

The background of the cover features a light blue color palette with abstract geometric patterns. On the left side, there are several concentric circles and a faint, wireframe globe. On the right side, there are overlapping, semi-transparent rectangular shapes in various shades of blue, creating a layered, architectural effect.

# **IAEA ANNUAL REPORT 2017**

**Additional Annex Information**

**Table A31. Coordinated research projects initiated in 2017**

**Nuclear Power**

- Design and Performance Assessment of Passive Engineered Safety Features in Advanced Small Modular Reactors

**Nuclear Science**

- Recommended Input Parameter Library (RIPL) for Fission Cross Section Calculations
- Data for Atomic Processes Related to Neutral Beams in Fusion Plasma
- Enhancing Nuclear Analytical Techniques to Meet the Needs of Forensic Science
- Field-deployable Analytical Methods to Assess the Authenticity, Safety and Quality of Food
- Towards the Standardization of Small Specimen Test Techniques for Fusion Applications

**Food and Agriculture**

- Irradiation of Transboundary Animal Disease (TAD) Pathogens as Vaccines and Immune Inducers
- Use of Stable Isotopes to Trace Bird Migrations and Molecular Nuclear Techniques to Investigate the Epidemiology and Ecology of the Highly Pathogenic Avian Influenza (Phase II)
- Field-deployable Analytical Methods to Assess the Authenticity, Safety and Quality of Food
- Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods
- Integration of the SIT with Biocontrol for Greenhouse Insect Pest Management
- Improving Resilience to Drought in Rice and Sorghum through Mutation Breeding

**Human Health**

- Application of Stable Isotope Techniques in Environmental Enteric Dysfunction Assessment and Understanding its Impact on Child Growth
- Applying Nuclear Techniques to Understand the Link between Early Life Nutrition and Later Childhood Health
- Gated-SPECT in the Planning of Ischemia Guided PCI in STEMI Patients
- Use of PET-CT with Gallium-68 Labelled Prostate Specific Membrane Antigen in the Diagnosis and Follow-up of Patients with Prostate Cancer
- Applications of Biological Dosimetry Methods in Radiation Oncology, Nuclear Medicine, and Diagnostic and Interventional Radiology (MEDBIODOSE)
- Dosimetry in Molecular Radiotherapy for Personalized Patient Treatments

**Environment**

- Behaviour and Effects of Natural and Anthropogenic Radionuclides in the Marine Environment and their use as Tracers for Oceanography Studies

**Radioisotope Production and Radiation Technology**

- New Ways of Producing Tc-99m and Tc-99m Generators (Beyond Fission and Cyclotron Methods)
- Imaging Technologies for Process Investigation and Components Testing

**Nuclear Security**

- Advancing Radiation Detection Equipment for Detecting Nuclear and Other Radioactive Material Out of Regulatory Control

**Table A32. Coordinated research projects completed in 2017**

**Nuclear Power**

- Application of Advanced Low Temperature Desalination Systems to Support Nuclear Power Plants and Non-Electric Applications

**Nuclear Science**

- Development of an Integrated Approach to Routine Automation of Neutron Activation Analysis
- Conceptual Development of Steady-state Compact Fusion Neutron Sources
- Atomic and Molecular Data for State-resolved Modelling of Hydrogen and Helium and their Isotopes in Fusion Plasma
- Establishment of Material Properties Database for Irradiated Core Structural Components for Continued Safe Operation and Lifetime Extension of Ageing Research Reactors

**Food and Agriculture**

- Approaches to Improvement of Crop Genotypes with High Water and Nutrient Use Efficiency for Water Scarce Environments

**Human Health**

- Development of Quality Audits for Advanced Technology (IMRT) in Radiotherapy Dose Delivery
- Safety and Optimization of Radiation Sterilization in Tissue Banking: Studies on Functional Properties of Irradiated Tissue Grafts
- Evidence-Based Assessment of Radiotherapy Demand and Quality of Radiotherapy Services
- Doctoral CRP on Stable Isotope Techniques to Assess Intake of Human Milk and Body Composition of Infants and Young Children up to Two Years of Age

**Water Resources**

- Stable Isotopes in Precipitation and Paleoclimatic Archives in Tropical Areas to Improve Regional Hydrological and Climatic Impact Models

**Environment**

- Ocean Acidification and the Economic Impact on Fisheries and Coastal Society

**Radioisotope Production and Radiation Technology**

- Application of Two and Three Dimensional Neutron Imaging with Focus on Cultural Heritage Research
- Development of Ga-68 based PET-Radiopharmaceuticals for Management of Cancer and other Chronic Diseases
- Application of Radiation Technology in the Development of Advanced Packaging Materials for Food Products

