Training meeting on water quality management for research reactors and research reactor spent fuel storage facilities Slovenia
- Workshop on strategic planning for sustainability: Mediterranean region Headquarters

Food and Agriculture

- Course/workshop on the introduction to screening and confirmatory methodology for veterinary drug residues Agency's Laboratories, Seibersdorf
- Course/workshop on the use of irradiation as a phytosanitary treatment Mexico
- FAO/IAEA interregional course on the use of nuclear and related techniques to measure storage, flows and balance of water in cropping systems Agency's Laboratories, Seibersdorf
- IAEA/RCA Regional course on electron beam application on fruits and frozen foods Vietnam

- Interregional course on mutant germplasm characterization using molecular markers Agency's Laboratories, Seibersdorf
- Regional (AFRA) course on advanced plant tissue culture and double haploid techniques Ghana
- Regional (AFRA) course on interaction between reproduction and nutrition Egypt
- Regional (AFRA) course on mutation breeding for market oriented traits in African crops Ethiopia
- Regional (AFRA) course on participatory approaches Sudan
- Regional course on diagnosis and control of animal Fascioliasis in the Latin American region with national components Peru
- Regional course on GxE testing, seed storage and farmer participation Jordan
- Regional course on induced mutations and related biotechnologies in cereal breeding Turkey
- Regional course on pesticide risk assessment, sampling and analytical methodology for pesticides in water Headquarters
- Regional course on rapid diagnosis of avian influenza (bird flu) Egypt
- Regional course on standardized collection and processing of tsetse flies for molecular tsetse population genetic and morphometric analyses Uganda
- Regional workshop on pesticide residue analysis in food stuffs Burkina Faso

Human Health

- ESTRO–IAEA course on 3D planning and imaging Russian Federation
- ESTRO–IAEA course on dose calculation and verification for external beam therapy Hungary
- ESTRO–IAEA course on evidence-based radiation oncology: Methodological basis and clinical application Greece
- ESTRO–IAEA course on radiotherapy treatment planning: Principles and practice Ireland
- European Association of Nuclear Medicine–IAEA learning course on PET/CT in oncology Headquarters
- European Association of Nuclear Medicine–IAEA technologists learning course on PET/CT Headquarters
- European School of Medical Physics–IAEA course on medical imaging with ionizing radiation France
- IAEA Nobel Peace Prize Fund Schools for Nutrition regional event in Asia and the Pacific: Focus on interventions to combat undernutrition during early life Bangladesh
- Regional (AFRA) course for DAT programme coordinators Algeria
- Regional (AFRA) course on applications of nuclear medicine techniques in paediatrics South Africa
- Regional (AFRA) course on dosimetry, QA/QC, patient and personnel safety in brachytherapy South Africa
- Regional (AFRA) course on evidence based oncology Cameroon

- Regional (AFRA) course on head and neck cancer Morocco
- Regional (AFRA) course on paediatric cancer Madagascar
- Regional (AFRA) course on performing an acceptance test of a dual head gamma camera Agency's Laboratories, Seibersdorf
- Regional (AFRA) course on radiochemotherapy in solid tumours United Republic of Tanzania
- Regional (AFRA) workshop on commissioning of linear accelerators Algeria
- Regional (AFRA) workshop on medical internal dosimetry relevant to nuclear medicine Tunisia
- Regional (RCA) course for radiotherapy technologists based on the IAEA syllabus India
- Regional (RCA) course on 3D conformal radiotherapy and QA (imaging and treatment planning) - for radiation oncologists Japan
- Regional (RCA) course on optimal management of locally advanced cervical cancer Japan
- Regional (RCA) course on positron emission tomography (PET) applications in clinical management of patients Thailand
- Regional (RCA) course on the implementation of the international code of practice for radiotherapy dosimetry, IAEA-TRS-398 Singapore
- Regional course for Africa on quality assurance of physical and technical aspects in radiotherapy United States of America
- Regional course for the IAEA TRS-430 implementation: quality assurance in treatment planning systems Colombia
- Regional course on anthropometry and stable isotope preparation and administration for body composition assessment Japan
- Regional course on body composition under epidemiological conditions: Measurement of total body water by the deuterium dilution technique and bioimpedance analysis Chile
- Regional course on data analysis on prediction of body composition, physical activity and energy expenditure Guatemala
- Regional course on distance assisted training (DAT) programme for nuclear medicine technologists Uruguay
- Regional course on distance assisted training for nuclear medicine technologist coordinators (DAT programme) Headquarters
- Regional course on efficacy of iron intervention programme Costa Rica
- Regional course on implementation of IAEA TRS-430 in Quality Assurance for Radiotherapy Treatment Planning Systems Poland
- Regional course on physics for clinical radiotherapy Uruguay
- Regional course on QA/QC of nuclear medicine instrumentation Slovenia
- Regional course on stable isotope preparation and administration for body composition assessment Jamaica

Water Resources

- Regional course on application of isotope techniques in hydrology Montenegro

- Regional course on shared aquifer diagnostic analysis Sudan
- Regional course on the use of isotope and geochemical techniques in the study of artificial recharge: Modelling and interpretation methods Jordan
- Technical coordination workshop of counterparts of national technical cooperation projects on water resources Headquarters

Assessment and Management of Marine and Terrestrial Environments

- Regional (AFRA) course on monitoring programmes and demonstration of approaches to sampling protocols and receptor-based toxin testing for phytoplankton and shellfish South Africa
- Regional advanced course on sampling, sample preparation and analysis for the measurement of radionuclides in the marine environment. IAEA-MEL, Monaco
- Regional course on analytical methods and quality management in marine environmental radioactivity studies Germany
- Regional course on the use of nuclear techniques to address the management problems of coastal zones in the Caribbean region Cuba
- Regional course on the use of tracer techniques for water quality monitoring Venezuela
- Regional distance course (virtual course) on chemometry (qualitative and quantitative analysis) Argentina
- Virtual regional course on modelling the dispersion of pollutants on soil, water and air

Radioisotope Production and Radiation Technology

- IAEA–RCA regional course on applications of nanotechnology Pakistan
- IAEA–RCA regional course on in situ analysis of coal quality Bangladesh
- IAEA–RCA regional course on radiation processing for basic and medium level personnel Malaysia
- IAEA–RCA regional course on the promotion of radiation technology utilization Philippines
- Regional (AFRA) course and opportunity to re-sit NDT level 3 examinations Tunisia; South Africa
- Regional (AFRA) course for sealed source application in the refining and petrochemical industries South Africa
- Regional (AFRA) course on applications of nucleonic control systems in industry Morocco
- Regional (AFRA) course on integrated quality management systems South Africa
- Regional (AFRA) course on leak detection in heat exchangers and buried pipelines Libyan Arab Jamahiriya
- Regional (AFRA) course on NDT level 3, training, examination and certification South Africa; Tunisia
- Regional course on chemometrics — data evaluation Albania
- Regional course on establishment of NDT quality manuals for the national certification bodies Syrian Arab Republic

- Regional course on health care radiation processed materials Syrian Arab Republic
- Regional course on IAEA validation and process control for electron beam radiation processing Poland
- Regional course on nuclear techniques in art and archaeology Syrian Arab Republic

