

The background of the cover is a light blue gradient. It features a large, faint wireframe sphere on the left side, composed of many thin white lines. To the right of the sphere are several concentric circles and arcs, also made of thin white lines, some of which are dotted. The overall design is modern and technical.

IAEA ANNUAL REPORT 2015

Additional Annex Information

THE ANNUAL REPORT FOR 2015

Additional Annex Information

Table A25. Coordinated research projects initiated in 2015

Nuclear Power

- Radioactive Release from the Prototype Fast Breeder Reactor under Severe Accident Conditions

Nuclear Fuel Cycle and Materials Technology

- Uranium/Thorium Fuelled High Temperature Gas Cooled Reactor Applications for Energy Neutral and Sustainable Comprehensive Extraction and Mineral Product Development Processes
- Geochemical and Mineralogical Characterization of Uranium and Thorium Deposits
- Analysis of Options and Experimental Examination of Fuels for Water Cooled Reactors with Increased Accident Tolerance

Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development

- Sustainable Education in Nuclear Science and Technology

Nuclear Science

- Pathways to Energy from Inertial Fusion: Materials Beyond Ignition
- In Situ Measurements for Rapid Environmental Mapping of Contaminated Sites
- Benchmarks of Computational Tools against Experimental Data on Fuel Burnup and Material Activation for Utilization, Operation and Safety Analysis of Research Reactors
- Options and Technologies for Managing the Back End of the Research Reactor Nuclear Fuel Cycle
- Condition Monitoring and Incipient Failure Detection of Rotating Equipment in Research Reactors

Food and Agriculture

- Mosquito Handling, Transport, Release and Male Trapping Methods
- Efficient Screening Techniques to Identify Mutants with Disease Resistance for Coffee and Banana
- Comparing Rearing Efficiency and Competitiveness of Sterile Male Strains Produced by Genetic, Transgenic or Symbiont Based Technologies
- Development and Strengthening of Radioanalytical and Complementary Techniques to Control Residues of Veterinary Drugs and Related Chemicals in Aquaculture Products
- Development of Electron Beam and X Ray Applications for Food Irradiation (DEXAFI)

Human Health

- Enhancing Capacity of Neuroimaging and Biomarkers: Application in Early Stage Alzheimer's Disease with Comorbidities
- Evaluation and Optimization of Paediatric Imaging
- Testing of Code of Practice on Small Field Dosimetry
- Improving Radiotherapy Treatment Planning for Patients with Nasopharyngeal Carcinoma in Low and Middle Income Countries
- Quality Assurance of Volumes Definition for Three Dimensional Treatment Planning
- Optimizing Nuclear Techniques to Assess Vitamin A Status
- Bioavailability of Proteins from Plant Based Diets

Environment

- Toxicological and Ecotoxicological Assessment of Benthic Algae and Their Toxins to Achieve Sustainable Management of Marine Ecosystem Services
- Radioisotope Production and Radiation Technologies
- Sharing and Developing Protocols to Further Minimize Radioactive Gaseous Releases to the Environment in the Manufacture of Medical Radioisotopes, as Good Manufacturing Practice
- Development of Radiometric Methods for Exploration and Process Optimization in Mining and Mineral Industries
- Developing Radiation Treatment Methodologies and New Resin Formulations for Consolidation and Preservation of Archived Materials and Cultural Heritage Artefacts

Nuclear Security

- Nuclear Security for Research Reactors and Associated Facilities
- Improved Assessment of Initial Alarms from Radiation Detection Instruments
- Development of Nuclear Security Culture Enhancement Solutions

Table A26. Coordinated research projects completed in 2015

Nuclear Power

- Continued Operations Beyond 60 Years in Nuclear Power Plants

Nuclear Fuel Cycle and Materials Technology

- Benchmarking of Structural Materials Preselected for Advanced Nuclear Reactors
- Evaluation of Conditions for Hydrogen Induced Degradation of Zirconium Alloys during Fuel Operation and Storage

Nuclear Science

- Spectroscopic and Collisional Data for Tungsten from 1 eV to 20 keV
- Development of a Reference Database for Particle Induced Gamma Ray Emission (PIGE) Spectroscopy
- Light Element Atom, Molecule and Radical Behaviour in the Divertor and Edge Plasma Regions
- Improved Instrumentation and Control (I&C) Maintenance Techniques for Research Reactors Using the Plant Computer

Food and Agriculture

- Isolation and Characterization of Genes Involved in Mutagenesis of Crop Plants
- Development of Molecular and Nuclear Technologies for the Control of Foot-and-Mouth Disease (FMD)
- Increasing the Efficiency of Lepidoptera SIT by Enhanced Quality Control
- Resolution of Cryptic Species Complexes of Tephritid Pests to Overcome Constraints to SIT Application and International Trade
- Development of Radiometric and Allied Analytical Methods to Strengthen National Residue Control Programmes for Antibiotic and Anthelmintic Veterinary Drug Residues
- Development of Generic Irradiation Doses for Quarantine Treatments
- Development of Irradiated Foods for Immunocompromised Patients and Other Potential Target Groups

Human Health

- Development of Quantitative Nuclear Medicine Imaging for Patient Specific Dosimetry
- Doctoral CRP on Quality Assurance of the Physical Aspects of Advanced Technology in Radiotherapy
- Clinical/Radiobiological Study on Viral Induced Cancers' Response to Radiotherapy, with Comprehensive Morbidity Assessment
- Altered Fractionation and Radiosensitisation in Head and Neck Cancer Radiotherapy
- Short Course Versus Standard Course Radiotherapy, in Elderly and/or Fragile Patients with Glioblastoma Multiform (GBM)
- Resource Sparing Curative Treatment for Rectal Cancer
- Stable Isotope Technique to Assess Human Milk Intake in Infants Living in Contaminated Areas
- Stable Isotope Technique in the Development and Monitoring of Nutritional Interventions for Infants and Children with Malaria, TB and Other Infectious Diseases

Water Resources

- Use of Environmental Isotopes in Assessing Water Resources in Snow, Glacier and Permafrost Dominated Areas under Changing Climatic Conditions
- Estimation of Groundwater Recharge and Discharge by Using the Tritium, Helium-3 Dating Technique

Radioisotope Production and Radiation Technology

- Radiation Curing of Composites for Enhancing their Features and Utility in Health Care and Industry

Management of Radioactive Waste

- Treatment of Irradiated Graphite to Meet Acceptance Criteria for Waste Disposal

Table A27. Publications issued in 2015

Nuclear Power

- Ageing Management for Nuclear Power Plants: International Generic Ageing Lessons Learned (IGALL) — IAEA Safety Reports Series No. 82
- ARCAL - Regional Strategic Profile for Latin America and the Caribbean (RSP) 2016-2021 — IAEA TECDOC Series No. 1763
- Basic Safety Principles for Nuclear Power Plants, 75-INSAG-3 (Rev.1) — INSAG Series No. 12 (in Russian)
- Climate Change and Nuclear Power — Non-serial Publication (in French)
- Climate Change and Nuclear Power 2015 — Non-serial Publication
- Country Nuclear Power Profiles — Non-serial Publication
- Design Provisions for Withstanding Station Blackout at Nuclear Power Plants — IAEA TECDOC Series No. 1770
- Energy, Electricity and Nuclear Power Estimates for the Period up to 2050 — Reference Data Series No. 1
- Establishing the Safety Infrastructure for a Nuclear Power Programme — IAEA Safety Standards Series No. SSG-16 (in Russian)
- Fast Reactors and Related Fuel Cycles: Safe Technologies and Sustainable Scenarios (FR13) — Proceedings Series
- Indicators for Nuclear Power Development — IAEA Nuclear Energy Series No. NG-T-4.5
- INPRO Methodology for Sustainability Assessment of Nuclear Energy Systems: Environmental Impact from Depletion of Resources — IAEA Nuclear Energy Series No. NG-T-3.13
- Integrated Nuclear Infrastructure Review (INIR) Missions: The First Six Years — IAEA TECDOC Series No. 1779
- Maintaining the Design Integrity of Nuclear Installations Throughout Their Operating Life — INSAG Series No. 19 (in Russian)
- Management of Operational Safety in Nuclear Power Plants — IAEA Services Series No. 21 (in Russian)
- Nuclear Power in Countries with Limited Electrical Grid Capacities: The Case of Armenia — IAEA TECDOC Series No. 1778
- Nuclear Power Reactors in the World — Reference Data Series No. 2
- Operating Experience with Nuclear Power Stations in Member States in 2014 — 2015 Edition (CD-ROM)
- Plant Life Management Models for Long Term Operation of Nuclear Power Plants — IAEA Nuclear Energy Series No. NP-T-3.18
- PRIS-WEDAS — User's Manual to the Web Enabled Data Acquisition System for PRIS — Computer Manual Series No. 23
- Stakeholder Involvement in Nuclear Issues — INSAG Series No. 20 (in Russian)
- Technical Challenges in the Application and Licensing of Digital Instrumentation and Control Systems in Nuclear Power Plants — IAEA Nuclear Energy Series No. NP-T-1.13

Nuclear Fuel Cycle and Materials Technology

- Decommissioning of Facilities — IAEA Safety Standards Series No. GSR Part 6 (in Russian)
- Decommissioning of Facilities — IAEA Safety Standards Series No. GSR Part 6 (in Chinese)
- Decommissioning of Pools in Nuclear Facilities — IAEA Nuclear Energy Series No. NW-T-2.6
- Evaluation of Conditions for Hydrogen Induced Degradation of Zirconium Alloys during Fuel Operation and Storage — IAEA TECDOC Series No. 1781
- Management of Spent Fuel from Nuclear Power Reactors — Proceedings Series

- Modelling of Water Cooled Fuel Including Design Basis and Severe Accidents — IAEA TECDOC Series No. 1775 (CD-ROM)
- Potential Interface Issues in Spent Fuel Management — IAEA TECDOC Series No. 1774
- Quality and Reliability Aspects in Nuclear Power Reactor Fuel Engineering — IAEA Nuclear Energy Series No. NF-G-2.1
- Safety Assessment for the Decommissioning of Facilities Using Radioactive Material — IAEA Safety Standards Series No. WS-G-5.2 (in Russian)
- Spent Fuel Performance Assessment and Research — IAEA TECDOC Series No. 1771
- Techno-economic Comparison of Geological Disposal of Carbon Dioxide and Radioactive Waste — IAEA TECDOC Series No. 1758
- Treatment of Residual Sodium and Sodium Potassium from Fast Reactors — IAEA TECDOC Series No. 1769

Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development

- Development and Implementation of a Process Based Management System — IAEA Nuclear Energy Series No. NG-T-1.3

Nuclear Science

- Development of a Reference Database for Ion Beam Analysis — IAEA TECDOC Series No. 1780
- Feasibility of Producing Molybdenum-99 on a Small Scale Using Fission of Low Enriched Uranium or Neutron Activation of Natural Molybdenum — IAEA Technical Reports Series No. 478
- Inventory of Radioactive Material Resulting from Historical Dumping, Accidents and Losses at Sea — IAEA TECDOC Series No. 1776
- Nanoscale Radiation Engineering of Advanced Materials for Potential Biomedical Applications — IAEA Radiation Technology Reports No. 5
- Nuclear Data Newsletter, Issues Nos 59 and 60, May and December 2015
- Performance Analysis Review of Thorium TRISO Coated Particles during Manufacture, Irradiation and Accident Condition Heating Tests — IAEA TECDOC Series No. 1761
- Research Reactor Benchmarking Database: Facility Specification and Experimental Data — IAEA Technical Reports Series No. 480
- Status of Accelerator Driven Systems Research and Technology Development — IAEA TECDOC Series No. 1766
- Training Guidelines in Non-destructive Testing Techniques — IAEA TECDOC Series No. 628/Rev. 3
- Use of Neutron Beams for Materials Research Relevant to the Nuclear Energy Sector — IAEA TECDOC Series No. 1773
- Utilization of Accelerator Based Real Time Methods in Investigation of Materials with High Technological Importance — IAEA Radiation Technology Reports No. 4