**Table A33. Publications issued in 2017**

**Nuclear Power**

- Available Reprocessing and Recycling Services for Research Reactor Spent Nuclear Fuel — IAEA Nuclear Energy Series
- Benchmark Analysis for Condition Monitoring Test Techniques of Aged Low Voltage Cables in Nuclear Power Plants — IAEA TECDOC
- Benchmark Analysis of EBR-II Shutdown Heat Removal Tests — IAEA TECDOC
- Energy, Electricity and Nuclear Power Estimates for the Period up to 2050 — Reference Data Series
- Guidelines for Preparing and Conducting an Integrated Nuclear Infrastructure Review (INIR) — IAEA Services Series
- Handbook on Ageing Management for Nuclear Power Plants — IAEA Nuclear Energy Series
- Industrial Applications of Nuclear Energy — IAEA Nuclear Energy Series
- Instrumentation and Control Systems for Advanced Small Modular Reactors — IAEA Nuclear Energy Series
- Integral Pressurized Water Reactor Simulator Manual — Training Course Series
- Integral Pressurized Water Reactor Simulator Manual: Exercise Handbook — Training Course Series
- Managing the Financial Risk Associated with the Financing of New Nuclear Power Plant Projects — IAEA Nuclear Energy Series
- Nuclear Power Reactors in the World — Reference Data Series
- On-line Monitoring of Instrumentation in Research Reactors — IAEA TECDOC
- Operating Experience with Nuclear Power Stations in Member States in 2016
- Opportunities for Cogeneration with Nuclear Energy — IAEA Nuclear Energy Series
- Research Reactors for the Development of Materials and Fuels for Innovative Nuclear Energy Systems — IAEA Nuclear Energy Series
- Research Reactors: Safe Management and Effective Utilization — IAEA Proceedings Series

**Nuclear Fuel Cycle and Materials Technology**

- Data Analysis and Collection for Costing of Research Reactor Decommissioning — IAEA TECDOC
- Decommissioning of Facilities — IAEA Safety Standards Series (French)
- Decommissioning of Facilities — IAEA Safety Standards Series (Spanish)
- Investigations of Materials under High Repetition and Intense Fusion Pulses — IAEA TECDOC
- Model Regulations for Decommissioning of Facilities — IAEA TECDOC
- Use of Low Enriched Uranium Fuel in Accelerator Driven Subcritical Systems — IAEA TECDOC

**Capacity Building and Nuclear Knowledge for Sustainable Energy Development**

- Application of the Management System for Facilities and Activities — IAEA Safety Standards Series
- Knowledge Loss Risk Management in Nuclear Organizations — IAEA Nuclear Energy Series

**Nuclear Science**

- Atomic and Plasma–Material Interaction Data Volume 17 — Atomic and Plasma–Material Interaction Data for Fusion
- Development of a Reference Database for Particle Induced Gamma Ray Emission (PIGE) Spectroscopy — IAEA TECDOC
- Nuclear Data Newsletter Issue No. 62, January 2017
- Nuclear Data Newsletter Issue No. 63, July 2017
- Proficiency Testing by Interlaboratory Comparison Performed in 2010–2015 for Neutron Activation Analysis and Other Analytical Techniques — IAEA TECDOC
- Status of Radon Related Activities in Member States Participating in Technical Cooperation Projects in Europe — IAEA TECDOC
- Strategic Planning for Research Reactors — IAEA Nuclear Energy Series

## Environment

- Advancing the Global Implementation of Decommissioning and Environmental Remediation Programmes — IAEA Proceedings Series
- Certification of Mass Fractions of Polycyclic Aromatic Hydrocarbons, Organochlorines and Polybrominated Diphenyl Ethers in IAEA-459 Marine Sediment Sample — IAEA Analytical Quality in Nuclear Applications Series
- Certification of Trace Elements and Methylmercury Mass Fractions in Tuna Fish Flesh Homogenate — IAEA Analytical Quality in Nuclear Applications Series
- Determination and Interpretation of Characteristic Limits for Radioactivity Measurements — IAEA Analytical Quality in Nuclear Applications Series
- Environment Laboratories Newsletter Vol. 3, No. 2, July–December 2016
- Environment Laboratories Newsletter Vol. 4, No. 1, January–June 2017
- Proficiency Test for Determination of Radionuclides in Sea Water — IAEA Analytical Quality in Nuclear Applications Series
- In Situ Analytical Characterization of Contaminated Sites Using Nuclear Spectrometry Techniques — IAEA Analytical Quality in Nuclear Applications Series
- International Peer Review of the Environmental Impact Assessment Performed for the Licence Application of the Baltic-1 Nuclear Power Plant, Kaliningrad, Russian Federation — Non-serial
- Nuclear Security Systems and Measures for Major Public Events — IAEA Nuclear Security Series (Arabic)
- Performance of Models in Radiological Impact Assessment for Normal Operation — IAEA TECDOC
- The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage — Explanatory Texts — IAEA International Law Series
- The Environmental Behaviour of Polonium — Non-serial
- X Ray Fluorescence in the IAEA and its Member States Newsletter No. 27, April 2017