Incident and Emergency Preparedness and Response

- Workshop on the emergency exercise and emergency preparedness and response topical group Indonesia
- Emergency preparedness and response regional workshop on early reporting of events and information sharing for event and exercise management Philippines

Safety of Nuclear Installations

- Course for regulatory bodies in Member States with nuclear power plants Headquarters
- Course on assistance to Member States in identification of training needs Headquarters
- Course on safety assessment and verification for nuclear reactors (II) Republic of Korea
- Course on safety for the nuclear fuel cycle China
- Regional course on radiation safety for customs officers Cyprus; Russian Federation
- Regional course on risk informed methods in the regulatory decision making process Hungary
- Regional course on self-assessment of national regulatory infrastructure Ethiopia
- Regional course on the safety assessment of nuclear power plants to assist decision making Spain
- Regional training course on techniques for capturing critical nuclear safety knowledge Philippines
- Regional workshop on application of deterministic safety analysis Japan
- Regional workshop on information technology security - security of information and it systems in nuclear organizations and facilities China
- Regional workshop on promotion of integrated management systems in research reactors Malaysia
- Regional workshop on promotion of safety culture in research reactor operation China
- Workshop on Incident Reporting System (IRS)/International Nuclear Event Scale (INES) criteria and reporting China
- Workshop on the application of effective management systems in nuclear installations and activities Headquarters

Radiation and Transport Safety

- Post-graduate educational course in radiation protection and safety of radioactive sources Argentina; Syrian Arab Republic

- Regional post-graduate course on radiation protection and the safe use of radiation sources South Africa
- Regional post-graduate course on radiation protection and the safety of radiation sources Greece
- Regional post-graduate course on nuclear safety Argentina
- Regional course on assessment of occupational exposure due to intake of radionuclides Republic of Korea
- Regional course on assessment of occupational exposure due to intakes of radionuclides Brazil; Greece
- Regional course on development of national workplace monitoring programme by Member States Latvia
- Regional course on prevention of accidental exposures in radiation therapy Thailand
- Regional course on radiation protection for doctors (non-radiologists, non-cardiologists) using fluoroscopy United Arab Emirates
- Regional course on radiation safety for customs personnel Venezuela
- Regional course on radiation safety for lawyers Dominican Republic; Syrian Arab Republic
- Regional course on safety requirements and national policy and strategy for radioactive waste management Uruguay
- Regional course on development of technical capabilities for external individual monitoring with emphasis on thermoluminescence dosimetry, operation, management, maintenance and troubleshooting Tunisia
- Regional course on self-assessment of national regulatory infrastructure by Member States using the RaSSIA protocol Philippines
- Workshop to assist States in implementing guidance for security in transport Peru

Management of Radioactive Waste

- Course on lessons learned by Member States in using the catalogue of sealed radioactive sources Headquarters
- Course on safety assessment for radioactive waste disposal facilities Indonesia
- Interregional course on concepts of underground research facilities, transport and retardation processes in fractured rocks — Concepts, theory and practice Switzerland
- Interregional course on deep geological repositories in sedimentary formations Germany
- Meeting/workshop to update waste management information in the Net Enabled Waste Management Database Headquarters
- Regional course on decommissioning of research reactors Uzbekistan
- Regional course on radiation safety for control of public exposure, including safe management of radioactive waste Bangladesh
- Regional course on radioactive waste management — Pre-disposal technologies Russian Federation

- Workshop on safety assessment for predisposal radioactive waste management facilities Malaysia
- Workshop on the Joint Convention on Radioactive Waste Management Australia

Nuclear Security

- Course on advanced detection equipment Brazil; China; Ghana; India; Kuwait; United Republic of Tanzania
- Course on combating illicit trafficking in nuclear and other radioactive material Argentina; Belarus; Benin; China; Croatia; Jordan
- Course on foundations of physical protection of nuclear material and facilities Egypt; Indonesia; Malaysia; Peru; Slovakia
- Course on illicit trafficking information management and coordination Singapore; South Africa,
- Course on physical protection inspections at nuclear facilities Russian Federation
- Course on physical protection of nuclear material and facilities India; Ukraine; USA
- Course on physical protection of radioactive sources Estonia; Kazakhstan; Nigeria
- Course on physical protection of research reactors China
- Course on practical operation of physical protection systems Russian Federation
- Course on radiation detection equipment Croatia
- Course on response to illicit trafficking incidents involving nuclear and other radioactive material India; South Africa
- Course on security of radioactive sources training Syrian Arab Republic
- International seminar on nuclear security USA
- International seminar on physical protection training Slovenia
- MERCOSUR regional awareness course on combating illicit trafficking in nuclear and other radioactive sources Argentina
- National workshop on transport security China
- Regional (AFRA) course on advanced detection equipment Ghana; United Republic of Tanzania
- Regional (AFRA) course on combating illicit trafficking in nuclear and other radioactive material Benin
- Regional (AFRA) course on foundations of physical protection of nuclear material and facilities Egypt
- Regional (AFRA) course on physical protection of radioactive sources Nigeria
- Regional (AFRA) workshop on response to unauthorized acts involving nuclear and other radioactive material South Africa
- Regional course on advanced detection equipment China; Kuwait
- Regional course on combating illicit trafficking in nuclear and other radioactive material Belarus; China
- Regional course on foundations of physical protection of nuclear material and facilities Malaysia
- Regional course on physical protection inspections at nuclear facilities Russian Federation

- Regional course on physical protection of radioactive sources Estonia; Kazakhstan
- Regional course on practical operation of physical protection systems Russian Federation
- Regional course on the physical protection of nuclear research reactors China
- Regional course on the physical protection of radioactive sources Syrian Arab Republic
- Regional SSAC course on implementing nuclear material accountancy Ukraine
- Regional workshop on nuclear material accounting and control at facilities China

Safeguards

- Course on new approaches to neutron coincidence data acquisition and analysis for safeguards Austria
- International SSAC course USA
- JAEA–IAEA workshop on advanced safeguards technology for the future nuclear fuel cycle Japan
- National SSAC course Egypt
- Regional SSAC course Argentina

Management of Technical Cooperation for Development

- Regional course on advanced applications of cyclotron Republic of Korea
- Regional (AFRA) workshop for managers of national nuclear institutions on strategies for human resources development, knowledge management and skills retention Tunisia
- Regional course on basic business skills for national nuclear institution managers and senior scientists Kazakhstan

Executive Management, Policy-Making and Coordination

- IAEA seminar for high level officials on the multilateral verification of nuclear non-proliferation undertakings pursuant to the Treaty on the Non-Proliferation of Nuclear Weapons Headquarters
- Meeting for senior government officials on the international framework governing nuclear safety, security and safeguards for the Latin America region Headquarters
- Seminar on nuclear science and technology for diplomats Headquarters