Environment

- Determining the Suitability of Materials for Disposal at Sea under the London Convention 1972 and London Protocol 1996: A Radiological Assessment Procedure — IAEA TECDOC Series No. 1759
- Environment Laboratories Newsletter, Vol. 1, Nos 1 and 2, January and December 2014
- Environment Laboratories Newsletter, Vol. 2, No. 1, Jan 2015
- IAEA-RML-2012-01 Proficiency Test for Determination of Radionuclides in Sea Water
- IAEA-RML-2013-01 Proficiency Test for Determination of Radionuclides in Sea Water
- IAEA-RML-2014-01 Proficiency Test for Determination of Radionuclides in Sea Water
- IAEA-RML-2014-02 Proficiency Test for Determination of Radionuclides in Sea Water

- Naturally Occurring Radioactive Material (NORM VII) — Proceedings Series
- Nutritional & Health Related Environmental Studies Newsletter, Nos 1 and 2, August and December 2015
- Policy and Strategies for Environmental Remediation — IAEA Nuclear Energy Series No. NW-G-3.1
- Radiotracer and Sealed Source Applications in Sediment Transport Studies — Training Course Series No. 59

Food and Agriculture

- Animal Production and Health Newsletter, No. 62, July 2015
- Food and Environmental Protection Newsletter Vol. 18, Nos 1 and 2, January and July 2015
- Insect Pest Control Newsletter No. 85, July 2015
- Manual of Good Practice in Food Irradiation — Technical Reports Series No. 481
- Plant Breeding and Genetics Newsletter, Nos 34 and 35, January and July 2015
- Soils Newsletter Vol. 38, No.1, July 2015

Human Health

- Aspectos Clínicos de la Garantía de Calidad en Radioterapia: Guía de Gestión de Calidad Clínica — IAEA Human Health Reports No. 14 (in Spanish)
- Basic Positioning and Immobilization in Radiotherapy: A Training Video — Training Course Series No. 41 (CD-ROM)
- Clinical PET/CT Atlas: A Casebook of Imaging in Oncology — IAEA Human Health Series No. 32
- Guidelines on Training, Examination and Certification in Digital Industrial Radiology Testing (RT-D) — Training Course Series No. 60
- IAEA Syllabus for the Education and Training of Radiation Oncologists Endorsed by the American Society for Radiation Oncology (ASTRO) and the European Society for Therapeutic Radiology and Oncology (ESTRO) — Training Course Series No. 36 (in Chinese)
- Implementation of High Dose Rate Brachytherapy in Limited Resource Settings — IAEA Human Health Series No. 30
- Nuclear Medicine Physics — Non-serial Publication
- Planning National Radiotherapy Services: A Practical Tool — IAEA Human Health Series No. 14 (in Russian)
- Quality Management Audits in Nuclear Medicine Practices—IAEA Human Health Series No. 33
- Radiation Curing of Composites for Enhancing Their Features and Utility in Health Care and Industry — IAEA TECDOC Series No. 1764
- Radiolabelled Autologous Cells: Methods and Standardization for Clinical Use — IAEA Human Health Series No. 5
- Radiopharmaceuticals for Sentinel Lymph Node Detection: Status and Trends—IAEA Radioisotopes and Radiopharmaceuticals Series No. 6
- Radiotherapy Facilities: Master Planning and Concept Design Considerations—IAEA Human Health Reports No. 10 (in Russian)
- Roles and Responsibilities, and Education and Training Requirements for Clinically Qualified Medical Physicists — IAEA Human Health Series No. 25 (in Russian)
- Setting Up a Radiotherapy Programme: Clinical, Medical Physics, Radiation Protection and Safety Aspects— Non-serial Publication (in Russian)
- SSDL Newsletter Issue No. 63, December 2014
- Stable Isotope Technique to Assess Intake of Human Milk in Breastfed Infants — IAEA Human Health Series No. 7 (in French)
- Staffing in Radiotherapy: An Activity Based Approach — IAEA Human Health Reports No. 13 (CD-ROM)

- The Transition from 2-D Brachytherapy to 3-D High Dose Rate Brachytherapy — IAEA Human Health Reports No. 12
- Worldwide Implementation of Digital Imaging in Radiology — IAEA Human Health Series No. 28

Water Resources

- New Technologies for Seawater Desalination Using Nuclear Energy — IAEA TECDOC Series No. 1753
- Use of Radiotracers to Study Surface Water Processes — IAEA TECDOC Series No. 1760

Radioisotope Production and Radiation Technology

- Yttrium-90 and Rhenium-188 Radiopharmaceuticals for Radionuclide Therapy — IAEA Radioisotopes and Radiopharmaceuticals Series No. 5

Emergency Preparedness and Response

- Accident Monitoring Systems for Nuclear Power Plants — IAEA Nuclear Energy Series No. NP-T-3.16
- Cytogenetic Dosimetry: Applications in Preparedness for and Response to Radiation Emergencies — EPR-Biodosimetry (in Chinese)
- IEC Information Newsletter Nos 49, 50, 51 and 52
- Lessons Learned from the Response to Radiation Emergencies (1945–2010) — EPR-Lessons Learned 2012 (in Arabic)
- Method for Developing a Communication Strategy and Plan for a Nuclear or Radiological Emergency — EPR-Communication Plan 2015
- Operating Experience from Events Reported to the IAEA Incident Reporting System for Research Reactors — IAEA TECDOC Series No. 1762
- Preparedness and Response for a Nuclear or Radiological Emergency — IAEA Safety Standards Series No. GSR Part 7
- Root Cause Analysis Following an Event at a Nuclear Installation: Reference Manual — IAEA TECDOC Series No. 1756
- The Fukushima Daiichi Accident — Non-serial Publication

Safety of Nuclear Installations

- Construction for Nuclear Installations — IAEA Safety Standards Series No. SSG-38
- Ground Motion Simulation Based on Fault Rupture Modelling for Seismic Hazard Assessment in Site Evaluation for Nuclear Installations — IAEA Safety Reports Series No. 85
- Instrumentation and Control Systems and Software Important to Safety for Research Reactors — IAEA Safety Standards Series No. SSG-37
- Key Practical Issues in Strengthening Safety Culture — INSAG Series No. 15 (in Russian)
- Methodology for Safety Assessment Applied to Predisposal Waste Management — IAEA TECDOC Series No. 1777
- Methodology for the Systematic Assessment of the Regulatory Competence Needs (SARCoN) for Regulatory Bodies of Nuclear Installations — IAEA TECDOC Series No. 1757
- Safety of Nuclear Fuel Cycle Facilities — IAEA Safety Standards Series No. NS-R-5 (Rev. 1) (in Chinese)
- Safety of Nuclear Fuel Cycle Facilities — IAEA Safety Standards Series No. NS-R-5 (Rev. 1) (in Arabic)
- Site Survey and Site Selection for Nuclear Installations — IAEA Safety Standards Series No. SSG-35

Radiation and Transport Safety

- Application of the Revised Provisions for Transport of Fissile Material in the IAEA Regulations for the Safe Transport of Radioactive Material — IAEA TECDOC Series No. 1768
- ARCAL - Perfil Estratégico Regional para América Latina y el Caribe (PER) 2016-2021 — IAEA TECDOC Series No. 1763 (in Spanish)
- Maintaining Knowledge, Training and Infrastructure for Research and Development in Nuclear Safety — INSAG Series No. 16 (in Russian)
- Managing Change in the Nuclear Industry: The Effects on Safety — INSAG Series No. 18 (in Russian)
- Model Regulations for the Use of Radiation Sources and for the Management of the Associated Radioactive Waste — IAEA TECDOC Series No. 1732 (in Spanish)
- Model Regulations for the Use of Radiation Sources and for the Management of the Associated Radioactive Waste — IAEA TECDOC Series No. 1732 (in Arabic)
- National Strategy for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources — IAEA Safety Standards Series No. SSG-19 (in French)
- Protection of the Public against Exposure Indoors due to Radon and Other Natural Sources of Radiation — IAEA Safety Standards Series No. SSG-32
- Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards — IAEA Safety Standards Series No. GSR Part 3 (in Russian)
- Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards — IAEA Safety Standards Series No. GSR Part 3 (in Chinese)
- Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards — IAEA Safety Standards Series No. GSR Part 3 (in Arabic)
- Radiation Protection in Medicine: Setting the Scene for the Next Decade — Proceedings Series
- Radiation Protection of Itinerant Workers — IAEA Safety Reports Series No. 84
- Radiation Safety of Gamma, Electron and X Ray Irradiation Facilities — IAEA Safety Standards Series No. SSG-8 (in Spanish)
- Schedules of Provisions of the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition) — IAEA Safety Standards Series No. SSG-33
- Security of Nuclear Material in Transport — IAEA Nuclear Security Series No. 26-G
- The Management System for Technical Services in Radiation Safety — IAEA Safety Standards Series No. GS-G-3.2 (in Russian)
- The Management System for the Safe Transport of Radioactive Material — IAEA Safety Standards Series No. TS-G-1.4 (in Russian)
- The Safe Management of Sources of Radiation: Principles and Strategies — INSAG Series No. 11 (in Russian)

Management of Radioactive Waste

- Classification of Radioactive Waste — IAEA Safety Standards Series No. GSG-1 (in Spanish)
- The Management System for the Disposal of Radioactive Waste — IAEA Safety Standards Series No. GS-G-3.4 (in Russian)
- The Management System for the Processing, Handling and Storage of Radioactive Waste — IAEA Safety Standards Series No. GS-G-3.3 (in Russian)

Nuclear Security

- Advances in Nuclear Forensics: Countering the Evolving Threat of Nuclear and Other Radioactive Material out of Regulatory Control — Proceedings Series

- Establishing the Nuclear Security Infrastructure for a Nuclear Power Programme — IAEA Nuclear Security Series No. 19 (in Arabic)
- Nuclear Forensics in Support of Investigations — IAEA Nuclear Security Series No. 2-G (Rev. 1)
- Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material out of Regulatory Control — IAEA Nuclear Security Series No. 21 (in Arabic)
- Risk Informed Approach for Nuclear Security Measures for Nuclear and Other Radioactive Material out of Regulatory Control — IAEA Nuclear Security Series No. 24-G
- Safety and Security of Radioactive Sources: Maintaining Continuous Global Control of Sources throughout Their Life Cycle — Proceedings Series
- Security of Nuclear Information — IAEA Nuclear Security Series No. 23-G
- Use of Nuclear Material Accounting and Control for Nuclear Security Purposes at Facilities — IAEA Nuclear Security Series No. 25-G

Nuclear Verification

- Safeguards Implementation Practices Guide on Establishing and Maintaining State Safeguards Infrastructure — IAEA Services Series No. 31