## Food and Agriculture

- Animal Production and Health Newsletter, No. 66, July 2017
- Animal Production and Health Newsletter, No. 67, January 2018
- Approaches to Improvement of Crop Genotypes with High Water and Nutrient Use Efficiency for Water Scarce Environments — IAEA TECDOC
- Cosmic Ray Neutron Sensing: Use, Calibration and Validation for Soil Moisture Estimation — IAEA TECDOC
- Food and Environmental Protection Newsletter Vol. 20, No. 2, July 2017
- Food and Environmental Protection Newsletter Vol. 20, No.1, January 2017
- Guidelines for Developing Wetlands in Agricultural Catchments — IAEA TECDOC
- Insect Pest Control Newsletter No. 88, January 2017
- Insect Pest Control Newsletter No. 89, July 2017
- Insect Pest Control Newsletter No. 90, January 2018
- Managing Irrigation Water to Enhance Crop Productivity under Water-limiting Conditions: A Role for Isotopic Techniques — IAEA TECDOC
- Manual of Good Practice in Food Irradiation — Technical Reports Series
- Manual of Standard Operating Procedures for Veterinary Drug Residue Analysis — Training Course Series (in French)
- Manual of Standard Operating Procedures for Veterinary Drug Residue Analysis — Training Course Series (in Spanish)
- Plant Breeding and Genetics Newsletter, No. 38, January 2017
- Plant Breeding and Genetics Newsletter, No. 39, July 2017
- Soils Newsletter Vol.40 No.1, June 2017
- Soils Newsletter Vol.39 No.2, January 2017
- Soils Newsletter Vol.40 No.2, January 2018
- Use of Carbon Isotopic Tracers in Investigating Soil Carbon Sequestration and Stabilization in Agroecosystems — IAEA TECDOC

## **Human Health**

- Dosimetry of Small Static Fields Used in External Beam Radiotherapy — Technical Reports Series
- Nutritional & Health Related Environmental Studies Newsletter, No. 5, January 2017
- Nutritional & Health Related Environmental Studies Newsletter, No. 6, August 2017
- Radiotherapy in Cancer Care: Facing the Global Challenge — Non-serial Publications
- SSDL Newsletter Issue No. 66, June 2017
- SSDL Newsletter Issue No. 67, December 2017
- The Transition from 2-D Brachytherapy to 3-D High Dose Rate Brachytherapy: Training Material — Training Course Series (CD-ROM)

## **Radioisotope Production and Radiation Technology**

- Cyclotron Based Production of Technetium-99m — IAEA Radioisotopes and Radiopharmaceuticals Reports
- Uses of Ionizing Radiation for Tangible Cultural Heritage Conservation — IAEA Radiation Technology Series

## **Emergency Preparedness and Response**

- Guidelines on the Harmonization of Response and Assistance Capabilities for a Nuclear or Radiological Emergency — Emergency Preparedness and Response
- Joint Radiation Emergency Management Plan of the International Organizations — Emergency Preparedness and Response
- Operational Intervention Levels for Reactor Emergencies — Emergency Preparedness and Response

## **Safety of Nuclear Installations**

- Assessment of Equipment Capability to Perform Reliably under Severe Accident Conditions — IAEA TECDOC
- Assessment of Vulnerabilities of Operating Nuclear Power Plants to Extreme External Events — IAEA TECDOC
- Communication and Consultation with Interested Parties by the Regulatory Body — IAEA Safety Standards Series
- Ensuring Robust National Nuclear Safety Systems — Institutional Strength in Depth — INSAG Series
- Governmental, Legal and Regulatory Framework for Safety — IAEA Safety Standards Series (in Chinese)
- Governmental, Legal and Regulatory Framework for Safety — IAEA Safety Standards Series (in French)
- Governmental, Legal and Regulatory Framework for Safety — IAEA Safety Standards Series (in Russian)
- Governmental, Legal and Regulatory Framework for Safety — IAEA Safety Standards Series (in Spanish)
- Leadership and Management for Safety — IAEA Safety Standards Series (in Arabic)
- Leadership and Management for Safety — IAEA Safety Standards Series (in Chinese)
- Leadership and Management for Safety — IAEA Safety Standards Series (in Russian)
- Leadership and Management for Safety — IAEA Safety Standards Series (in Spanish)
- Safety Aspects of Nuclear Power Plants in Human Induced External Events: General Considerations — Safety Reports Series
- Safety Aspects of Nuclear Power Plants in Human Induced External Events: Margin Assessment — Safety Reports Series
- Safety Assessment for Facilities and Activities — IAEA Safety Standards Series (in Arabic)
- Safety Assessment for Facilities and Activities — IAEA Safety Standards Series (in Chinese)
- Safety Assessment for Facilities and Activities — IAEA Safety Standards Series (in French)
- Safety Assessment for Facilities and Activities — IAEA Safety Standards Series (in Russian)
- Safety of Nuclear Fuel Cycle Facilities — IAEA Safety Standards Series
- Safety of Nuclear Fuel Cycle Research and Development Facilities — IAEA Safety Standards Series
- Safety of Nuclear Fuel Reprocessing Facilities — IAEA Safety Standards Series