Table A27. Publications issued in 2007

Nuclear Power

- Economics of Nuclear Desalination: New Developments and Site Specific Studies — IAEA-TECDOC-1561
- Energy, Electricity and Nuclear Power Estimates for the Period up to 2030 — IAEA-RDS-1/27
- Establishing a Code of Ethics for Nuclear Operating Organizations — IAEA Nuclear Energy Series No. NG-T-1.2
- Guidance for the Application of an Assessment Methodology for Innovative Nuclear Energy Systems: INPRO Manual: Overview of the Methodology — IAEA-TECDOC-CD-1575
- Implementation Strategies and Tools for Condition Based Maintenance at Nuclear Power Plants — IAEA-TECDOC-1551
- INDAG Newsletter — No. 7, September 2007
- Liquid Metal Cooled Reactors: Experience in Design and Operation — IAEA-TECDOC-1569
- Management Strategies for Nuclear Power Plant Outages — Technical Reports Series No. 449
- Managing the First Nuclear Power Plant Project — IAEA-TECDOC-1555
- Milestones in the Development of a National Infrastructure for Nuclear Power — IAEA Nuclear Energy Series No. NG-G-3.1
- Nuclear Power Newsletter — Vol. 4, Nos 1–4, March, June, September and December 2007
- Nuclear Power Plant Design Characteristics — IAEA-TECDOC-1544
- Nuclear Power Reactors in the World — IAEA-RDS-2/27
- Operating Experience with Nuclear Power Stations in Member States in 2006
- PLEXFIN: A Computer Model for the Economic Assessment of Nuclear Power Plant Life Extension: User's Manual — IAEA/CMS/20
- Status of Nuclear Desalination in IAEA Member States — IAEA-TECDOC-1524
- Status of Small Reactor Designs without On-site Refuelling — IAEA-TECDOC-1536, IAEA-TECDOC-CD-1536
- Strategy for Assessment of WWER Steam Generator Tube Integrity — IAEA-TECDOC-1577
- Theoretical and Experimental Studies of Heavy Liquid Metal Thermal Hydraulics — IAEA-TECDOC-CD-1520, IAEA-TECDOC-CD-1520

Nuclear Fuel Cycle and Materials Technologies

- Advances in Applications of Burnup Credit to Enhance Spent Fuel Transportation, Storage, Reprocessing and Disposition — IAEA-TECDOC-1547, IAEA-TECDOC-CD-1547
- Data Requirements and Maintenance of Records for Spent Fuel Management: A Review — IAEA-TECDOC-CD-1519
- Fissile Material Management Strategies for Sustainable Nuclear Energy — Proceedings Series
- Fuel Cycle and Waste Newsletter — Vol. 3, No. 1, April 2007
- Lessons Learned from the Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities — Proceedings Series
- Management of Reprocessed Uranium: Current Status and Future Prospects — IAEA-TECDOC-1529, IAEA-TECDOC-CD-1529
- Nuclear Fuel Cycle Simulation System (VISTA) — IAEA-TECDOC-1535
- Operation and Maintenance of Spent Fuel Storage and Transportation Casks/Containers — IAEA-TECDOC-1532, IAEA-TECDOC-CD-1532

- Optimization Strategies for Cask Design and Container Loading in Long Term Spent Fuel Storage — IAEA-TECDOC-CD-1523
- Radioactive Sodium Waste Treatment and Conditioning: Review of Main Aspects — IAEA-TECDOC-1534
- Selection of Away-from-reactor Facilities for Spent Fuel Storage — IAEA-TECDOC-1558, IAEA-TECDOC-CD-1558

Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development

- Analyses of Energy Supply Options and Security of Energy Supply in the Baltic States — IAEA-TECDOC-1541
- Asian Network for Education in Nuclear Technology (ANENT)
- Energy, Electricity and Nuclear Power: Developments and Projections
- INIS: Authority List for Journal Titles — IAEA-INIS-11 (Rev. 33)
- INIS: Multilingual Thesaurus, Arabic, Chinese, English, French, German, Russian, Spanish — IAEA-INIS-26/CD
- Joint Thesaurus Part I (A–L) and Part II (M–Z) — IAEA-ETDE/INIS-1 (Rev. 2)
- Nuclear Information and Knowledge Newsletter — Nos 3 and 4, March and September 2007
- The World Nuclear University: New Partnership in Nuclear Education

Nuclear Science

- Atomic and Plasma–Material Interaction Data for Fusion, Vol. 13
- Characterization and Testing of Materials for Nuclear Reactors — IAEA-TECDOC-1545, IAEA-TECDOC-CD-1545
- Combined Devices for Humanitarian Demining and Explosive Detection — Proceedings Series (CD-ROM)
- Database of Prompt Gamma Rays from Slow Neutron Capture for Elemental Analysis
- Food Irradiation Newsletter — Vol. 10, No. 1, January 2007
- Fusion Energy 2006 — Proceedings Series (CD-ROM)
- Fusion Power Plant Safety — Proceedings Series (CD-ROM)
- International Evaluation of Neutron Cross-section Standards
- Nuclear Data Newsletter — Nos 43 and 44, May and September 2007
- Update of X Ray and Gamma Ray Decay Data Standards for Detector Calibration and Other Applications (Vols 1 and 2)
- Use of Irradiation to Ensure the Hygienic Quality of Fresh, Pre-cut Fruits and Vegetables and Other Minimally Processed Food of Plant Origin — IAEA-TECDOC-CD-1530
- Utilization Related Design Features of Research Reactors: A Compendium — Technical Reports Series No. 455
- WIMS-D Library Update
- X Ray Fluorescence in the IAEA and its Member States Newsletter — Nos 13 and 14, August and December 2007

Food and Agriculture

- Animal Production and Health Newsletter — Nos 46 and 46, July and December 2007
- Application of Radioimmunoassay in Improving the Reproductive Management of Smallholder Dairy Cattle — IAEA-TECDOC-1571
- Cost–Benefit Analysis Model: Economic Decision Tool for Area-wide Fruit Fly Management

- Developing Methodologies for the Use of Polymerase Chain Reaction (PCR) in the Diagnosis and Monitoring of Trypanosomosis — IAEA-TECDOC-1559
- Development of Improved Attractants and their Integration into Fruit Fly SIT Management Programmes — IAEA-TECDOC-1574
- Dosimetry in Diagnostic Radiology: An International Code of Practice
- Food and Environmental Protection Newsletter — Vol. 10, Nos 1 and 2, January and July 2007
- Improving the Reproductive Management of Dairy Cattle Subjected to Artificial Insemination — IAEA-TECDOC-1533
- Insect Pest Control Newsletter — Nos 68 and 69, January and July 2007
- Management Practices for Improving Sustainable Crop Production in Tropical Acid Soils — Proceedings Series
- Plant Breeding and Genetics Newsletter — Nos 18 and 19, January and July 2007
- Plant Mutation Reports — Vol. 1, No. 3, December 2007
- Soils Newsletter — Vol. 30, No. 1, July 2007
- The Use of Non-structural Proteins of Foot and Mouth Disease Virus (FMDV) to Differentiate Between Vaccinated and Infected Animals — IAEA-TECDOC-1546

Human Health

- Comprehensive Audits of Radiotherapy Practices: A Tool for Quality Improvement
- Criteria for Palliation of Bone Metastases: Clinical Applications — IAEA-TECDOC-1549
- Developing a Programme on Molecular Nuclear Medicine — IAEA-TECDOC-1562
- Dose Reporting in Ion Beam Therapy — IAEA-TECDOC-1560
- Intercomparison of Personal Dose Equivalent Measurements by Active Personal Dosimeters — IAEA-TECDOC-1564
- On-site Visits to Radiotherapy Centres: Medical Physics Procedures — IAEA-TECDOC-1543
- Organization of a Radioisotope Based Molecular Biology Laboratory — IAEA-TECDOC-CD-1528
- Radiation Sterilization of Tissue Allografts: Requirements for Validation and Routine Control: A Code of Practice
- Specification and Acceptance Testing of Radiotherapy Treatment Planning Systems — IAEA-TECDOC-1540
- SSDL Newsletter — Nos 53 and 54, January and October 2007