Legislative Assistance

- Milestones in the Development of a National Infrastructure for Nuclear Power — IAEA Nuclear Energy Series No. NG-G-3.1 (Rev. 1)

Table A28. Technical Cooperation training courses held in 2015

Assessment and Management of Marine and Terrestrial Environments

- NTC on Radiological Environmental Impact Assessment Including Training on the Tool RESRAD
Brazil
- NTC on Radiological Environmental Impact Assessment of NCF, Including Training on MARSSIM, Licensing and Regulatory Issues
Brazil
- Practical Training Course on Planning and Implementation of Nuclear Facility Decommissioning and Remediation of Radioactively Contaminated Sites
United States of America
- RTC on Environmental Monitoring of Radionuclides and Assessment of Exposures to the Public
China
- NTC on Early Warning Environmental Radiation Monitoring (EWERM) Training
Austria
- NTC on Environmental Monitoring and Sample Analysis
Mauritania
- RTC on Introduction to Pollution Source Identification
Côte d'Ivoire
- RTC on Application of Mathematical Models for the Transport of NORM and Trace Elements in the Marine Environment
Austria
- RTC No. 3 Environmental Remediation Project and Programme Management for Uranium Production Legacy Sites
Russian Federation
- RTC No. 4 Environmental Remediation Project and Programme Management for Uranium Production Legacy Sites
Russian Federation
- RTC on Bioindication of Pesticide Contamination in Aquatic and Terrestrial Environments Using Radiometric Techniques
Brazil

Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development

- 2015 WNU Summer Institute
Sweden
- International School of Nuclear Law
France
- 5th Session of Nuclear Law Institute
Austria
- RTC on the Development of e-Learning Courses for Teachers
Chile
- RTC Train-the-Trainers for Radiation Protection Officers
Portugal
- RTC Train-the-Trainers on Regulatory Oversight of Licensees' Human and Organizational Factors
Republic of Moldova
- Regional Train-the-Trainers Course on Radiation Protection in Diagnostic and Interventional Radiology
Russian Federation

Emergency Preparedness

- International School on Radiation Emergency Management
Italy
- NTC on Medical Response for Radiological Accidents
Bahrain
- National Train-the-Trainers Course on Emergency Preparedness and Response (EPR) for First Responders
Nigeria
- NTC on Emergency Preparedness and Response (EPR) for First Responders
Sudan
- Regional Train-the-Trainers Course on Emergency Preparedness and Response (EPR) for First Responders
Sudan
- RTC on Medical Preparedness and Response to Radiation Emergencies
Namibia
- NTC on Emergency Preparedness and Response (EPR) for First Responders
Botswana
- NTC on Emergency Preparedness and Response (EPR) for First Responders
Ghana
- NTC on Emergency Preparedness and Response (EPR) for First Responders
Madagascar
- RTC: School on Radiation Emergency Management
Brazil
- NTC for First Responders in Radiation Emergencies
Honduras
- NTC on First Response to Radiological Emergencies
Bolivia, Plurinational State of
- NTC on Medical Response to Radiation Emergencies
Paraguay
- NTC on Basic Application of Biodosimetry in Case of Radiation Emergencies
Costa Rica
- NTC on Actions to Protect the Public in an Emergency due to Severe Conditions at a Nuclear Power Plant
Romania

Executive Management, Policy Making and Coordination

- Interregional Training Course on Technical Requirements to Fulfil National Obligations in Terms of
International Legal Instruments
Tunisia
- RTC on Organization, Staffing and Competency of the Regulatory Body
Ethiopia
- International Workshop for Radiation Safety Reviewers in Integrated Regulatory Review Service Missions
Austria
- Training Course for Radiation Safety Reviewers in Integrated Regulatory Review Service Missions
Austria
- Second School for Drafting Regulations on Radiation Safety for Asia and the Pacific
Austria
- International Workshop for Radiation Safety Reviewers in Integrated Regulatory Review Service Missions
Austria

- RTC on Management and Organization for Regulatory Bodies
Guatemala
- RTC on Radiation Safety Reviewers in Integrated Regulatory Review Service Missions
Austria
- NTC on Regulatory Enforcement
South Africa
- NTC on Updating the Safety Requirements in Order to Transpose the New BSS Requirements
Romania

Food and Agriculture

- NTC on Artificial Insemination in Small Ruminants
Burkina Faso
- National Training for Development of Analytical Methods and Applications for Isotopic Techniques in GHG and C-sequestration
Chile
- National Training on Green House Gases (GHA) and Carbon Sequestration
Costa Rica
- NTC on Serological and Molecular Techniques for the Diagnosis of Transboundary Animal Diseases
Eritrea
- Use of the Sterile Insect and Related Techniques for the Area-wide Integrated Management of Plant, Animal and Human Insect Pests
Guatemala
- Use of the Sterile Insect and Related Techniques for the Area-wide Integrated Management of Plant, Animal and Human Insect Pests
Mexico
- NTC on Quality Assurance on Molecular Biology, General Principles: Case of Rabies Diagnosis
Morocco
- NTC on Selection and Evaluation of Mutant Lines for Drought Tolerance
Namibia
- RTC on Fruit Fly Biocontrol in West Africa
Kenya
- RTC on Fruit Fly Monitoring and Suppression Including MAT and Release of Sterile Fruit Flies
Mauritius
- RTC on Fallout Radionuclides Data Treatment and Interpretation with Special Focus on the Cs-137 Technique for Assessing Soil Degradation
Morocco
- Regional (AFRA) Training Course on Mutation Induction on Vegetatively Propagated Crops
Morocco
- Regional (AFRA) Training Course on Induced Mutation in Seed Propagated Crops
Ghana
- Regional (AFRA) Training Course on Internal Auditing of Food Safety Laboratories
Zimbabwe
- Regional (AFRA) Training Course on Basic Troubleshooting of Analytical Tools Used in Food and Environmental Safety Laboratories
Sudan
- Regional (AFRA) Training Course on Rapid Field Diagnostic Detection of Vector Borne Diseases
Cameroon

- Regional (AFRA) Training Course on Application of Herd Management Strategies for Improved Production
United Republic of Tanzania
- Regional (AFRA) Training Course on Vector Trapping and Identification
Kenya
- RTC on Free Open Source Software for GIS and Data Management Applied to Tsetse and Trypanosomiasis
Control Programmes (French Edition)
Austria
- RTC on the Use of Population Genetics and GIS to Identify Isolated Tsetse Populations
Ethiopia
- Regional (AFRA) Training Course on the Use of Oxygen-18 for Separation of Evaporation into Soil
Evaporation and Crop Transpiration, and AquaCrop Simulation Modelling
Morocco
- Refresher Course on the Rapid and Confirmatory Diagnosis of Avian Influenza H5N1
Austria
- RTC on Integrated Soil Conservation Practices to Mitigate Soil Erosion and the Role of Nuclear Techniques
Sri Lanka
- RTC on Phenotyping and Genotyping of Mutants for Abiotic Stresses in Cereals
Austria
- RTC on Diagnosis and Epidemiology of Peste Des Petits Ruminants (PPR) and African Swine Fever (ASF)
Bangladesh
- RTC on Artificial Insemination in Sheep and Goats
Italy
- RTC on the Strategy and Evaluation of Trials on Aedes Mosquito Population Suppression Using the Sterile
Insect Technique
Singapore
- RTC on Nitrogen Management Using Isotopic Techniques
Austria
- RTC on Isotope and Geochemical Applications in Flood Risk Mitigation
Thailand
- RTC on the Use of FRN, CSSI and Related Isotopic Techniques Towards Flood Risk Mitigation and Post-
Flood Rehabilitation Efforts in Asia
China
- Early Detection of Animal Diseases in Post-flooding Environment, with Emphasis on Water Borne and
Vector Borne Diseases
Austria
- RTC on the Application of Mutation Breeding and Screening of Target Traits in Bioenergy Crops
China
- RTC on Free Open Source Software for GIS and Data Management Applied to Fruit Flies in the Balkans and
the Eastern Mediterranean
Austria
- RTC on Quarantine and Pest Risk Analysis Applied to Fruit Flies in the Balkans and the Eastern
Mediterranean
Romania
- RTC on the Use of N-15 Based Techniques for Quantifying Biological Nitrogen Fixation (BNF) and
Nitrogen Use Efficiency (NUE)
Brazil
- RTC on the Diagnosis of Disease Due to the New World Screw Worm
Panama

- NTC on Soil Salinity Management
Seychelles
- NTC on Phenotypic and Genotypic Screening of Mutant Lines for Biotic and Abiotic Stresses
Zimbabwe

Human Health

- NTC on Design and Analysis of Multi-environment Trials with Applications in Field and Screenhouse
Drought/Pet Trials
Zimbabwe
- NTC (PhD and Postdoctoral Level) on Ion Sources and Beam Transport
Argentina
- NTC on Cyclotron Physics and Technology (Including Technical and Organizational Issues of a Proton
Therapy Facility)
Argentina
- Gastro-intestinal Tract (GIT) Cancers
Bangladesh
- Paediatric and CNS Tumours
Bangladesh
- NTC for Radiotherapy Technologists of Bangladesh
Bangladesh
- NTC on Radiotherapy Dosimetry and Quality Assurance
Bangladesh
- NTC Standardization of Anthropometric and Skinfold Measurements and on Body Composition
Dominican Republic
- Interregional Training Course on Quality Assurance in Radiation Therapy
Israel
- NTC on Treatment Planning for Cobalt-60 Teletherapy
Kazakhstan
- NTC on Intensity Modulated Radiation Therapy for Medical Physicists
Kazakhstan
- NTC for Oncology Nurses on IGBT, with Special Emphasis on Gynaecology, Prostate, Breast, and Head and
Neck Cancers
Malaysia
- NTC for Oncology Nurses on IGBT, with Special Emphasis on Gynaecology, Prostate, Breast, and Head and
Neck Cancers
Malaysia
- NTC on Brachytherapy for Prostate Cancer
Malaysia
- National Train-the-Trainers Course on Good Practices in Mammography, Radiography and Tomography
Paraguay
- NTC on Radiation Protection in Radiodiagnosis
Paraguay
- Regional (AFRA) Training Course on Medical Physics Aspects of HDR/LDR Brachytherapy
Tunisia
- Regional (AFRA) Training Course on QUATRO Audits for Medical Physicists
Ghana
- Regional (AFRA) Training Course on Gynaecological Malignancies
Tunisia