- Safety of Nuclear Power Plants: Commissioning and Operation — IAEA Safety Standards Series (in Arabic)
- Safety of Nuclear Power Plants: Commissioning and Operation — IAEA Safety Standards Series (in Chinese)
- Safety of Nuclear Power Plants: Commissioning and Operation — IAEA Safety Standards Series (in Russian)
- Safety of Nuclear Power Plants: Design — IAEA Safety Standards Series (in Arabic)
- Safety of Nuclear Power Plants: Design — IAEA Safety Standards Series (in Chinese)
- Safety of Nuclear Power Plants: Design — IAEA Safety Standards Series (in French)
- Safety of Nuclear Power Plants: Design — IAEA Safety Standards Series (in Spanish)
- Safety of Research Reactors — IAEA Safety Standards Series (in Chinese)
- Safety of Research Reactors — IAEA Safety Standards Series (in French)
- Safety of Research Reactors — IAEA Safety Standards Series (in Russian)
- Safety of Research Reactors — IAEA Safety Standards Series (in Spanish)
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (in Chinese)
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (in Russian)
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (in Spanish)
- The Management System for Nuclear Installations— IAEA Safety Standards Series (in Spanish)

### **Radiation and Transport Safety**

- Preparedness and Response for a Nuclear or Radiological Emergency — IAEA Safety Standards Series (in French)
- Preparedness and Response for a Nuclear or Radiological Emergency — IAEA Safety Standards Series (in Russian)
- Severe Accident Mitigation through Improvements in Filtered Containment Vent Systems and Containment Cooling Strategies for Water Cooled Reactors — IAEA TECDOC

### **Management of Radioactive Waste**

- An International Peer Review of the Safety Options Dossier of the Project for Disposal of Radioactive Waste in Deep Geological Formations (Cigéo) — Non-serial
- Contents and Sample Arguments of a Safety Case for Near Surface Disposal of Radioactive Waste — IAEA TECDOC
- Generic Post-closure Safety Assessment for Disposal of Disused Sealed Radioactive Sources in Narrow Diameter Boreholes — IAEA TECDOC
- Management of Large Volumes of Waste Arising in a Nuclear or Radiological Emergency — IAEA TECDOC
- Model Regulations for Borehole Disposal Facilities for Radioactive Waste — IAEA TECDOC
- Selection of Technical Solutions for the Management of Radioactive Waste — IAEA TECDOC
- Use of the Benchmarking System for Operational Waste from WWER Reactors — IAEA TECDOC

### **Nuclear Security**

- Identification of High Confidence Nuclear Forensics Signatures — IAEA TECDOC
- International Conference on Effective Nuclear Regulatory Systems: Sustaining Improvements Globally — IAEA Proceedings Series
- International Conference on Nuclear Security: Commitments and Actions — IAEA Proceedings Series
- Nuclear Security Culture — IAEA Nuclear Security Series (in Spanish)
- Nuclear Security Systems and Measures for Major Public Events — IAEA Nuclear Energy Series
- Radiological Crime Scene Management — IAEA Nuclear Security Series (in Arabic)
- Security of Nuclear Information — IAEA Nuclear Security Series (in Arabic)
- Security of Nuclear Information — IAEA Nuclear Security Series (in French)
- Self-assessment of Nuclear Security Culture in Facilities and Activities — IAEA Nuclear Security Series

### **Nuclear Verification**

- Guidance for States Implementing Comprehensive Safeguards Agreements and Additional Protocols — IAEA Services Series (in Arabic)
- Guidance for States Implementing Comprehensive Safeguards Agreements and Additional Protocols — IAEA Services Series (in French)
- International Safeguards in the Design of Fuel Fabrication Plants — IAEA Nuclear Energy Series
- International Safeguards in the Design of Uranium Conversion Plants — IAEA Nuclear Energy Series
- Safeguards Implementation Guide for States with Small Quantities Protocols — IAEA Services Series (in Arabic)