Water Resources

- Advances in Isotope Hydrology and its Role in Sustainable Water Resources Management — Proceedings Series
- Atlas of Isotope Hydrology: Africa
- International Bulletin on Atomic and Molecular Data for Fusion — No. 66, August 2007
- Introduction to Water Sampling and Analysis for Isotope Hydrology
- Validation Procedures of Software Applied in Nuclear Instruments — IAEA-TECDOC-1565
- Water and Environment News — Nos 22 and 23, May and December 2007

Assessment and Management of Marine and Terrestrial Environments

- Marine Environment News — Vol. 5, No. 1, September 2007

Radioisotope Production and Radiation Technology

- Code of Conduct on the Safety and Security of Radioactive Sources
- Comparative Evaluation of Therapeutic Radiopharmaceuticals — Technical Reports Series No. 458
- Labelling of Small Biomolecules Using Novel Technetium-99m Cores — Technical Reports Series No. 459
- Radiation Processing: Environmental Applications
- Speciation Analysis of Arsenic, Chromium and Selenium in Aquatic Media — IAEA-TECDOC-1542

Nuclear Safety and Security

- IAEA Safety Glossary: Terminology Used in Nuclear Safety and Radiation Protection: 2007 Edition

Safety of Nuclear Installations

- Assessment and Management of Ageing of Major Nuclear Power Plant Components Important to Safety: PWR Vessel Internals 2007 Update — IAEA-TECDOC-1557
- Assessment and Management of Ageing of Major Nuclear Power Plant Components Important to Safety: PWR Pressure Vessels 2007 Update — IAEA-TECDOC-1556
- Challenges Faced by Technical and Scientific Support Organizations in Enhancing Nuclear Safety — Proceedings Series
- Computational Analysis of the Behaviour of Nuclear Fuel Under Steady State, Transient and Accident Conditions — IAEA-TECDOC-1578
- Deterministic Analysis of Operational Events in Nuclear Power Plants — IAEA-TECDOC-1550
- Engineering Safety Aspects of the Protection of Nuclear Power Plants against Sabotage
- Generic Safety Issues for Nuclear Power Plants with Pressurized Heavy Water Reactors and Measures for their Resolution — IAEA-TECDOC-1554
- NS Update — Nos 2–5, January, April, June and September 2007
- Proposal for a Technology-neutral Safety Approach for New Reactor Designs — IAEA-TECDOC-1570
- Safety Aspects of Long Term Operation of Water Moderated Reactors: Recommendations on the Scope and Content of Programmes for Safe Long Term Operation
- Use and Development of Coupled Computer Codes for the Analysis of Accidents at Nuclear Power Plants — IAEA-TECDOC-1539

Radiation and Transport Safety

- Arrangements for Preparedness for a Nuclear or Radiological Emergency — IAEA Safety Standards Series No. GS-G-2.1
- Emergency Notification and Assistance Technical Operations Manual
- Inspection of Radiation Sources and Regulatory Enforcement (Supplement to IAEA Safety Standards Series No. GS-G-1.5) — IAEA-TECDOC-1526
- Intercomparison Exercise on Internal Dose Assessment — IAEA-TECDOC-1568
- Intercomparison of Measurements of Personal Dose Equivalent Hp(10) in Photon Fields in the West Asia Region — IAEA-TECDOC-CD-1567
- Notification and Authorization for the Use of Radiation Sources (Supplement to IAEA Safety Standards Series No. GS-G-1.5) — IAEA-TECDOC-1525
- Radiation Protection and NORM Residue Management in the Zircon and Zirconia Industries — Safety Reports Series No. 51
- Radiation Protection Programmes for the Transport of Radioactive Material — IAEA Safety Standards Series No. TS-G-1.3
- Radiation Safety Training Course for Customs Officers

- Radiation Safety Training Course for Lawyers
- Security of Radioactive Sources: Interim Guidance for Comment — IAEA-TECDOC-1355

Management of Radioactive Waste

- Categorizing Operational Radioactive Wastes — IAEA-TECDOC-1538
- Considerations for Waste Minimization at the Design Stage of Nuclear Facilities — Technical Reports Series No. 460
- Cost Considerations and Financing Mechanisms for the Disposal of Low and Intermediate Level Radioactive Waste — IAEA-TECDOC-1552
- Decommissioning Strategies for Facilities Using Radioactive Material — Safety Reports Series No. 50
- Disposal Aspects of Low and Intermediate Level Decommissioning Waste — IAEA-TECDOC-1572
- Factors Affecting Public and Political Acceptance for the Implementation of Geological Disposal — IAEA-TECDOC-1566
- Fuel Cycle and Waste Newsletter — Vol. 3, No. 2, July 2007
- Identification of Radioactive Sources and Devices — IAEA Nuclear Security Series No. 5
- Low and Intermediate Level Waste Repositories: Socioeconomic Aspects and Public Involvement — IAEA-TECDOC-1553
- Management of Spent Fuel from Nuclear Power Reactors — Proceedings Series
- New Developments and Improvements in Processing of ‘Problematic’ Radioactive Waste — IAEA-TECDOC-1579
- Remediation Process for Areas Affected by Past Activities and Accidents — IAEA Safety Standards Series No. WS-G-3.1
- Retrieval and Conditioning of Solid Radioactive Waste from Old Facilities — Technical Reports Series No. 456
- Retrieval, Restoration and Maintenance of Old Radioactive Waste Inventory Records — IAEA-TECDOC-1548
- Spent Fuel and High Level Waste: Chemical Durability and Performance under Simulated Repository Conditions — IAEA-TECDOC-1563
- Strategy and Methodology for Radioactive Waste Characterization — IAEA-TECDOC-1537

Nuclear Security

- Combating Illicit Trafficking in Nuclear and Other Radioactive Material — IAEA Nuclear Security Series No. 6

Safeguards

- Addressing Verification Challenges — Proceedings Series

Conference, Translation and Publishing Services

- Atoms for Peace: A Pictorial History of the International Atomic Energy Agency

Executive Management, Policy-Making and Coordination

- The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage: Explanatory Texts — IAEA International Nuclear Law Series No. 3

Incident and Emergency Preparedness and Response

- Emergency Notification and Assistance Technical Operations Manual
- Joint Radiation Emergency Management Plan of the International Organizations
- RANET Assistance Action Plan Attachment 1
- RANET Registry Attachment 2
- RANET Technical Guidelines Attachment 3

Table A28. Facilities under Agency Safeguards or Containing Safeguarded Material on 31 December 2007