- Regional (AFRA) Training Course on Radiobiology for Radiation Oncologists
Sudan
- Regional (AFRA) Training Course for Oncology Nurses
Zimbabwe
- RTC (AFRA) on Field Implementation of Assessing Vitamin A Status Using the Stable Isotope Dilution Technique and on Measurement of Inflammation Markers
Cameroon
- Regional (AFRA) Training Course on Dose Reference Levels in Nuclear Medicine and Diagnostic Radiology
Sudan
- NTC on Quality Assurance and Audits in Diagnostic Imaging (GHA)
Ghana
- Regional (AFRA) Training Course on Overview of Radiopharmacy Regulation Requirements (for Regulators)
Egypt
- Regional (AFRA) Training Course on In-depth Dossier Assessment
Zimbabwe
- IAEA/RCA RTC on 3-D Image Guided Brachytherapy for Cervical Cancer (Advanced Course)
Singapore
- RTC: An Update on Advanced Technologies in Radiotherapy
Japan
- RTC on Clinical Application of SBRT in Spine and Genitourinary Cancers
Australia
- IAEA/RCA RTC on Nuclear Medicine Techniques for Thyroid Cancer, Bone Pain Palliation and Peptide Receptor Radioisotope Therapy for Neuro Endocrine Tumours
Philippines
- IAEA/RCA RTC on Radionuclide Therapies with Special Emphasis on Iodine-131 and Rhenium-188
India
- RTC on Basics of IMRT
Australia
- RTC on Intensity Modulated Radiation Therapy for Head and Neck Cancers and Brain Tumours
India
- RTC on Data Management, Analysis and Interpretation for Assessing Human Milk Intake
Indonesia
- RTC on the Use of Nuclear Medicine Techniques in the Treatment of Thyroid Diseases: Basic and Emerging Practices
China
- RTC on Principles and Practice of Paediatric Nuclear Medicine and Application of Radionuclide Techniques in Paediatric Nephro-urology Practice
Sri Lanka
- RTC on Nuclear Oncology Using SPECT/CT and PET/CT (Advanced Course)
United Arab Emirates
- RTC on Nuclear Cardiology Using SPECT/CT and PET/CT (Basic Course)
United Arab Emirates
- RTC on Radiation Safety, QA/QC in SPECT/CT, PET/CT, Cyclotron and Radiopharmaceuticals II (QUANUM Processes)
Austria
- RTC on the Role of Hybrid Imaging Technologies in Nuclear Oncology — Basic Concepts and Applications
Myanmar

- RTC on Clinical Application of Advanced Hybrid Imaging Techniques in Oncology
Thailand
- RTC on Assessment of Body Composition and Physical Activity
Philippines
- RTC on Basics of Clinical PET/CT
Hungary
- RTC on Hybrid Imaging: SPECT/CT and PET/CT
Serbia
- IAEA/EANM Theoretical Learning Course on Imaging in Infection and Inflammation
Austria
- IAEA/EANM Advanced Learning Course on PET/CT in Oncology
Austria
- IAEA/EANM Practical Learning Course on Imaging in Infection and Inflammation
Austria
- IAEA/EANM Therapy and Basic Dosimetry Learning Course
Austria
- IAEA/EANM Learning Course on Myocardial Perfusion Imaging/Gated SPECT
Austria
- RTC on Management of Thyroid and Parathyroid Diseases
Cyprus
- RTC on QA/QC for Radiographers Working in Diagnostic Radiology
Czech Republic
- RTC on QA/QC Procedures for Planar Imaging
Croatia
- RTC on Dosimetry in Diagnostic Radiology
Hungary
- ESTRO Teaching Course on Evidence Based Radiation Oncology — A Clinical Refresher Course with a Methodological Basis
Russian Federation
- Target Volume Determination — From Imaging to Margins
Hungary
- Best Practice in Radiation Oncology: A Four Phase Project to Train RTT Trainers: Part II — Train the RTT (Radiation Therapists) Trainers, Consolidation Phase
Austria
- RTC on Physics for Clinical Radiotherapy
Russian Federation
- RTC on Commissioning and Quality Assurance for Radiotherapy Treatment Planning Systems
Russian Federation
- RTC on Strategy for Radiotherapy Modernization and Development: Equipment and Staffing
Russian Federation
- RTC on Brachytherapy Physics
Russian Federation
- ESTRO Teaching Course on Dose Modelling and Verification for External Beam Radiotherapy
Spain
- IAEA/ESTRO Teaching Course on IMRT and Other Conformal Techniques in Practice
Belgium

- Regional Hands-on Training Course on IMRT, VMAT and SABR Treatment Planning
Netherlands
- Training Course for Physicians and Medical Physicists in IMRT and IGRT
Brazil
- RTC on Special Techniques (Radiosurgery, Stereotactic Radiosurgery and Body Stereotactic Radiosurgery)
for Physicians and Medical Physicists
Venezuela, Bolivarian Republic of
- RTC on Selection, Purchase, Acceptance and Commission of Radiotherapy
United States of America
- RTC on Modern Radiotherapy Using Linear Accelerators
United States of America
- RTC on the Implementation of the Guideline for Biological and Dosimetric Studies with Therapeutic
Radiopharmaceuticals
Cuba
- RTC for Nuclear Medicine and Referring Physicians in the Clinical Applications of Diagnostic and
Therapeutic Radionuclide Techniques with Emphasis on Lymphomas
Uruguay
- RTC for Nuclear Medicine and Referring Physicians in the Appropriate Use of Diagnostic Imaging and
Radionuclide Therapies with Special Focus on Clinical Applications
Brazil
- NTC for Oncology Nurses in Zimbabwe
Zimbabwe
- NTC on Clinical Dosimetry of Diagnostic and Therapeutic Procedures in Nuclear Medicine
Mexico
- RTC on Enhancing Capacity of National Monitoring Teams for Diagnosis of Ebola Virus Disease (EVD)
under High Bio-safety Conditions
Cameroon
- RTC on Enhancing Capacity for Diagnosis of Ebola Virus Disease (EVD) by Molecular Methods
Uganda
- NTC on PET/CT Radiotherapy Planning for NSCLC and CNS Tumours
Slovakia
- NTC on Radiation Protection in Diagnostic Radiology and Nuclear Medicine
Bosnia and Herzegovina
- NTC on Application of the Risk Matrix Approach in Radiotherapy
Colombia
- Basic Training on In Situ Gamma Spectrometry
Switzerland
- RTC on Radiation Protection for Vascular Surgeons
Slovenia
- Training Course on Implementation of the IAEA Safety Guide on Radiation Protection and Safety in Medical
Uses of Ionizing Radiation
Austria
- NTC ELS on Risk Analysis and Prevention of Accidental Exposures in Radiotherapy
El Salvador
- RTC on Radiation Protection Programmes in Interventional Cardiology and Radiology Including Prevention
of Radiation Injuries
Peru

- RTC on Radiation Protection in PET and SPECT/CT for Medical Specialists in Nuclear Medicine and Radiology
Uruguay
- NTC on Radiation Protection in Computed Tomography
Nicaragua
- NTC on Radiation Protection in X Ray Guided Interventions
Mexico

Management of Radioactive Waste

- Regional (AFRA) Training Course on Management of Low Level Radioactive Waste Including Conditioning Cat. 3-5 DSRS (English)
Morocco
- Regional (AFRA) Training Course on Management of Low Level Radioactive Waste Including Conditioning Cat. 3-5 DSRS (French)
Morocco
- Regional (AFRA) Training Course on Management of Low Level Radioactive Waste Including Conditioning Cat. 3-5 DSRS (French)
Morocco
- NTC on Plasma Processing of Radioactive Waste: Engineering, Flue Gas and Solid Wastes Treatment
Argentina
- RTC on Practical Aspects of Information and Records Management for Control of Disused Sealed Radioactive Sources
Jordan
- NTC on Safety of NORM Residue Management
United Republic of Tanzania
- National Workshop on Control of Radioactive Material Inadvertently Incorporated into Scrap Metal and the Semi-finished Products of the Metal Recycling Industries
South Africa
- Regional Workshop on Management Options for Disused Sealed Radioactive Sources of Category 3-5, Including a Practical Demonstration of Conditioning Procedures
Philippines

Management of Technical Cooperation for Development

- RTC on Quality Management Systems for Technical Services
Lithuania

Nuclear Fuel Cycle and Materials Technologies

- RTC on Authorization and Inspection of Uranium Mining and Milling Activities
Namibia

Nuclear Power

- NTC on Understanding the Physics and Technology of Advanced Passive Safe Water Cooled Nuclear Reactors Using Basic Principles Simulators
Chile
- NTC on Practical and Theoretical Training on Level-1 PSA for Internal Initiating Events
Algeria
- NTC on Energy Demand Analysis (Application of the IAEA's tool MAED)
Benin
- Interregional Training Course on Integrated Management Systems and Developing of the Safety Culture
United States of America
- Interregional Training Course on Engineering Procurement and Construction and Pre-construction/Construction Management for a Nuclear Power Programme
China
- Interregional Training Course on Understanding the Physics and Technology of Water Cooled Reactors through the Use of Basic Principle Simulators
United States of America
- NTC on Energy Supply System Analysis and Planning Using IAEA's Model MESSAGE
Lesotho
- NTC on Energy Supply System Analysis and Planning Using IAEA's Model MESSAGE
The former Yugoslav Republic of Macedonia
- NTC on Neutron Activation Analysis Optimization Using the Compton Suppression System
Mexico
- NTC on Assessment of Environmental Impacts of Future Power Projects Applying IAEA's SIMPACTS Model
Nicaragua
- NTC on Policy, Environmental and Regulatory Aspects of Uranium/Radioactive Minerals Exploration and Mining
Paraguay
- NTC on Health and Safety in the Industry
Paraguay
- NTC on Geology, Geophysics and Geochemistry for Discovery and Evaluation of Uranium Deposits
Paraguay
- Subregional (AFRA) Training Course to Develop Energy Supply Models for Island and Small and Isolated Countries (Application of the IAEA's Model MESSAGE)
Mauritius
- RTC on Uranium — From Exploration to Production
Uganda
- RTC on United Nations Framework Classification 2009 for Evaluation of Uranium and Thorium Resources and to Leverage Transparent and Effective Communications
Egypt

- School of Nuclear Energy Management
United Arab Emirates
- RTC on Providing Decision Support for NP Planning and Development (Mentoring)
Japan
- RTC on Fire Protection Programme and Experiences in Nuclear Power Plants
Slovenia

Nuclear Science

- Regional (AFRA) Training Course on Maintenance of CT Scanners
Morocco
- Regional (AFRA) Training Course on Development of Nuclear Instruments Using Open Source
Microcontroller Platform
Egypt
- Regional (AFRA) Training Course on MEDISO Gamma Camera
Hungary
- Regional (AFRA) Training Course on Interfacing Sensors to Modern Nuclear Instruments through PLCs
Ethiopia
- National (AFRA) Training Course on Tango Distributed Control System
Tunisia
- National (AFRA) Training Course on the Use of Programmable Logic Controllers for Developing and
Refurbishing Nuclear and Related Instruments
Ghana
- Regional (AFRA) Training Course on Gamma Counters, Dose Calibrators and Gamma Cameras (Ecam)
Ghana
- NTC on Root Cause Analysis and Human Performance for Research Reactors
Egypt
- NTC on Effective Utilization of Programmable Devices in Repairing, Refurbishing and Developing Nuclear
Instrumentation
Nigeria
- NTC on IAEA General Safety Standard GSR-3: The Management System for Facilities and Activities
Algeria
- National (AFRA) Training Course on Digital Pulse Processing in Nuclear Spectroscopy
Kenya
- RTC on Recent Developments in Irradiation Technology for CH Preservation and Restoration for Junior
Specialists
Romania

Nuclear Security

- NTC on International Legal Instruments and National Legislation Covering Nuclear Safety, Nuclear Security, Safeguards and Civil Liability for Nuclear Damage
South Africa
- NTC on the Implementation of National Requirements Related to Safety, Security and Non-Proliferation
United States of America

Radiation and Transport Safety

- RTC on Safe Transport of Radioactive Material
South Africa
- RTC on Safe Transport of Radioactive Material
Morocco
- Regional Train-the-Trainers Course on Transportation Safety and the Compliance Assurance Regime of Radioactive Material
Philippines