**Table A34. Technical cooperation training courses held in 2017**

**Energy**

- RTC on Financial Analysis of Power Sector Projects Using the IAEA's FINPLAN Model  
Austria
- Interregional Training Course on Stakeholder Communications Tools and Safety Aspects for the Uranium Production Cycle Activities  
Malaysia
- RTC on Analysis of Atmospheric Particulate Matter and Chemical Components (Black Carbon, PM, Organic Carbon, Dust, Major Ions)  
Ghana
- RTC on Evaluation of Cost-effective Energy Technologies, including Nuclear Power, as Nationally Determined Contributions to Climate Change Mitigation  
Romania
- Interregional Training Course on the Implementation of National Requirements for Nuclear Power Programmes  
United Arab Emirates
- Practical Training Course on Planning and Implementation of Nuclear Facility Decommissioning and Remediation of Radioactively Contaminated Sites  
United States of America
- RTC on Validation of X ray Emission Techniques for the Analysis of Air Particulate Matter  
Austria
- RTC on Advanced Multivariate Statistics Techniques in Data Evaluation  
Uruguay
- Interregional Training Course on Supporting Nuclear Power Infrastructure Capacity Building focusing on Preparation of Construction and Licensing Process for New or Expanding Nuclear Power Programmes  
Republic of Korea
- RTC on Management Options for Disused Sealed Radioactive Sources of Category 3-5  
Islamic Republic of Iran
- RTC on Evaluation of Cost-effective Energy Technologies, Including Nuclear Power, as NDCs for Climate Change Mitigation  
United States of America
- RTC (hands-on) on DSRS Management to Assist MSs to Manage DSRS in a Safe and Secure Manner Category 3-5 Sources  
Malaysia
- RTC on Life-cycle Management of Uranium Projects  
Democratic Republic of the Congo
- Interregional Training Course on Management Systems and the Development of Organisational Culture for Safety  
United States of America
- Regional (AFRA) Training Course on Assessing the Role of Cost-effective Energy Technologies including Nuclear Power as NDCs for Climate Change Mitigation  
Ethiopia
- Interregional Training Course on Advanced Course in Financing Nuclear Power Plant (NPP) Projects  
United States of America
- IAEA-UNECE Interregional Training Course on Unconventional Uranium Resource Assessment, UNFC Classification and Reporting with Particular Emphasis on Uranium as Co- or By-product  
Argentina
- Interregional Training Course on Successful Launching and Mentoring of Nuclear Power Programme in Korea  
Republic of Korea
- RTC on Evaluation of Energy Options, including Nuclear Power, as NDCs for Climate Change Mitigation  
Austria

- Interregional Training Course on Nuclear Energy Management School Focusing on Nuclear Infrastructure Development  
Russian Federation
- Interregional Training Course on the Licensing Process for Nuclear Power Plants  
Russian Federation
- Interregional Training Course on Establishing a National Position for New Nuclear Power Programmes  
Russian Federation
- Interregional Training Course on Safety Review and Assessment by the Regulatory Body  
Russian Federation
- Interregional Training Course on Human Resource Development and Workforce Planning for New or Expanding Nuclear Power Programmes  
Austria
- IAEA Training Course on Nuclear Power Infrastructure Development  
Japan
- TC Training Course Covering Essential Knowledge on Nuclear Power Plant Design Safety  
Italy
- TC Training on Finalizing Sub-regional Power Study for Southern Africa (use of the IAEA's tool MESSAGE)  
Botswana
- RTC No. 4 on Infrastructure Development and Safety Assessment of WWER-type Pressurized Water Reactors with Advanced Safety Features  
Russian Federation
- TC Training on Finalizing Sub-regional Power Study for Central Africa (use of the IAEA's tool MESSAGE)  
Cameroon

#### **Food and Agriculture**

- RTC on Fruit Fly Detection & Surveillance and Databases & Data Analysis  
Kenya
- RTC on Strengthen National Planning in the Formulation and Implementation of Tsetse and Trypanosomiasis Intervention Programmes in Member States of the ECOWAS  
Burkina Faso
- RTC on Advanced Mutation Techniques for Induction and Screening of Green Traits in Crops  
China
- RTC on Basic Maintenance and Troubleshooting of Food Safety Analytical Instrumentation including Effective Use of Instrument Software  
Singapore
- RTC on Mosquito Identification, Surveillance and Trapping Methods for Area-wide Integrated Mosquito Management in the European Area  
Austria
- RTC on Soil Sampling Strategy, Harmonization of the Sampling Procedures and Radionuclide Analyses  
Morocco
- RTC on Integrated Agricultural Production Systems  
Kuwait
- RTC on Induced Mutations and Supportive Biotechnologies for Cereal Breeding  
Austria
- RTC on Radio Receptor Assays, Related Screening and Confirmatory Methods for Veterinary Drug Residues and Associated Chemical/Natural Food Contaminants  
Thailand
- RTC on Mosquito Detection, Surveillance, Data Recording and Analysis for Area-Wide Integrated Mosquito Management in the European Area  
Spain
- RTC on Biotic Resistance and Plant Pathology (1Q 2017)  
Costa Rica