State ^a	Name of facility	Location ^a
Power reactors		
Argentina	Atucha	Lima
	Embalse	Embalse
Armenia	Armenia	Metsamor
Belgium	Tihange-1	Tihange
	Tihange-2	Tihange
	Tihange-3	Tihange
	Doel-1	Doel
	Doel-3	Doel
	Doel-4	Doel
Brazil	Angra-2	Angra dos Reis
	Angra-1	Angra dos Reis
Bulgaria	Kozloduy-I	Kozloduy
	Kozloduy-II	Kozloduy
	Kozloduy-III	Kozloduy
Canada	Bruce A	Tiverton
	Bruce B	Tiverton
	Gentilly-2	Gentilly
	Darlington	Bowmanville
	Pickering	Pickering
	Point Lepreau	Point Lepreau
China	Qin Shan	Hai Yan
Czech Republic	EDU-1	Dukovany
	EDU-2	Dukovany
	Temelin	Temelin
Finland	Loviisa	Loviisa
	TVO-I	Olkiluoto
	TVO-II	Olkiluoto
Germany	AVR	Jülich
	Brunsbüttel	Brunsbüttel
	Grohnde	Grohnde
	Neckarwestheim-II	Neckarwestheim
	Obrigheim	Obrigheim
	Biblis-A	Biblis
	Biblis-B	Biblis
	Emsland	Lingen
	Grafenrheinfeld	Grafenrheinfeld
	Greifswald-1 and 2	Lubmin
	Isar-2	Essenbach
	Isar-Ohu	Ohu bei Landshut
	Krümmel	Geesthacht
	Philippsburg-1	Philippsburg
Philippsburg-2	Philippsburg	
Brokdorf	Brokdorf	

State ^a	Name of facility	Location ^a
	Gundremmingen-B	Gundremmingen
	Gundremmingen-C	Gundremmingen
	Unterweser	Unterweser
	Neckarwestheim	Neckarwestheim
	Thorium Hochtemperatur Reaktor	Hamm
Hungary	Paks-I (units 1 and 2)	Paks
	Paks-II (units 3 and 4)	Paks
India	KKNP	Kudankulam
	RAPS	Rajasthan
	TAPS	Tarapur
Iran, Islamic Republic of	Bushehr	Halilem
Italy	ENEL-Trino	Trino-Vercellese
	ENEL-Caorso	Caorso
	ENEL-Latina	Borgo-Sabotino
Japan	Joyo	Higashi-gun, Ibaraki-ken
	Fukushima Dai-ichi-2	Futaba-gun, Fukushima-ken
	Fukushima Dai-ichi-3	Futaba-gun, Fukushima-ken
	Fukushima Dai-ichi-6	Futaba-gun, Fukushima-ken
	Fukushima Dai-ichi-1	Futaba-gun, Fukushima-ken
	Fukushima Dai-ichi-4	Futaba-gun, Fukushima-ken
	Fukushima Dai-ichi-5	Futaba-gun, Fukushima-ken
	Fukushima Dai-ni-1	Futaba-gun, Fukushima-ken
	Fukushima Dai-ni-2	Futaba-gun, Fukushima-ken
	Fukushima Dai-ni-3	Futaba-gun, Fukushima-ken
	Fukushima Dai-ni-4	Futaba-gun, Fukushima-ken
	Genkai-1	Higashimatsuura-gun, Saga-ken
	Genkai-2	Higashimatsuura-gun, Saga-ken
	Genkai-3	Higashimatsuura-gun, Saga-ken
	Genkai-4	Higashimatsuura-gun, Saga-ken
	Hamaoka-1	Ogasa-gun, Shizuoka-ken
	Hamaoka-2	Ogasa-gun, Shizuoka-ken
	Hamaoka-3	Ogasa-gun, Shizuoka-ken
	Hamaoka-4	Ogasa-gun, Shizuoka-ken
	Hamaoka-5	Ogasa-gun, Shizuoka-ken
	Higashidori-1	Shimokita-gun, Aomori-ken
	Ikata-1	Nishiuwa-gun, Ehime-ken
	Ikata-2	Nishiuwa-gun, Ehime-ken
	Ikata-3	Nishiuwa-gun, Ehime-ken
	Kashiwazaki-Kariwa-2	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-3	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-4	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-5	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-1	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-6	Kashiwazaki-shi, Niigata-ken
	Kashiwazaki-Kariwa-7	Kashiwazaki-shi, Niigata-ken
	Mihama-1	Mikata-gun, Fukui-ken
	Mihama-2	Mikata-gun, Fukui-ken
	Mihama-3	Mikata-gun, Fukui-ken
	Ohi-3	Ohi-gun, Fukui-ken
	Ohi-4	Ohi-gun, Fukui-ken
	Ohi-1 and 2	Ohi-gun, Fukui-ken
	Onagawa-1	Oshika-gun, Miyagi-ken

State ^a	Name of facility	Location ^a
	Onagawa-2	Oshika-gun, Miyagi-ken
	Onagawa-3	Oshika-gun, Miyagi-ken
	Fugen	Tsuruga-shi, Fukui-ken
	Monju	Tsuruga-shi, Fukui-ken
	Sendai-1	Sendai-shi, Kagoshima-ken
	Sendai-2	Sendai-shi, Kagoshima-ken
	Shika-1	Hakui-gun, Ishikawa-ken
	Shika-2	Hakui-gun, Ishikawa-ken
	Shimane-1	Yatsuka-gun, Shimane-ken
	Shimane-2	Yatsuka-gun, Shimane-ken
	Takahama-1	Ohi-gun, Fukui-ken
	Takahama-2	Ohi-gun, Fukui-ken
	Takahama-3	Ohi-gun, Fukui-ken
	Takahama-4	Ohi-gun, Fukui-ken
	Tokai-2	Tokai-mura, Ibaraki-ken
	Tomari-1	Furuu-gun, Hokkaido
	Tomari-2	Furuu-gun, Hokkaido
	Tsuruga-1	Tsuruga-shi, Fukui-ken
	Tsuruga-2	Tsuruga-shi, Fukui-ken
Kazakhstan	BN-350	Aktau
Korea, Republic of	Kori-1	Pusan
	Kori-2	Pusan
	Kori-3	Pusan
	Kori-4	Pusan
	Ulchin-1	Ulchin
	Ulchin-2	Ulchin
	Ulchin-3	Ulchin
	Ulchin-4	Ulchin
	Ulchin-5	Ulchin
	Ulchin-6	Ulchin
	Wolsong-1	Kyongju
	Wolsong-2	Kyongju
	Wolsong-3	Kyongju
	Wolsong-4	Kyongju
	Younggwang-1	Younggwang
	Younggwang-2	Younggwang
	Younggwang-3	Younggwang
	Younggwang-4	Younggwang
	Younggwang-5	Younggwang
	Younggwang-6	Younggwang
Lithuania	Ignalina	Visaginas
Mexico	Laguna Verde 1	Alto Lucero
	Laguna Verde 2	Alto Lucero
Netherlands	Borssele	Borssele
Pakistan	Chashma-1	Kundian
	Karachi	Karachi
Romania	Cernavoda-1	Cernavoda
	Cernavoda-2	Cernavoda