Radioisotope Production and Radiation Technology

- Interregional Training Course on the Practical Aspects of the Production of Molybdenum-99 by the Neutron–Gamma Reaction
India
- Regional (AFRA) Training Course on Cleaner and Safer Management of Industrial Processes — Column Scanning Applications
Austria
- RTC on Advanced Characterization Methods of Grafted Polymeric Matrices
Malaysia
- IAEA/RCA RTC on Application and Up Scaling of Radiation Grafting for Environmental and Industrial Applications
China
- IAEA/RCA RTC on DIR and Industrial CT for Trainers
Malaysia
- IAEA/RCA RTC on Applications of DR and CT to Metal, Non-metal and Composite Materials
Bangladesh
- RTC on Dosimetry at Electron Beam Facilities
Poland

Safety of Nuclear Installations

- NTC on Assessment of Occupational Exposure due to Intakes of Radionuclides
China
- NTC on Radiological Assessment for NORM in Oil and Gas Industries
Bahrain
- NTC on Radiation Protection and Safety
Benin
- NTC on Basic Professional Training on Nuclear Safety for ENRRA Staff
Egypt
- RTC on the Quality Management System in the Assessment and Control of Occupational Exposure
Botswana
- NTC on Occupational Radiation Protection in NORM Industries
Guatemala

- NTC on Radiation Protection Programmes
Honduras
- NTC on Safety Culture Self-assessment — Module 1
Mexico
- NTC on Safety Culture Self-assessment — Module 2
Mexico
- Postgraduate Specialization Training Course on Radiation Protection and Safety of Radiation Sources
Argentina
- Regional Postgraduate Specialization Course of Studies on Nuclear Safety
Argentina
- RTC on Occupational Radiation Protection in NORM Industries
Czech Republic
- Postgraduate Educational Course on Radiation Protection and the Safety of Radiation Sources (PGEC)
Greece
- Postgraduate Educational Course in Radiation Protection and the Safety of Radioactive Sources
Malaysia
- RTC on Technology 2: Remediation Design and Long Term Performance Assessment
Austria

Water Resources

- NTC: Application of Isotopes in Hydrology and Water Projects in Georgia
Georgia
- Advanced Training on Receptor Binding Assay Method for the Monitoring and the Quantification of Lipophilic Brevetoxins in Fish and Shellfish Samples
Oman
- RTC on Biomonitoring and Trend Assessment, Including Legislation/Regulation Requirements: Use of Biota and Sediment
Nigeria
- Regional Training Workshop on Pollution and Salinization of Groundwater
Ghana
- RTC on Handling and Processing Hydrochemical and Isotopic Data Using GIS Tools (Intermediate Level)
Austria
- RTC on Benthic and Planktonic Phytoplankton Collection and Identification for Regulatory Application
Morocco
- Regional (AFRA) Training Course on Isotope in Contamination Studies and Tracing of Movement of Pollutants
Benin
- NTC on Application of Isotope Hydrology in Water Resources Protection
United Republic of Tanzania
- RTC on Isotope and Chemical Data Interpretation for Water Resources Assessment
Jordan
- RTC on Operation Aspects of Laser Spectroscopy Units for Latin America
Austria
- RTC on Scientific Communication
Argentina
- RTC on Modelling
Chile

- RTC on Ciguatera Fish Poisoning (CFP) Field Monitoring and Toxin Data Management
Dominican Republic
- RTC on Ocean Acidification Assessment
Mexico

Table A29. Relevant Agency web sites

Public web site

<http://www.iaea.org/>

Nuclear Power

Nuclear energy

<http://www.iaea.org/OurWork/ST/NE/Main/>

Nuclear power

<http://www.iaea.org/NuclearPower/>

Nuclear power technology development

<http://www.iaea.org/NuclearPower/Technology/home.html>

Nuclear power engineering

<http://www.iaea.org/NuclearPower/Engineering/home.html>

Nuclear energy knowledge resources

<http://www.iaea.org/inis/>

INPRO

<http://www.iaea.org/INPRO/>

Planning and economic studies

<https://www.iaea.org/OurWork/ST/NE/Pess/index.html>

International Nuclear Information System and Nuclear Knowledge Management

<http://www.iaea.org/inis/>

Nuclear energy databases

<http://www.iaea.org/OurWork/ST/NE/Main/databases.html>

Nuclear Fuel Cycle and Materials Technologies

Nuclear fuel cycle and waste technology

<http://www.iaea.org/OurWork/ST/NE/NEFW/home.html>

Integrated Nuclear Fuel Cycle Information System (iNFCIS)

<https://infcis.iaea.org/>

Nuclear Science

Portal for medical related nuclear data

<https://www-nds.iaea.org/medportal/>

Research Reactor Database

<http://nucleus.iaea.org/RRDB/RR/ReactorSearch.aspx?rf=1>

Information on ageing related operating experience from research reactors around the world (available to research reactor operators)

<http://www.iaea.org/OurWork/ST/NE/NEFW/Technical-Areas/RRS/operation-maintenance.html>

Nuclear Applications

Joint FAO/IAEA Programme on Nuclear Techniques in Food and Agriculture

<http://www-naweb.iaea.org/nafa/index.html>

Physical and chemical sciences

<http://www-naweb.iaea.org/napc/ih/index.html>

Food and Agriculture

Agency managed database for officially released mutant varieties

<http://mvgs.iaea.org/>

Human Health

Programme of Action for Cancer Therapy (PACT)

<http://cancer.iaea.org/index.asp>

Distance Assisted Training on-line (DATOL)

<http://nucleus.iaea.org/HHW/Technologists/NuclearMedicineTech/Educationalresources/DAT/index.html>

Water Resources

Isotope measurements from non-Agency projects on rivers and groundwater (available to Member States)

<http://www-naweb.iaea.org/napc/ih/index.html>

Environment

Reference material web site

<http://nucleus.iaea.org/rpst/index.htm>

Incident and Emergency Preparedness and Response

Incident and Emergencies, main page:

<http://www-ns.iaea.org/tech-areas/emergency/>

Unified System for Information Exchange in Incidents and Emergencies

<https://iec.iaea.org/usie/actual/LandingPage.aspx>

Radiation and Transport Safety

Radiation Safety Information Management System (RASIMS)

<http://rasims.iaea.org/>

Radiation safety

<http://rpop.iaea.org/RPoP/RPoP/Content/index.htm>

Radiation, transport and waste safety

<http://www-ns.iaea.org/home/rtws.asp>

Nuclear installation safety

<http://www-ns.iaea.org/home/nis.htm>

Safeguards

<http://www.iaea.org/safeguards/index.html>

Management of Technical Cooperation for Development

www.iaea.org/technicalcooperation

Technical Cooperation Programme Management Online Tools

Programme Cycle Management Framework

<http://pcmf.iaea.org/>

InTouch

<http://intouch.iaea.org/>

Standards, Guides and Conventions

International standards, guides and codes

<http://www.iaea.org/Publications/Standards/index.html>

International conventions and agreements

<http://www.iaea.org/Publications/Documents/Conventions/index.html>

Legal Assistance

<http://ola.iaea.org/ola/index.html>

Table A30(a). Number and types of facilities under Agency safeguards by State as of 31 December 2015

State ^a	Power reactors	Research reactors and critical assemblies	Conversion plants	Fuel fabrication plants	Reprocessing plants	Enrichment plants	Separate storage facilities	Other facilities	Total
Algeria		2	1	1				1	5
Argentina	4	7	4	3		3	6	7	34
Armenia	2						1		3
Australia		2					1	2	5
Austria		1							1
Bangladesh		1							1
Belarus	2	1					1		4
Belgium	6	4		3			5	5	23
Brazil	3	6	1	1		5	1	5	22
Bulgaria	3	1					2		6
Canada	6	9	2	5			12		34
Chile		2	1	1					4
China	1	1				1			3
Colombia		1							1
Czech Republic	3	3					4	2	12
Democratic Republic of the Congo		1							1
Denmark		1					2	1	4
Egypt		2		2				3	7
Estonia		1							1
Finland	6	1					2	1	10
France				1	1	1			3
Georgia		1						2	3
Germany	24	13		1	1	1	24	6	70
Ghana		1							1
Greece		1							1
Hungary	2	2					2		6
India	7			2			2		11
Indonesia		3		2			1	1	7
Iran, Islamic Republic of	2	5	2	2		3	1	3	18
Iraq							1		1
Israel		1							1
Italy	5	7		1	2		6	3	24
Jamaica		1							1
Japan	63	20	2	8	6	3	8	15	125
Jordan		1							1
Kazakhstan	1	4		1			5		11
Korea, Republic of	32	3		1			2	7	45
Latvia		1							1

State ^a	Power reactors	Research reactors and critical assemblies	Conversion plants	Fuel fabrication plants	Reprocessing plants	Enrichment plants	Separate storage facilities	Other facilities	Total
Libya		1						1	2
Lithuania	1						3		4
Malaysia		1							1
Mexico	2	1	1						4
Morocco		1							1
Netherlands	2	3				1	2	1	9
Nigeria		1							1
Norway		2						1	3
Pakistan	5	2							7
Peru		2							2
Philippines	1	1							2
Poland		2					1		3
Portugal		1					1		2
Romania	4	2	1	1			1		9
Russian Federation							1		1
Serbia		1							1
Slovakia	5						2		7
Slovenia	1	1							2
South Africa	2	1	2	2			8	3	18
Spain	9			1			5	1	16
Sweden	12	1	1	1			2		17
Switzerland	5	3					3	2	13
Syrian Arab Republic		1							1
Tajikistan		1							1
Thailand		2							2
Turkey		2		1					3
Ukraine	21	2		1			8	5	37
United Kingdom						1	2		3
United States of America							1		1
Uzbekistan		2							2
Venezuela, Bolivarian Republic of		1							1
Viet Nam	4	1							5

Note: 1. The numbers indicated here include projected and operational facilities, and facilities at the decommissioning stage.

2. There were also 17 facilities under Agency safeguards in Taiwan, China.

^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.