- Train-the-Trainer Course in Basic Maintenance and Troubleshooting of Analytical Instruments for Food and Environmental Safety Monitoring and Control Programmes  
South Africa
- Regional (AFRA) Training Course on Food Microbiology Testing  
Sudan
- RTC on Sampling Strategies  
Costa Rica
- Training Course on Pesticides  
Benin
- Regional (AFRA) Training Course on Method Development/Validation for Mycotoxins Analysis in Food/Feed  
Zambia
- RTC on Free Open Source Software for GIS and Data Management Applied to Fruit Flies in Southeast Asia  
Thailand
- RTC on Methodologies and Mechanisms for Screening against Abiotic Stresses Using Mutation Breeding and Molecular Markers  
Thailand
- RTC on Animal breeding and selection practices  
Argentina
- Interregional Training Course on Pesticides, Minor Use/Species and Related Plant Products of Public Health and Trade Importance  
Singapore
- RTC on the Use of the IAEA Genetic Sequencing Services for Member States  
Morocco
- Regional (AFRA) Training Course on the Use of Advanced Nuclear and Related Tools for Agricultural Water Management and Advance Use of Crop Simulation Model (AquaCrop)  
Austria
- Regional (AFRA) Training Course on Improving Resilience to Drought Through Mutation Breeding  
Namibia
- Regional (AFRA) Training Course on Analytical Methods for Veterinary Drug Residues in Foods Using Radio Receptor Assay and Complementary Techniques  
Morocco
- Interregional Training Course on Analytical Method Harmonization for Monitoring of Marine Biotoxins in Foods of Public Health and Trade Significance  
Costa Rica
- Regional (AFRA) Training Course on Vector Mapping and Surveillance  
Uganda
- Group Training Course for New Comers  
Algeria
- Regional (AFRA) Training Course on Methodologies and Mechanisms for Screening of Mutants against Biotic Stresses  
Cameroon
- RTC on Analytical Methods for Residues of Selected Pesticides  
Uruguay
- RTC on the Use of Decision Making Tools for Remediation Measures in Animal Production Systems  
Hungary
- TC Training Course on Harmonization of Sample Preparation and Analytical Methods  
Colombia
- RTC on Health Management of Small Ruminants Including Parasites Control  
Peru
- RTC on Field Procedures for Mosquito Population Surveillance, Detection and Quantification  
Albania

- TC RTC on Genetic Improvement to Enhance the Quality of Crops Through Mutation Induction  
Peru
- TC Training on Identification of Non-native Tephritid Fruit Flies of Quarantine Significance  
Austria
- TC Interregional Training Course on Radionuclides  
Singapore
- IAEA/RCA Training Course on Best Practices to Improve Soil Fertility and Crop Productivity under Marginal Lands Using Conventional and Isotopic Techniques  
Malaysia
- TC RTC on Quarantine and International Standards for Phytosanitary Measures for Fruit Flies in Southeast Asia  
Viet Nam
- TC Training on Use of the Sterile Insect and Related Techniques for the Area-wide Integrated Management of Plant, Animal and Human Insect Pests  
Guatemala and Mexico
- Regional training on Assisted Reproductive Techniques to Enhance Small Ruminant Productivity  
Argentina
- TC Training on Rice Breeding for Drought Tolerance  
Philippines
- TC Training on Precision Technology for Sustainable Agriculture and Measurement of Green House Gases Under Field and Laboratory Conditions  
Malaysia
- RTC on the Use of Drones for the Release of Sterile Male Tsetse Flies for the SIT  
Uganda

#### **Health and Nutrition**

- Regional (AFRA) Training Course on Quality Management in Radiotherapy  
Zimbabwe
- Introduction to Quality Practices in Diagnostic Radiology for Radiographers/Radiological Technologists  
United States of America
- RTC on Assessment of Body Composition, including Analysis of Deuterium Enrichment by Fourier Transform Infrared Spectrometer (FTIR) with Quality Assurance (QA)  
Albania
- Regional (AFRA) Training Course for NM Technologists on Dose and Patient Preparation for Adult and Paediatric NM Imaging, including Basic QA/QC of SPECT and SPECT/CT Equipment  
Tunisia
- RTC on Data Management  
Ethiopia
- RTC on Best Practices in Proficiency Tests for Measurement of Radionuclides in Environmental Samples  
Ethiopia
- RTC on Clinical Applications of Stereotactic Body Radiotherapy (SBRT) in Lung and Liver Cancers  
India
- RTC on Assessment of Physical Activity Using Accelerometers and Questionnaires  
Montenegro
- RTC for Physicians in Paediatric Radiotherapy  
Costa Rica
- Interregional Training Course on Data Management and Statistical Analysis  
Austria
- Regional (AFRA) Training Course for NM Technologists on Dose and Patient Preparation for Adult and Paediatric NM Imaging, including Basic QA/QC of SPECT and SPECT/CT Equipment (in English)  
United Republic of Tanzania
- RTC on Uncertainty Estimations for Radiation Measurements in Secondary Standard Dosimetry Laboratories  
Austria