State ^a	Name of facility	Location ^a
Slovakia	Mochovce EM0-1	Mochovce
	Bohunice-1	Bohunice
	Bohunice-2	Bohunice
Slovenia	Krško	Krško
South Africa	Koeberg-1	Cape Town
	Koeberg-2	Cape Town
Spain	Santa María de Garona	Santa María de Garona
	José Cabrera	Almonacid de Zorita
	Almaraz-1	Almaraz
	Almaraz-2	Almaraz
	Cofrentes	Cofrentes
	Asco-1	Asco
	Asco-2	Asco
	Vandellòs-2	Vandellòs
	Trillo-1	Trillo
Vandellòs-1	Vandellòs	
Sweden	Forsmark-1	Östhammar
	Forsmark-2	Östhammar
	Forsmark-3	Östhammar
	Oskarshamn-1	Oskarshamn
	Oskarshamn-2	Oskarshamn
	Oskarshamn-3	Oskarshamn
	Ringhals-1	Ringhals
	Ringhals-2	Ringhals
	Ringhals-3	Ringhals
	Ringhals-4	Ringhals
Switzerland	Mühleberg	Mühleberg
	Beznau-I	Beznau
	Beznau-II	Beznau
	Gösgen	Gösgen-Däniken
	Leibstadt	Leibstadt
Ukraine	Chernobyl	Chernobyl
	Khmelnitski-1	Neteshin
	Khmelnitski-2	Neteshin
	Rovno-3	Kuznetsovsk
	Rovno-4	Kuznetsovsk
	Rovno-1 and 2	Kuznetsovsk
	South Ukraine 1	Yuzhnoukrainsk
	South Ukraine 2	Yuzhnoukrainsk
	South Ukraine 3	Yuzhnoukrainsk
	Zaporozhe-1	Energodar
	Zaporozhe-2	Energodar
	Zaporozhe-3	Energodar
	Zaporozhe-4	Energodar
	Zaporozhe-5	Energodar
Zaporozhe-6	Energodar	

State ^a	Name of facility	Location ^a
Research reactors and critical assemblies		
Algeria	Es Salam research reactor	Ain Oussera
	NUR research reactor	Wilaya de Tipaza
Argentina	Argentine reactor-8	Pilcaniyeu
	Argentine reactor-0	Córdoba
	Argentine reactor-1	Constituyentes
	Argentine reactor-3	Ezeiza
	Argentine reactor-4	Rosario
	Argentine reactor-6	Bariloche
Australia	HIFAR	Lucas Heights
	MOATA	Lucas Heights
	OPAL	Lucas Heights
Austria	Atominstitut der Österreichischen Universitäten	Vienna
Bangladesh	Atomic Energy Research Establishment	Dhaka
Belarus	Sosny	Minsk
Belgium	BR1-CEN	Mol
	BR2/BR02	Mol
	Venus	Mol
	Thetis	Gent
Brazil	Argonaut reactor	Rio de Janeiro
	Critical unit IPEN/MB-01	São Paulo
	IEA-R1	São Paulo
	IPR-R1 CDTN	Belo Horizonte
Bulgaria	IRT-2000	Sofia
Canada	Dalhousie University Slowpoke	Halifax
	DIF	Chalk River
	Health Sciences, Chemistry, Reactor Physics, Fuel Engineering and Manufacturing	Chalk River
	McMaster	Hamilton
	NRU	Chalk River
	NRX	Chalk River
	Slowpoke de l'École Polytechnique	Montreal
	Saskatchewan Slowpoke	Saskatoon
	Slowpoke-2 Facility at the Royal Military College of Canada	Kingston
	University of Alberta Slowpoke	Edmonton
Chile	La Reina	Santiago
	Lo Aguirre	Santiago
China	HTGR	Nankou
Colombia	IAN-R1	Bogotá

State ^a	Name of facility	Location ^a
Czech Republic	LR-O	Řež
	Research reactor	Řež
	University training reactor VR-1	Prague
Democratic Republic of the Congo	Triga-II	Kinshasa
Egypt	ET RR-1	Inshas
	MPR	Inshas
Finland	FIR 1	Espoo
Georgia	IRT-M	Tbilisi
Germany	AKR	Dresden
	FRJ-2	Jülich
	FRM	Garching
	GKSS	Geesthacht
	BER-II	Berlin
	FRM-II	Garching
	SUR-100	Furtwangen
	SUR-100	Kiel
	SUR-100	Ulm
	SUR-100	Berlin
	SUR-100	Aachen
SUR-100	Hannover	
SUR-100	Stuttgart	
SUR-100	Mainz	
Triga	Mainz	
Ghana	GHARR-1	Legon-Accra
Greece	GRR-1	Attiki
Hungary	Budapest research reactor	Budapest
	Training reactor	Budapest
Indonesia	Centre for Research and Development of Nuclear Techniques	Bandung
	Multipurpose reactor	Serpong
	Yogyakarta Nuclear Research Centre	Yogyakarta
Iran, Islamic Republic of	Esfahan miniature neutron source reactor	Esfahan
	Heavy water zero power reactor	Esfahan
	Light water subcritical reactor	Esfahan
	TRR	Tehran
Israel	IRR-1	Soreq
Italy	AGN-201	Palermo
	RTS-1	San Piero a Grado
	Tapiro	Santa Maria di Galeria
	Triga-II	Pavia
	Triga-RC1	Santa Maria di Galeria
Jamaica	Centre for Nuclear Sciences	Kingston

State ^a	Name of facility	Location ^a
Japan	DCA	Oarai-machi, Ibaraki-ken
	FCA	Tokai-mura, Ibaraki-ken
	HTTR	Higashi-gun, Ibaraki-ken
	HTR	Kawasaki-shi, Kanagawa-ken
	JMTR	Higashi-gun, Ibaraki-ken
	JMTRCF	Higashi-gun, Ibaraki-ken
	JRR-2	Tokai-mura, Ibaraki-ken
	JRR-3	Tokai-mura, Ibaraki-ken
	JRR-4	Tokai-mura, Ibaraki-ken
	Kinki University reactor	Higashiosaka-shi, Osaka-fu
	KUCA	Osaka
	KUR	Sennan-gun, Osaka
	Musashi reactor	Kawasaki-shi, Kanagawa-ken
	NSRR	Tokai-mura, Ibaraki-ken
	Rikkyo University research reactor	Nagasaka, Kanagawa-ken
	TTCA	Tokai-mura, Ibaraki-ken
Tokyo University-Yayoi	Tokai-mura, Ibaraki-ken	
TNCA	Kawasaki-shi	
TTR	Kawasaki-shi, Kanagawa-ken	
VHTRCA	Tokai-mura, Ibaraki-ken	
Kazakhstan	Kurchatov test reactor	Kurchatov
	WWR-K	Almaty
Korea, Republic of	HANARO	Taejon
	Triga-II and III	Seoul
	AGN-201	Suwoon
Latvia	IRT	Salapils
Libyan Arab Jamahiriya	IRT	Tajura
Malaysia	Puspati	Bangi, Selangor
Mexico	Triga-III	Ocoyoacac
Morocco	MA-R1	Rabat
Netherlands	HFR	Petten
	HOR	Delft
	LFR	Petten
Nigeria	Nigeria research reactor 1	Zaria
Norway	HBWR	Halden
	Jeep-II	Kjeller
Pakistan	PARR-1	Rawalpindi
	PARR-2	Rawalpindi
Peru	RP-10	Lima
	RP-0	Lima
Philippines	PRR	Quezon City, Diliman
Poland	Maria	Otwock-Swierk