Table 30(b). Facilities under Agency safeguards or containing safeguarded nuclear material on 31 December 2015

State ^a	Name of facility	Location ^a
Power reactors		
Argentina	Atucha-1 NPP	Lima
	Atucha-2 NPP	Lima
	Carem 25	Lima
	Embalse NPP	Embalse
Armenia	Armenian NPP	Metsamor
	Armenian NPP 3	Metsamor
Belarus	Belarus-1	Ostrovets
	Belarus-2	Ostrovets
Belgium	Doel-1 & 2	Doel
	Doel-3	Doel
	Doel-4	Doel
	Tihange-1	Tihange
	Tihange-2	Tihange
	Tihange-3	Tihange
Brazil	Angra-1	Angra Dos Reis
	Angra-2	Angra Dos Reis
	Angra-3	Angra Dos Reis
Bulgaria	Kozloduy-1 & 2	Kozloduy
	Kozloduy-3 & 4	Kozloduy
	Kozloduy-5 & 6	Kozloduy
Canada	Bruce 'A' N.G.S.	Tiverton, Ontario
	Bruce 'B' G.S.	Tiverton, Ontario
	Darlington NGD	Bowmanville, Ontario
	Gentilly II	Gentilly, Quebec
	Pickering N.G.S.	Pickering, Ontario
	Point Lepreau	Pt. Lepreau, New Brunswick
China	QSNPP	Hai Yan, Zhe Jiang
Czech Republic	NPP Dukovany (Edu-1)	Dukovany
	NPP Dukovany (Edu-2)	Dukovany
	NPP Temelin	Temelin
Finland	Hanhikivi-1	Pyhaejoki
	Loviisa	Loviisa
	TVO-1	Olkiluoto
	TVO-2	Olkiluoto
	TVO-3	Olkiluoto
	TVO-4	Olkiluoto

State ^a	Name of facility	Location ^a
Germany	AVR	Juelich
	HKG-THTR 300	Hamm
	KKW Brokdorf	Brokdorf
	KKW Brunsbuettel	Brunsbuettel
	KKW Emsland	Lingen (Ems)
	KKW GR3-5	Lubmin
	KKW Grafenrheinfeld	Grafenrheinfeld
	KKW Greifswald-1 & 2	Lubmin
	KKW Grohnde	Emmerthal
	KKW Gundremmingen, Block B	Gundremmingen
	KKW Gundremmingen, Block C	Gundremmingen
	KKW Isar-1	Essenbach
	KKW Isar-2	Essenbach
	KKW Kruemmel	Geesthacht
	KKW Neckarwestheim-1	Neckarwestheim
	KKW Neckarwestheim-2	Neckarwestheim
	KKW Obrigheim	Obrigheim
	KKW Philippsburg-1	Philippsburg
	KKW Philippsburg-2	Philippsburg
	KKW Unterweser	Unterweser
	KW Biblis A	Biblis
	KW Biblis B	Biblis
	KWL Lingen	Lingen
	KWW Muelheim-Kaerlich	Muelheim-Kaerlich
Hungary	MVM Paks-1	Paks
	MVM Paks-2	Paks
India	KAPS-1 & 2	Surat, Gujrat
	KKNPP	Kudankulam
	NAPS-1 & 2	Bulandshahar, Uttar Pradesh
	RAPS-1 & 2	Rawatbhata, Rajasthan
	RAPS-3 & 4	Rawatbhata, Rajasthan
	RAPS-5 & 6	Rawatbhata, Rajasthan
	TAPS	Tarapur, Maharashtra
Iran, Islamic Republic of	Bushehr NPP	Bushehr
	IR360 NPP	Darkhovein
Italy	Caorso	Caorso
	Latina	Borgo Sabotino
	Trino	Trino Vercellese
	Cirene	Borgo Sabotino

State ^a	Name of facility	Location ^a
	Garigliano	Sessa Aurunca
Japan	Fuku-I-1	Futaba-Gun, Fukushima-Ken
	Fuku-I-2	Futaba-Gun, Fukushima-Ken
	Fuku-I-3	Futaba-Gun, Fukushima-Ken
	Fuku-I-4	Futaba-Gun, Fukushima-Ken
	Fuku-I-5	Futaba-Gun, Fukushima-Ken
	Fuku-I-6	Futaba-Gun, Fukushima-Ken
	Fuku-N-1	Futaba-Gun, Fukushima-Ken
	Fuku-N-2	Futaba-Gun, Fukushima-Ken
	Fuku-N-3	Futaba-Gun, Fukushima-Ken
	Fuku-N-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
	Higashidoori-1	Shimokita-Gun, Aomori-Ken
	Higashidoori-1	Shimokita-Gun, Aomori-Ken
	Ikata-1	Nishiuwa-Gun, Ehime-Ken
	Ikata-2	Nishiuwa-Gun, Ehime-Ken
	Ikata-3	Nishiuwa-Gun, Ehime-Ken
	Joyo	Higashi, Ibaraki-Ken
	Kaminoseki-1	Kumage-Gun, Yamaguchi-Ken
	Kashiwazaki-1	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-2	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-3	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-4	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-5	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-6	Kashiwazaki-Shi, Niigata-Ken
	Kashiwazaki-7	Kashiwazaki-Shi, Niigata-Ken
	Mihama-1	Mikata-Gun, Fukui-Ken
	Mihama-2	Mikata-Gun, Fukui-Ken
	Mihama-3	Mikata-Gun, Fukui-Ken
	Monju	Tsuruga-Shi, Fukui-Ken
	Ohi-1& 2	Ohi-Gun, Fukui-Ken

State ^a	Name of facility	Location ^a
	Ohi-3	Ohi-Gun, Fukui-Ken
	Ohi-4	Ohi-Gun, Fukui-Ken
	Ohma	Shimokita-Gun, Aomori-Ken
	Onagawa-1	Oshika-Gun, Miyagi-Ken
	Onagawa-2	Oshika-Gun, Miyagi-Ken
	Onagawa-3	Oshika-Gun, Miyagi-Ken
	Sendai-1	Sendai-Shi, Kagoshima-Ken
	Sendai-2	Sendai-Shi, Kagoshima-Ken
	Sendai-3	Satsumasendai-Shi
	Shika-1	Hakui-Gun, Ishikawa-Ken
	Shika-2	Hakui-Gun, Ishikawa-Ken
	Shimane-1	Yatsuka-Gun, Shimane-Ken
	Shimane-2	Yatsuka-Gun, Shimane-Ken
	Shimane-3	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	Tokai-Mura, Ibaraki-Ken
	Tokai-2	Tokai-Mura, Ibaraki-Ken
	Tomari-1	Fururu-Gun, Hokkaido
	Tomari-2	Fururu-Gun, Hokkaido
	Tomari-3	Fururu-Gun, Hokkaido
	Tsuruga-1	Tsuruga-Shi, Fukui-Ken
	Tsuruga-2	Tsuruga-Shi, Fukui-Ken
Kazakhstan	BN-350	Aktau
Korea, Republic of	Hanbit-1	Yeonggwang
	Hanbit-2	Yeonggwang
	Hanbit-3	Yeonggwang
	Hanbit-4	Yeonggwang
	Hanbit-5	Yeonggwang
	Hanbit-6	Yeonggwang
	Hanul-1	Ulchin
	Hanul-2	Ulchin
	Hanul-3	Ulchin
	Hanul-4	Ulchin
	Hanul-5	Ulchin
	Hanul-6	Ulchin
	Kori-1	Pusan

State ^a	Name of facility	Location ^a
	Kori-2	Pusan
	Kori-3	Pusan
	Kori-4	Pusan
	Shin Hanul-1	Ulchin
	Shin Hanul-2	Ulchin
	Shin Hanul-3	Ulchin
	Shin Hanul-4	Ulchin
	Shin Kori-1	Pusan
	Shin Kori-2	Pusan
	Shin Kori-3	Pusan
	Shin Kori-4	Pusan
	Shin Kori-5	Pusan
	Shin Kori-6	Pusan
	Shin Wolsong-1	Kyongju
	Shin Wolsong-2	Kyongju
	Wolsong-1	Kyongju
	Wolsong-2	Kyongju
	Wolsong-3	Kyongju
	Wolsong-4	Kyongju
Lithuania	Ignalina NPP	Visaginas
Mexico	Central Laguna Verde Unit I	Muni. Al. Luc. Veracruz
	Central Laguna Verde Unit II	Muni. Al. Luc. Veracruz
Netherlands	EPZ Borssele	Borssele
	N. V. GKN-Dodewaard	Dodewaard
Pakistan	Chasnupp-1	Kundian, District Mianwali
	Chasnupp-2	Kundian, District Mianwali
	Chasnupp-3	Kundian, District Mianwali
	Chasnupp-4	Kundian, District Mianwali
	Kanupp	Karachi
Philippines	BNPP	Morong, Bataan
Romania	Cernavoda-3	Cernavoda
	Cernavoda-4	Cernavoda
	CNE Cernavoda-1	Cernavoda
	CNE Cernavoda-2	Cernavoda
Slovakia	JAVYS A-1	Jaslovske Bohunice
	JAVYS V-1	Jaslovske Bohunice
	Mochovce-1 & 2	Mochovce
	Mochovce-3 & 4	Mochovce
	V-2	Jaslovske Bohunice

State ^a	Name of facility	Location ^a
Slovenia	Krško (NEK)	Krško
South Africa	Koeberg Unit I	Cape Town
	Koeberg Unit II	Cape Town
Spain	Asco 1	Asco
	Asco 2	Asco
	C.N. Almaraz-1	Almaraz
	C.N. Almaraz-2	Almaraz
	C.N. Cofrentes	Cofrentes
	C.N. de Sta. Maria de Garoña	Santa Maria de Garoña
	C.N. Jose Cabrera	Almonacid De Zorita
	C.N. Trillo-1	Trillo
	C.N. Vandellos-2	Vandellos
Sweden	Barsebaeck-1	Loeddekoeping
	Barsebaeck-2	Loeddekoeping
	Forsmark-1	Oesthammar
	Forsmark-2	Oesthammar
	Forsmark-3	Oesthammar
	Oskarshamn-1	Oskarshamn
	Oskarshamn-2	Oskarshamn
	Oskarshamn-3	Oskarshamn
	Ringhals-1	Ringhals
	Ringhals-2	Ringhals
	Ringhals-3	Ringhals
	Ringhals-4	Ringhals
Switzerland	KKB Beznau-1	Doettingen
	KKB Beznau-2	Doettingen
	KKG Goesgen	Daeniken
	KKL Leibstadt	Leibstadt
	KKM Muehleberg	Muehleberg
Ukraine	Chernobyl-1	Chernobyl
	Chernobyl-2	Chernobyl
	Chernobyl-3	Chernobyl
	Chernobyl-5	Chernobyl
	Chernobyl-6	Chernobyl
	Khmelnitski-1	Neteshin
	Khmelnitski-2	Neteshin
	Khmelnitski-3	Neteshin
	Khmelnitski-4	Neteshin
	Rovno-1 & 2	Kuznetsovsk

State ^a	Name of facility	Location ^a
	Rovno-3	Kuznetsovsk
	Rovno-4	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
Viet Nam	Ninh Thuan-1 Plant Unit 1	Phuoc Dinh Commune, Thuan Nam District
	Ninh Thuan-1 Plant Unit 2	Phuoc Dinh Commune, Thuan Nam District
	Ninh Thuan-2 Plant Unit 1	Vinh Hai Commune, Ninh Hai District
	Ninh Thuan-2 Plant Unit 2	Vinh Hai Commune, Ninh Hai District

Research Reactors and Critical Assemblies

Algeria	Es Salam Reactor	Ain Oussera
	Nur Reactor	Draria-Bp29 Wilaya de Tipaza
Argentina	RA-0	Cordoba
	RA-1	Buenos Aires
	RA-3	Ezeiza
	RA-4	Rosario
	RA-6	Bariloche
	RA-8	Pilcaniyeu
	RA-10	Ezeiza
Australia	HIFAR	Lucas Heights, New South Wales
	OPAL	Lucas Heights, New South Wales
Austria	TRIGA Mark II Reactor	Vienna
Bangladesh	Atomic Energ. Res. Estab.	Dhaka
Belarus	Sosny	Minsk
Belgium	BR1-CEN	Mol
	BR2-CEN	Mol
	Thetis Universiteit Gent	Gent
	Venus-CEN	Mol
Brazil	Brazilian Multipurpose Reactor	Iperó
	CDTN/IRP-R1 Reactor	Belo Horizonte