- RTC on Analysis of the Data Collected in RLA6073 at National and Regional Level  
Uruguay
- RTC on the Procedures for the Establishment of Oncological Functional Units  
Panama
- RTC on Determination of Po-210 in Environmental Samples by Alpha-Particle Spectrometry  
Morocco
- RTC on QA/QC and Dosimetry in Interventional Radiology  
Italy
- RTC on Principles and Practice on the Use of Radiopharmaceuticals for Bone Pain Palliation and Treatment of Other Malignancies  
Philippines
- RTC on Intensity Modulated Radiotherapy for Breast Cancer, Pancreas Cancer, and Anorectal Cancer  
Japan
- IAEA-HICARE-CC International Training Course on Advance Radiation Therapy Technology  
Japan
- Regional (AFRA) Training Course on Radiopharmacy Operational Level III  
Morocco
- RTC on Intensity Modulated Radiation Therapy for Lung and Oesophageal Cancers  
Thailand
- RTC on Establishing a Basic Radiotherapy Center  
United States of America
- RTC on Patient Care for Nurses and Technologists in the Field of Radiation Medicine  
El Salvador
- RTC for Nuclear Medicine Physicians and Referring Physicians for the Strengthening of Capacities in Diagnosis and Treatment with Radionuclides in Paediatric  
Mexico
- Regional (AFRA) Training Course on QA/QC and Dosimetry Procedures for Radiography and Fluoroscopy Imaging  
Egypt
- ESMIT Spring Course  
Netherlands
- IAEA/ESTRO Teaching Course on Dose Modelling Verification for External Beam Radiotherapy  
Poland
- ESMIT Autumn Course  
Romania
- ESTRO Teaching Course on IMRT and other Conformal Techniques in Practice  
Spain
- ESMIT/ESTRO Joint Course on Molecular Imaging and Radiation Oncology  
France
- RTC on Modern Radiotherapy Using Linear Accelerators  
United States of America
- ESTRO Teaching Course on Physics for Modern Radiotherapy (Joint Course for Clinicians and Physicists)  
Romania
- ESTRO Teaching Course on Advanced Treatment Planning  
Spain
- Comprehensive Quality Management in Radiotherapy — Quality Assessment and Improvement  
Belgium
- Best Practice in Radiation Oncology — Train the RTT (Radiation Therapists) Trainers, Phase II (TTT cycle 2016-2017)  
Austria
- Regional Hands-on Training Course on Image Guided Radiation Therapy (IGRT)  
Netherlands

- Master in Advanced Radiotherapy Techniques  
Chile
- Introduction to Hybrid Imaging in Oncology (ESOR)  
Austria
- RTC on Update of High Dose Rate for Brachytherapy  
Chile
- RTC in Nuclear Medicine: New Developments in Molecular Imaging and Targeted Radionuclide Therapy  
Austria
- RTC on Advanced PET/CT  
Hungary
- RTC on Basic PET/CT  
Hungary
- RTC on the Implementation of the IAEA-TRS-483 Code of Practice for Small Photon Beam Dosimetry  
Cuba
- RTC on High Accuracy Radiotherapy: Technical and Physical Requirements (AMPR)  
Russian Federation
- RTC on the Role of Advanced Imaging in Clinical Radiotherapy (AMPR)  
Russian Federation
- RTC on Theranostics and Molecular Radiotherapy in Brussels, Belgium, from 2 to 6 October 2017  
Belgium
- RTC on Radiation Protection and Safety and Accident Prevention in Radiotherapy (FMBC)  
Russian Federation
- TC Regional (AFRA) Training Course on Infection and Oncologic Imaging Using Hybrid Imaging Technologies (SPECT/CT and PET-CT) ADVANCED COURSE (in English)  
South Africa
- RTC on Quality Audits of Intensity Modulated Radiation Therapy  
Singapore
- IAEA/RCA RTC on Theragnostics and Dementias  
Japan
- RTC on the Preparation and Application of Bone Pain Palliation Therapeutic Agents  
Indonesia
- RTC on Quality Assurance in Nuclear Cardiology  
Chile
- TC RTC on the Production of Mo-99 Using the Reaction Mo-98 and Molybdenum Trioxid  
Chile
- TC RTC for Nuclear and Referring Physicians in the Clinical Applications of Diagnostic and Therapeutic Techniques with Radionuclides with Emphasis on Hybrid Image with SPECT-CT  
Chile
- Radiobiology for Radiation Oncologists and Medical Physicists (FMBC)  
Russian Federation
- Regional Multidisciplinary Training Course on Quality and Optimization Practices in Computed Tomography (CT)  
Latvia
- Regional (AFRA) Training Course on Infection and Oncologic Imaging Using Hybrid Imaging Technologies (SPECT/CT and PET-CT)  
Nigeria