State ^a	Name of facility	Location ^a
Portugal	RPI	Sacavem
Romania	Material testing facility National Institute R&D for Physics and Nuclear Engineering 'Horia Hulubei'	Pitesti Colibasi Magurele
Serbia	Vinča Institute of Nuclear Sciences	Vinča
Slovenia	Triga-II	Ljubljana
South Africa	SAFARI-I	Pelindaba
Sweden	Studsvik	Studsvik
Switzerland	AGN 211P Crocus Proteus	Basel Lausanne Würenlingen
Syrian Arab Republic	MNSR	Damascus
Thailand	TRR	Bangkok
Turkey	Çekmece Nuclear Research and Training Centre	Istanbul
Turkey	ITU-TRR Triga-II	Istanbul
Ukraine	IR-100 WWR-M	Sevastopol Kiev
Uzbekistan	IIN-3M WWR-SM	Tashkent Ulugbek
Venezuela	IVIC	Altos de Pipe
Vietnam	Da Lat research reactor	Da Lat, Lam Dong
Conversion plants		
Algeria	Pilot uranium concentration purification unit	Draria nuclear site
Argentina	UF ₆ production plant UO ₂ conversion plant	Pilcaniyeu Córdoba
Canada	Cameco Corporation Blind River refinery Cameco Corporation Port Hope conversion facility	Blind River Port Hope
Chile	Experimental conversion laboratory	Santiago
Iran, Islamic Republic of	Uranium chemistry laboratory UCF	Esfahan Esfahan

State ^a	Name of facility	Location ^a
Japan	JCO	Tokai-mura, Ibaraki-ken
	JNC	Tomata-gun, Okayama-ken
	Plutonium conversion development facility	Tokai-mura, Ibaraki-ken
Korea, Republic of	DUF4 conversion plant	Taejon
Mexico	Fuel fabrication pilot plant	Salazar
Romania	Sinterable UO ₂ powder processing plant	Feldiora
South Africa	Conversion plant	Pelindaba
	HEU and LEU conversion, alloy production, scrap recovery plant	Pelindaba
Sweden	Ranstad Mineral	Stenstorp
Fabrication plants		
Algeria	UDEC	Draria nuclear site
Argentina	Experimental plant	Constituyentes
	Fuel fabrication plant	Ezeiza
	Research reactors fuel elements fabrication plant	Constituyentes
	Research reactor fuel fabrication plant	Ezeiza
Belgium	BN-MOX	Dessel
	FBFC	Dessel
	FBFC MOX	Dessel
Brazil	Fuel fabrication plant	Resende
Canada	Fuel engineering, metallurgy, workshops, metallurgy and chemical operations	Chalk River
	Fuel fabrication facility	Chalk River
	General Electric Canada	Toronto
	General Electric Canada Zircatec Precision Industries	Peterborough Port Hope
Chile	UMF	Santiago
Egypt	FMPP	Inshas
	Research and development nuclear fuel laboratory	Inshas
Germany	Advanced Nuclear Fuels	Lingen
India	CFFAA	Hyderabad
	NFC	Hyderabad
Indonesia	Experimental fuel element installation	Serpong
	Research reactor fuel element	Serpong
	production installation	

State ^a	Name of facility	Location ^a
Iran, Islamic Republic of	Fuel fabrication laboratory	Esfahan
Italy	FN-Nuovo Tecnologie e Servizi Avanzati	Bosco Marengo
Japan	Global Nuclear Fuel Mitsubishi Nuclear Fuel NFI Kumatori-1 Tokai-1 NFI Kumatori-2 Plutonium fuel production facility PFC plutonium fuel facility	Yokosuka-shi, Kanagawa-ken Tokai-mura, Ibaraki-ken Sennan-gun, Osaka Tokai-mura, Ibaraki-ken Sennan-gun, Osaka Tokai-mura, Ibaraki-ken Tokai-mura, Ibaraki-ken
Kazakhstan	Ulbinski metallurgical plant	Kamenogorsk
Korea, Republic of	Korea nuclear fuel fabrication plant	Taejon
Romania	NFP	Pitesti Colibasi
South Africa	BEVA	Pelindaba
Spain	ENUSA fuel fabrication plant	Juzbado
Sweden	ABB	Västeras
Turkey	Nuclear fuel pilot plant	Istanbul
Reprocessing plants		
Germany	WAK	Eggenstein-Leopoldshafen
India	PREFRE	Tarapur
Italy	Eurex ITREC	Saluggia Rotondella
Japan	Chemical processing facility (JAEA Tokai research and development) Rokkasho reprocessing plant Solution critical facility of NUCEF Tokai reprocessing plant	Tokai-mura, Ibaraki-ken Kamikita-gun, Aomori-ken Tokai-mura, Ibaraki-ken Tokai-mura, Ibaraki-ken
Enrichment plants		
Argentina	Uranium enrichment plant	Pilcaniyeu
Brazil	Isotopic enrichment laboratory Laser spectroscopy laboratory U-235 centrifuge enrichment plant Uranium enrichment pilot plant	Iperó São José dos Campos Resende Iperó
China	Shaanxi uranium enrichment plant	Han Zhang
Germany	UTA-1	Gronau
Iran, Islamic Republic of	Fuel enrichment plant Pilot fuel enrichment plant	Natanz Natanz

State ^a	Name of facility	Location ^a
Japan	Rokkasho enrichment and disposal office centrifuge test facility	Kitakami-gun, Aomori-ken
	Rokkasho uranium enrichment plant	Kamikita-gun, Aomori-ken
	Uranium enrichment plant	Tomata-gun, Okayama-ken
Netherlands	URENCO SP4, SP5	Almelo
United Kingdom	URENCO A3, E22 and E23	Capenhurst
Separate storage facilities		
Argentina	Central store	Ezeiza
	Central store	Constituyentes
	DUE	Ezeiza
	Nuclear material storage	Constituyentes
	Storage bunker	Ezeiza
Armenia	Dry spent fuel storage	Metsamor
Australia	Vault storage	Lucas Heights
Belgium	Belgoprocess dry storage	Dessel
	Belgoprocess	Dessel
	Electrabel Doel Droge Stockage	Beveren
	Zone de production nucléaire de Tihange	Tihange
Brazil	Aramar store	Iperó
	UF ₆ production	São Paulo
Bulgaria	AFRS	Kozloduy
Canada	AECL Research	Pinawa
	CRL spent fuel storage facility	Chalk River
	Douglas Point dry irradiated fuel storage	Tiverton
	Gentilly-I dry irradiated fuel storage facility	Gentilly
	Nuclear material storage facility	Chalk River
	Pickering used fuel dry storage facility	Pickering
	Spent fuel dry canister storage facility	Chalk River
	Spent fuel storage facility	Chalk River
Western used fuel dry storage facility	Tiverton	
Czech Republic	High level radioactive waste storage	Řež
	Dukovany interim spent fuel storage	Dukovany
	Skoda Plzen-Bolevec storage	Bolevec
Denmark	Risø store	Roskilde
	Danish decommissioning waste treatment plant	Roskilde
Finland	TVO-KPA store	Olkiluoto
France	COGEMA UP2 and UP3	La Hague