State ^a	Name of facility	Location ^a
	IEN/Argonauta Reactor	Rio de Janeiro
	IPEN/IEA-R1	São Paulo
	IPEN/MB01 Critical Assembly	São Paulo
	Labgene	Iperó
Bulgaria	IRT-2000	Sofia
Canada	Biology, Chemistry, Physics	Chalk River, Ontario
	DIF	Chalk River, Ontario
	Ecole Polytechnique	Montreal, Quebec
	McMaster Nuc. Reactor	Hamilton, Ontario
	NRU Reactor	Chalk River, Ontario
	NRX Reactor	Chalk River, Ontario
	Slowpoke Alberta	Uni. of Alberta, Edmonton
	Slowpoke Kingston	Kingston, Ontario
	Slowpoke Saskatchewan	Saskatoon, Saskatchewan
Chile	RECH-1	Santiago
	RECH-2	Santiago
China	HTR-10	Nankou, Beijing
Colombia	Ian-R1	Bogotá
Czech Republic	LR-0	Řež
	LVR-15	Řež
	VR-1	Prague
Democratic Republic of the Congo	TRIGA II Reactor	Kinshasa
Denmark	Danish Decommissioning-DR3	Roskilde
Egypt	ET RR-1	Inshas
	ET RR-2	Inshas
Estonia	A.L.A.R.A.	Paldiski
Finland	FiR 1	Espoo
Georgia	Decom. IRT-M	Tbilisi
Germany	AKR-2	Dresden
	BER-II	Berlin
	FH-Furtwangen	Furtwangen
	FRM	Garching
	FRM II	Garching
	Helmholtz-Zentrum Geesthacht	Geesthacht
	KFA-FRJ2	Juelich
	Labor-St	Zittau
	SUR100 FHU	Ulm
	SUR-100 Hannover	Hannover

State ^a	Name of facility	Location ^a
	SUR-100 Stuttgart	Stuttgart
	SUR-100-RWTH	Aachen
	TRIGA Mainz	Mainz
Ghana	GHARR-1 — Ghana Research Reactor1	Legon-Accra
Greece	GRR-1	Attikis
Hungary	Budapest Research Reactor	Budapest
	Training Reactor	Budapest
Indonesia	CHTKN	Bandung
	PPNY	Yogyakarta
	RSG-GAS	Serpong
Iran, Islamic Republic of	Esfahan MNSR	Esfahan
	Fars Research Reactor	Shiraz
	HWZPR	Esfahan
	IR-40	Arak
	Tehran Research Reactor (TRR)	Tehran
Israel	Israel R.R.-1 (IRR-1)	Soreq
Italy	AGN-201	Palermo
	CEC-Complexe-Essor	Ispra
	CISAM-RTS-1	San Piero a Grado
	CNEN-RB-3	Montecuccolino
	LENA	Pavia
	TAPIRO Casaccia	Santa Maria di Galeria
	TRIGA RC1 Mark II	Santa Maria di Galeria
Jamaica	CNS	Kingston
Japan	DCA	Oarai-Machi, Ibaraki-Ken
	FCA	Tokai-Mura, Ibaraki-Ken
	HTR	Kawasaki-Shi, Kanagawa-Ken
	HTTR	Higashi, Ibaraki-Ken
	JMTR	Higashi, Ibaraki-Ken
	JMTRC	Higashi-Gun, Ibaraki-Ken
	JRR-2	Tokai-Mura, Ibaraki-Ken
	JRR-3	Tokai-Mura, Ibaraki-Ken
	JRR-4	Tokai-Mura, Ibaraki-Ken
	KINKI	Higashiosaka-Shi, Osaka-Fu
	KUCA	Osaka
	KUR	Sennan-Gun, Osaka
	Musashi Reactor	Kawasaki-Shi, Kanagawa-Ken
	NCA	Kawasaki-Shi, Kanagawa-Ken

State ^a	Name of facility	Location ^a
	NSRR	Tokai-Mura, Ibaraki-Ken
	Rikkyo	Nagasaka, Kanagawa-Ken
	TCA	Tokai-Mura, Ibaraki-Ken
	TODAI	Tokai-Mura, Ibaraki-Ken
	TTR	Kawasaki-Shi, Kanagawa-Ken
	VHTRC	Tokai-Mura, Ibaraki-Ken
Jordan	JRTR	Jordan Univ. Science & Tech.
Kazakhstan	IGR Reactor	Kurchatov
	IVG.1M Reactor	Kurchatov
	RA Reactor	Kurchatov
	WWR-K	Almaty
Korea, Republic of	Gijang Research Reactor	Gijang, Busan Metrp. City
	Hanaro	Daejeon
	Kyung Hee	Suwoon
Latvia	IRT	Salaspils
Libya	IRT-Tajura	Tajura
Malaysia	Puspati	Bangi, Selangor
Mexico	TRIGA Mark III	Ocoyoacac
Morocco	MA-R1	Rabat, Agdal
Netherlands	HFR-Petten	Petten
	IRI. HOR	Delft
	LFR-Petten	Petten
Nigeria	NIRR-1	Ahmadu Bello University, Zaria
Norway	HBWR	Halden
	JEEP-II	Kjeller
Pakistan	PARR-1	Rawalpindi
	PARR-2	Rawalpindi
Peru	RP-10 R. Reactor	Lima
	RP-0 R. Reactor	Lima
Philippines	PRR-1	Quezon City, Diliman
Poland	Anna & Agata	Otwock-Swierk
	Maria	Otwock-Swierk
Portugal	IST (CTN) RPI	Sacavem
Romania	IFIN-HH	Magurele
	TRIGA Research & MTR	Pitești-Mioveni
Serbia	RA-RB	Vinca
Slovenia	TRIGA II	Ljubljana
South Africa	Safari-I Research Reactor	Pelindaba
Sweden	Studsvik AB and AB Svafo	Studsvik

State ^a	Name of facility	Location ^a
Switzerland	AGN 211-P	Basel
	Crocus	Lausanne
	Proteus	Villigen
Syrian Arab Republic	MNSR	Damascus
Tajikistan	Argus Research Reactor	Dushande
Thailand	ONRC	Ongkharak
	TRR-1	Bangkok
Turkey	Cekmece Nuc. Res. & Tr. Centre	Istanbul
	ITU-TRR-TRIGA Mark II	Istanbul
Ukraine	IR-100 Research Reactor	Sevastopol
	WWR-M Research Reactor	Kiev
Uzbekistan	IIN-3M	Tashkent
	WWR-SM	Ulugbek
Venezuela, Bolivarian Republic of	RV-1	Altos de Pipe
Viet Nam	Da Lat Research Reactor	Da Lat, Lam Dong
Conversion Plants		
Algeria	Pilot Uranium Conversion Plant	Draria Nuclear Research Center
Argentina	Experimental Dry Conversion	Bariloche
	UF6 Conversion Plant	Pilcaniyeu
	UO2 Conversion Plant	Cordoba
	Uranium Powder Production Fac.	Constituyentes
Brazil	USEXA	Iperó
Canada	Blind River	Blind River, Ontario
	Port Hope	Port Hope, Ontario
Chile	LEC	Santiago
Iran, Islamic Republic of	EUPP	Esfahan
	UCF	Esfahan
Japan	JCO	Tokai-Mura, Ibaraki-Ken
	PCDF	Tokai-Mura, Ibaraki-Ken
Mexico	Fuel Fabrication Pilot Plant	Salazar
Romania	National Uranium Company	Feldioara
South Africa	Conversion Plant (U Plant)	Pelindaba
	HEU/LEU Conversion Plant	Pelindaba
Sweden	RMA	Stenstorp
Fuel Fabrication Plants		
Algeria	UDEC	Draria Nuclear Site
Argentina	ECRI	Buenos Aires
	FECN	Ezeiza

State ^a	Name of facility	Location ^a
	R. Reactor Fuel Fab. Plant	Ezeiza
Belgium	FBFC DNU Fab.	Dessel
	FBFC PU Fab.	Dessel
	N.V. BN	Dessel
Brazil	FCN-Fuel Fabrication Plant	Resende
Canada	Cameco, Port Hope	Port Hope, Ontario
	Fuel Eng. Met. Che. Op.	Chalk River, Ontario
	Fuel Fabrication Facility	Chalk River, Ontario
	GE, Hitachi Inc., Peterborough	Peterborough, Ontario
	GE, Hitachi Inc., Toronto	Toronto, Ontario
Chile	UMF	Santiago
Egypt	FMPP (Fuel Manuf. Pilot Plant)	Inshas
	R & D - NFL	Inshas
France	Melox de Marcoule	Chusclan
Germany	Advanced Nuclear Fuels	Lingen
India	NFC	Hyderabad
	NFC - NU	Hyderabad
Indonesia	IEBE	Serpong
	IPEBRR	Serpong
Iran, Islamic Republic of	FMP	Esfahan
	FPFP	Esfahan
Italy	FN Bosco Marengo	Bosco Marengo
Japan	GNF-J	Yokosuka-Shi, Kanagawa-Ken
	J-MOX	Oaza Obuchi, Rokkasho-Mura
	MNF	Tokai-Mura, Ibaraki-Ken
	NFI Kumatori-1	Sennan-Gun, Osaka
	NFI Tokai-1	Tokai-Mura, Ibaraki-Ken
	NFI Tokai-2	Tokai-Mura, Ibaraki-Ken
	PPFF	Tokai-Mura, Ibaraki-Ken
	PPFF	Tokai-Mura, Ibaraki-Ken
Kazakhstan	UMP	Ust-Kamenogorsk
Korea, Republic of	KNF	Daejeon
Romania	SN NFP Subsidiary	Mioveni
South Africa	MTR Fuel Fabrication Plant	Pelindaba
	LEU Fuel Fabrication Plant	Pelindaba
Spain	ENUSA Fab. Juzbado	Juzbado
Sweden	Westinghouse Electric	Vaesteras/Finnslaetten
Turkey	Nuclear Fuel Pilot Plant	Istanbul
Ukraine	NFFP	Smolino Village, Kirovograd

State ^a	Name of facility	Location ^a
Reprocessing Plants		
France	AREVA NC - UP2 & UP3	La Hague
Germany	WAK/VEK	Eggenstein-Leopoldshafen
Italy	So. G.I.N. SpA – Impianto EUREX	Saluggia
	So. G.I.N. SpA - Trisaia	Rotondella
Japan	CPF	Tokai-Mura, Ibaraki-Ken
	RETF	Tokai-Mura, Ibaraki-Ken
	RRF	Ibaraki-Ken
	RRP	Kamikita-Gun, Aomori-Ken
	SCF	Tokai-Mura, Ibaraki-Ken
	TRP	Tokai-Mura, Ibaraki-Ken
Enrichment Plants		
Argentina	Lasie	Bariloche
	Pilcaniyeu Mock-up Laboratory	Pilcaniyeu
	Uranium Enrichment Pilot Plant	Pilcaniyeu
Brazil	CTMSP/Ladesi-Copesp	São Paulo
	CTMSP/LEI	Iperó
	CTMSP/USIDE	Iperó
	FCN-Enrichment Plant	Resende
	IAEV/AR/LAS	São Jose dos Campos
China	Shaanxi	Han Zhang, Shaanxi Province
France	Georges Besse II	Bollene
Germany	UTA 1 and UTA 2	Gronau
Iran, Islamic Republic of	FEP	Natanz
	FFEP	Qom
	PFEP	Natanz
Japan	CTF	Kitakami-Gun, Aomori-Ken
	NEP	Tomata-Gun, Okayama-Ken
	REP	Kamikita-Gun, Aomori-Ken
Netherlands	Urenco Nederland	Almelo
United Kingdom	Urenco Capenhurst E22, E23, A3	Capenhurst
Separate Storage Facilities		
Argentina	DCMFEI	Ezeiza
	DCMFE	Buenos Aires
	DUE	Ezeiza
	FACIRI	Ezeiza
	Nuclear Material Storage	Buenos Aires
	Storage Bunker	Ezeiza
Armenia	SSFS	Metsamor

State ^a	Name of facility	Location ^a
Australia	Bulk Storage Facility	Lucas Heights, Sutherland
Belarus	Belarus NPP FF Storage	Ostrovets
Belgium	Belgoprocess	Dessel
	Belgoprocess Dry Storage	Dessel
	Belgoprocess UF6	Dessel
	Elbel Doel Dry Storage	Beveren
	Tihange Wet Store	Tihange
Brazil	Planned Fuel Storage Facility	Itaguaí
Bulgaria	DSFSF KNPP-2	Kozloduy
	SFSF Kozloduy-1	Kozloduy
Canada	ACEL Research	Pinawa, Manitoba
	CRL Waste Storage Facility	Chalk River, Ontario
	DP Dry Storage	Tiverton, Ontario
	DWMF	Darlington, Ontario
	FPSF	Chalk River, Ontario
	Gentilly I	Gentilly, Quebec
	LTWMF	Port Hope, Ontario
	NMSF	Chalk River, Ontario
	PUFDSF	Pickering, Ontario
	Spent Fuel Canister Storage	Chalk River, Ontario
	Waste Storage Facility	Chalk River, Ontario
	WUFDSF	Tiverton, Ontario
Czech Republic	ISFS Dukovany	Dukovany
	ISFS Temelin	Temelin
	Radioactive Waste Rep. Richard	Litomerice
	Vao, HLWS	Řež
Denmark	DD Storage	Roskilde
	DD Waste	Roskilde
Finland	Geological Repository	Olkiluoto
	TVO-KPA-Store	Olkiluoto
Germany	AVR-BL	Juelich
	BZA Ahaus	Ahaus
	Daher Nuclear Technologies GmbH	Hanau
	EWN Zwischenlager Nord GmbH	Lubmin
	HDB	Eggenstein-Leopoldshafen
	Kernmateriallager 87	Rosendorf
	KFA-AVR	Juelich
	KFK-FR-2	Eggenstein-Leopoldshafen
	PTB-Spaltstofflager	Hanau

State ^a	Name of facility	Location ^a
	SZK Kruemmel	Geesthacht
	SZL Biblis	Biblis
	SZL Brokdorf	Brokdorf
	SZL Brunsbuettel	Brunsbuettel
	SZL Emsland	Lingen (Ems)
	SZL Grafenrheinfeld	Grafenrheinfeld
	SZL Grohnde	Emmerthal
	SZL Gundremmingen	Gundremmingen
	SZL Isar	Essenbach
	SZL Neckarwestheim	Neckarwestheim
	SZL Philippsburg	Philippsburg
	SZL Unterweser	Stadland
	TBH (B) 87.2	Rosendorf
	TBL-G	Gorleben
	Uranoxid-Lager UAG	Gronau
Hungary	Central Isotope Storage	Budapest
	MVDS	Paks
India	PREFRE	Tarapur
	TAPS AFR	Tarapur
Indonesia	Ria-Nd ISFSF	Serpong
Iran, Islamic Republic of	KWS	Karaj
Iraq	Location C Tuwaitha	Tuwaitha
Italy	CCRM Ispra Central Store	Ispra
	Centro di Comune di Ricerca	Ispra
	Dep Avogadro Elementi Irragg	Torino
	Essor Storage	Ispra
	Lab Misure Nucleari Perla	Ispra
	Nucleco S.p.A.	Rome
Japan	Fugen	Tsuruga-Shi, Fukui-Ken
	Fuku-I-CSFS	Futaba-Gun, Fukushima-Ken
	Hamaoka (Storage-UC)	Omaezaki-Shi, Shizuoka-Ken
	JAERI Mutsu	Mutsu-Shi, Aomori-Ken
	KUFFS	Sennan-Gun, Osaka
	NFI Kumatori-2	Sennan-Gun, Osaka
	Ningyo R & D	Tomata-Gun, Okayama-Ken
	RFSC	Mutsu-Shi, Aomori-Ken
Kazakhstan	Baikal-1 DSFS	Kurchatov
	BN-350 Temporary Storage	Aktau
	IAEA LEU Storage Facility	Ust-Kamenogorsk

State ^a	Name of facility	Location ^a
	Thorium Storage Facility	Kurchatov
	Ulba Thorium Storage	Ust-Kamenogorsk
Korea, Republic of	NMSF	Daejeon
	Uranium Residue Storage Fac.	Daejeon
Lithuania	Radioactive Waste Management	Vilnius
	SNFS-1	Visaginas
	SNFS-2	Visaginas
Netherlands	COVRA	Vlissingen-Oost
	HABOG	Vlissingen
Poland	ZUOP	Swierk
Portugal	IST (CTN) Instalacao Piloto	Sacavem
Romania	CNE Cernavoda IDSFS	Cernavoda
Russian Federation	IUEC Storage Facility	Angarsk
Slovakia	JAVYS Nuclear Store	Jaslovske Bohunice
	JAVYS ISFS	Jaslovske Bohunice
South Africa	E-Building Storage Facility	Pelindaba
	HEU Storage Vault	Pelindaba
	Koeberg Castor Storage Fac.	Cape Town
	Thabana Pipe Store	Pelindaba
	Vaalputs	Springbok
	Waste Storage Facility	Pelindaba
	Y-Plant Storage Facility	Pelindaba
	Z-Plant Storage Facility	Pelindaba
Spain	Asco Dry Storage	Asco
	ATC Centralized Storage	Madrid
	Nuclenor, S.A. Storage	Santa Maria de Garoña
	Trillo Dry Storage	Trillo
	Zorita Dry Storage	Almonacid de Zorita
Sweden	SFK	Oesthammar
	SKB Clab Store	Oskarshamn
Switzerland	Saphir	Villigen
	Zwibez	Doettingen
	Zwilag	Wuerenlingen
Ukraine	Chernobyl NPP-SFS	Chernobyl
	Chernobyl SNFSF-2	Chernobyl
	Khmelnitski FF Storage	Neteshin
	Rovno FF Storage	Kuznetsovsk
	South Ukraine FF Storage	Yuzhnoukrainsk
	Ukraine Centralized Dry Store	Chernobyl

State ^a	Name of facility	Location ^a
	Zaporozhe FF Storage	Energodar
	Zaporozhe SFS	Energodar
United Kingdom	SNM Store 9	Sellafield
	Thorp Product Store	Sellafield
United States of America	KAMS Storage	Savannah River Site
Other Facilities		
Algeria	AURES I	Birine Nucl. Site (Ain Oussera)
Argentina	Alpha Laboratory	Buenos Aires
	Fission Products Division (DPF)	Ezeiza
	Lapep	Ezeiza
	Tripple Altura Laboratory (LTA)	Ezeiza
	Enriched Uranium Recovery Laboratory (LUE)	Ezeiza
	Uranium Power Fab. Plant (PFPU)	Buenos Aires
	PPCA	Buenos Aires
Australia	R & D Labs	Lucas Heights, Sutherland
	SYNROC	Lucas Heights, Sutherland
Belgium	Belgoprocess Waste Treatment	Mol
	I.R.E.	Fleurus
	IRMM. Geel	Geel
	SCK-CEN Lab.	Mol
	SCK-CEN Pu Laboratories	Mol
Brazil	Aramar Store	Iperó
	CTMSP/Labmat	Iperó
	IPEN-Fuel Dev. and Tech. Fac.	São Paulo
	IPEN-Reprocessing Project	São Paulo
	LADICON	São Paulo
Czech Republic	Lab. & Stores, Centr. Anal. Lab	Řež
	UJP	Prague
Denmark	Danish Decommiss. - Hotcell	Roskilde
Egypt	Hydrometallurgy Unit	Inshas
	Molybdenum Production Unit	Inshas
	NCB	Inshas
Finland	Encapsulation Plant	Olkiluoto
Georgia	Razmnozhitel-1	Tbilisi
	Sukhumi Institute	Sukhumi
Germany	Inst. Kernchemie	Mainz
	JRC-ITU	Eggenstein-Leopoldshafen
	KFA-HZ	Juelich

State ^a	Name of facility	Location ^a
	Lab. Juelich	Juelich
	PKA Gorleben	Gorleben
	WAK-Heisse Zellen der HVT	Eggenstein-Leopoldshafen
Indonesia	RMI	Serpong
Iran, Islamic Republic of	JHL	Tehran
	LWSCR	Esfahan
	MIX Separation Facility	Tehran
Italy	CNEN-ISTEC	Santa Maria di Galeria
	Impianto Plutonio	Santa Maria di Galeria
	OPEC 2-CAS	Santa Maria di Galeria
Japan	NC Tokai R & D	Tokai-Mura, Ibaraki-Ken
	FMF	Higashi, Ibaraki-Ken
	IRAF	Higashi-Gun, Ibaraki-Ken
	JAERI Oarai R & D	Higashi, Ibaraki-Ken
	JAERI Tokai	Tokai-Mura, Ibaraki-Ken
	JNC Oarai R & D	Higashi, Ibaraki-Ken
	Kumatori	Sennan-Gun, Osaka
	Mitsui Iwakuni-Ohtake	Kuga-Gun, Yamaguchi-Ken
	Mitsui Osaka	Takai-Shi, Osaka-Fu
	NDC Fuel Hot Lab	Tokai-Mura, Ibaraki-Ken
	NERL	Tokai-Mura, Ibaraki-Ken
	NFD	Higashi, Ibaraki-Ken
	Showa	Kawasaki-Shi, Kanagawa-Ken
	Sumitomo-Chiba	Sodegaura-Shi, Chiba-Ken
	UML	Higashi, Ibaraki-Ken
Korea, Republic of	ACPF	Daejeon
	DFDF	Daejeon
	HFFL	Daejeon
	IMEF	Daejeon
	KAERI R&D Facility	Daejeon
	PIEF	Daejeon
	PRIDE	Kaeri Site, Daejeon
Libya	Tajura Uranium R&D Facility	Tajura
Netherlands	GCO/ECN Lab.	Petten
Norway	Research Laboratories	Kjeller
South Africa	Decontam. and Waste Recovery Pl.	Pelindaba
	Hot Cell Complex	Pelindaba
	Nu and Du Metals Plant	Pelindaba
Spain	C.A. El Cabril	El Cabril

State ^a	Name of facility	Location ^a
Switzerland	CERN	Geneva
	Hot Labor	Villigen
Ukraine	Chernobyl Conditioning	Chernobyl
	Chernobyl Unit 4 Shelter	Chernobyl
	KHFTI	Kharkov
	KHFTI	Kharkov
	Sevastopol Subcritical Assembly	Sevastopol

- Note:**
1. There were also 17 facilities under Agency safeguards in Taiwan, China.
 2. Additionally under Agency safeguards there were 576 material balance areas outside facilities in 125 States and 1 in Taiwan, China. These include 54 material balance areas established for States with small quantities protocol based on the revised standard text.
 3. The list includes projected and operational facilities, and facilities at the decommissioning stage.

^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.