State ^a	Name of facility	Location ^a	
Germany	AVR-Behälterlager für Bestrahlte Brennelementkugeln	Jülich	
	Brennelementbehälterlager Grafenrheinfeld	Grafenrheinfeld	
	Brennelemente-Zwischenlager Biblis	Biblis	
	Brennelemente-Zwischenlager Gundremmingen	Gundremmingen	
	Brennelementlager Isar	Essenbach	
	Brennelement-Zwischenlager Ahaus	Ahaus	
	Gemeinschaftskernkraftwerk Neckar, Zwischenlager	Neckarwestheim	
	Kernmateriallager Gebäude 87	Rosendorf	
	Lager der Kernforschungsanlage Jülich für Bestr. Ahlte Avr Brennelement-Kugeln	Jülich	
	NCS, Lagerhalle Hanau, Geb. 15	Hanau	
	Staatliches Spaltstofflager für Plutonium und hochangereichertes Uran	Hanau	
	Standort Zwischenlager Kruemmel	Geesthacht	
	Standort Zwischenlager Philippsburg	Philippsburg	
	Standort-Zwischenlager Lingen	Lingen	
	Standortzwischenlager Brunsbüttel	Brunsbüttel	
	Transportbehälterlager Gorleben	Gorleben	
	Zwischenlager Kernkraftwerk Grohnde	Emmerthal	
	Zwischenlager Nord	Lubmin	
	Zwischenlager-Kernkraftwerk Brokdorf	Brokdorf	
	Zwischenlager-Kernkraftwerk Unterweser	Stadland	
	Hungary	Central isotope storage	Budapest
		MVDS	Paks
	India	AFR	Tarapur
Indonesia	Transfer channel and interim storage for spent fuel	Serpong	
Iran, Islamic Republic of	Karaj radioactive waste storage	Karaj	
Iraq	Tuwaitha, location C	Tuwaitha	
Italy	Deposito Avogadro	Turin	
	INE, non-irradiated nuclear material	Ispra	
	Essor storage pond	Ispra	
	Nucleco	Rome	
Research centre	Ispra		
Japan	Fukushima Dai-ichi common spent fuel storage facility	Futaba-gun, Fukushima-ken	
	Kyoto University fresh fuel storage	Sennan-gun, Osaka	
Kazakhstan	Ulba thorium storage	Kamenogorsk	
Korea, Republic of	Nuclear material storage facility	Taejon	

State ^a	Name of facility	Location ^a
Lithuania	Ignalina spent fuel dry storage	Visaginas
Netherlands	COVRA COVRA – Habog	Vlissingen Vlissingen
Pakistan	Hawks Bay depot	Karachi
Poland	Radioactive waste management plant	Swierk
Portugal	Instalacao de Armazenagem	Sacavem
Romania	Interim dry spent fuel storage	Cernavoda
Slovakia	Bohunice interim store	Bohunice
Slovenia	CSRAO, ARAO	Brinje
South Africa	Bulk storage facility Decommissioned pilot enrichment plant E building storage facility HEU storage vault Koeberg Castor storage facility Thabana pipe store Waste storage facility Z plant storage facility	Pelindaba Pelindaba Valindaba Pelindaba Cape Town Pelindaba Pelindaba Pelindaba
Spain	Intermediate dry spent fuel storage	Trillo
Sweden	SKB clab store	Oskarshamn
Switzerland	Central interim storage facility SAPHIR	Würenlingen Würenlingen
USA	K area materials storage facility Plutonium storage Tube vault 16	Savannah River Site Hanford Oak Ridge
Ukraine	Spent fuel storage Fresh fuel storage Khmel'nitski Fresh fuel storage Fresh fuel storage Dry spent nuclear fuel storage facility Fresh fuel storage	Chernobyl Neteshin Kuznetsovsk Yuzhnoukrainsk Energodar Energodar
United Kingdom	Special nuclear material store 9 Thorp product store	Sellafield Sellafield
Other facilities		
Algeria	AURES I	Ain Oussara
Argentina	Alpha laboratory Enriched uranium recovery laboratory Fission products division Radiochemical facility laboratory Post-irradiation testing laboratory	Constituyentes Ezeiza Ezeiza Ezeiza Ezeiza

State ^a	Name of facility	Location ^a
	LTA Uranium powder fabrication plant	Ezeiza Constituyentes
Australia	Research and development laboratories	Lucas Heights
Belgium	CEN waste IRMM IRE Laboratoires plutonium du CEN/SCK SCK-CEN laboratories	Dessel Geel Fleurus Mol Mol
Brazil	Fuel development and technology coordination Isotope separation element development laboratory Nuclear fuel and instrumentation development laboratory Nuclear materials laboratory Reprocessing project	São Paulo São Paulo São Paulo Iperó São Paulo
Czech Republic	Nuclear fuel institute Radioactive waste repository Research laboratories	Prague Litomerice Řež
Georgia	Subcritical assembly Sukhumi Institute	Tbilisi Sukhumi
Germany	Deutsches Elektronen-Synchrotron Heisse Zellen der Kernforschungsanlage Laboratorien der Kernforschungsanlage Transuran Institut	Hamburg Jülich Jülich Leopoldshafen
Indonesia	Radiometallurgy installation	Serpong
Iran, Islamic Republic of	Jabr Ibn Hayan multipurpose laboratory	Tehran
Italy	Laboratorio plutonio	Santa Maria di Galeria
Japan	JAERI Oarai research establishment JAERI Tokai research establishment JNC fuel monitoring facility JNC irradiation rig assembling facility JNC Oarai research and development facility JNC Tokai research and development Kyoto University, Kumatori Neutron radiation facility NDC fuel hot laboratory NERL, University of Tokyo NFI Tokai-2 NFD research facility Uranium material laboratory	Higashi, Ibaraki-ken Tokai-mura, Ibaraki-ken Higashi, Ibaraki-ken Higashi-gun, Ibaraki-ken Higashi, Ibaraki-ken Tokai-mura, Ibaraki-ken Sennan-gun, Osaka Tsukuba-shi, Ibaraki-ken Tokai-mura, Ibaraki-ken Tokai-mura, Ibaraki-ken Tokai-mura, Ibaraki-ken Higashi, Ibaraki-ken Higashi, Ibaraki-ken

State ^a	Name of facility	Location ^a
Korea, Republic of	Advanced spent fuel conditioning process demonstration facility	Taejon
	DUPIC fuel development facility	Taejon
	HANARO fuel fabrication laboratory	Taejon
	Irradiation material examination facility	Taejon
	Nuclear fuel cycle related R&D facility	Taejon
	Post-irradiation examination facility	Taejon
	Acrylonitrile plant	Ulsan
Libyan Arab Jamahiriya	Tajura uranium R&D facility	Tajura
Netherlands	ECN and JRC	Petten
Norway	Research laboratories	Kjeller
South Africa	Hot cell complex	Pelindaba
	Decontamination and waste recovery plant	Pelindaba
	NU and DU metals plant	Pelindaba
Spain	ENRESA	El Cabril
Switzerland	CERN	Geneva
	EIR	Würenlingen
Ukraine	Chernobyl unit 4 shelter	Chernobyl
	National Science Center–Kharkov Institute of Physics and Technology	Kharkov
	Subcritical uranium water assembly	Sevastopol
United States of America	BWX Technologies facility	Lynchburg

^a An entry in this column does not imply the expression of any opinion whatsoever on the part of the Agency concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

Note: The Agency was also applying safeguards in Taiwan, China, at eight power reactors, three research reactors/critical assemblies, one uranium pilot conversion plant, one fuel fabrication plant, one storage facility and one R&D facility.

Note: Additionally under Agency safeguards there were more than 300 locations outside facilities in 45 States.