#### **Industrial Applications/Radiation Technology**

- Regional (AFRA) Training Course on Quality Management in Radiotherapy  
Zimbabwe
- Introduction to Quality Practices in Diagnostic Radiology for Radiographers/Radiological Technologists  
United States of America

- RTC on Assessment of Body Composition, including Analysis of Deuterium Enrichment by Fourier Transform Infrared Spectrometer (FTIR) with Quality Assurance (QA)  
Albania
- IAEA/RCA RTC on the Use of Isotope Techniques for Groundwater Dating  
Australia
- RTC on Training and Certification on Radiotracers and Sealed Sources Applications  
France
- RTC on Safe Operation of Gamma and E-beam Facilities for Radiation Processing  
Serbia
- RCA RTC on Digital Industrial Radiography and industrial Computed Tomography  
Malaysia
- RTC on Capacity Building in Computed Tomography (CT) for NDT in Member States  
India
- RTC on Radiation Processed Advance Materials for Health Care, Agricultural and Environmental Applications  
Chile
- Regional (AFRA) Training Course on 2nd AFRA Research Reactor School  
Morocco
- RTC on Dosimetry at Electron Beam Facilities  
Russian Federation
- Training for Sealed Sources Applications in Industry — Enhanced Gamma Scanning of Industrial Process Columns  
Peru
- TC Regional Training to Review Dosimetry Inter-comparison Results and establish Quality Control in Industrial Irradiators  
Argentina

#### **Nuclear Knowledge Development and Management**

- IAEA/KAERI Training Course Using Simulators 2017  
Republic of Korea
- Nuclear Law Institute  
Austria
- RTC on Hybrid Imaging and Therapeutic Nuclear Medicine Technologies and its Applications in Thyroid Conditions including Liver and Prostate Cancer Theragnostic  
Pakistan
- Third RTC on the Development of e-Learning Courses for Teachers  
Costa Rica
- RTC on the Nuclear and Nuclear Related Techniques for Early and Rapid Detection and Differentiation of the Middle East Respiratory Syndrome in Camels  
Austria
- 2017 WNU Summer Institute  
Sweden
- International School of Nuclear Law  
France
- Regional (AFRA) Training Course on Capacity Building on Technical Project Management Life Cycle  
Austria
- TC RTC on Chemical and Structural Characterization of Cultural Heritage Objects by SEM and XRD  
Mexico
- KOICA-IAEA-KAERI Joint Training Program on Fundamentals of Radioisotopes and Radiation Technology  
Republic of Korea
- RTC on Advanced Methods in Positive Matrix Factorization (PMF) and Potential Source Contribution Functions (PSCF)  
Portugal

- Train-the-Trainers RTC for Radiation Protection Officers (for English-speaking countries)  
Ghana
- TC Training — Train-the-Trainers RTC for Radiation Protection Officers (for French-speaking Countries)  
Côte d'Ivoire
- TC Training on IAEA Model for Analysis of Energy Demand (MAED)  
Austria

### **Safety and Security**

- RTC on Individual Monitoring Internal Radiation Sources (IMIRS)  
Austria
- RTC on Radiation Protection Safety in Nuclear Medicine  
Zambia
- RTC on Organization and Competence of the Regulatory Body  
Lebanon
- Interregional Training Course on Environmental Impact Assessment (EIA) for Decommissioning and Environmental Remediation (D&ER) Projects  
United Kingdom
- 3rd School for Drafting Regulations in Asia Pacific Region  
Austria
- RTC on Medical Preparedness and Response to Radiation Emergencies  
Kuwait
- RTC on Effective and Sustainable Regulatory Control of Radiation Sources  
Jordan
- RTC on Radiation Protection in Fluoroscopy Guided Interventional Procedures (in Russian)  
Azerbaijan
- Regulatory Oversight of Human and Organizational Factors (HOF) at Nuclear Installations  
Albania
- Post-Graduate Educational Training Course on Radiation Protection and the Safety of Radiation Sources (PGEC)  
Belarus
- RTC on National Register for Radiation Sources including Regulatory Authority Information System RAIS 3.4 Web  
Trinidad and Tobago
- School for Drafting Regulations on Radiation Safety  
Austria
- Training Course on Radiation Protection and Safety of Patients in Nuclear Medicine  
Niger
- Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources  
Malaysia
- RTC on the Preparation, Conduct, and Evaluation of Emergency Exercise  
Bahrain
- RTC on Enhancing Energy Planning, Nuclear Power Infrastructure Development and Nuclear Safety Regulatory Oversight  
Austria
- RTC on Regulatory Oversight of Management for Safety and Management System  
Poland
- RTC on Authorization and Inspection of Radiation Sources  
Canada
- RTC for Regulators on Authorization and Inspection of Radiation Sources (in French)  
Cameroon
- RTC (Train the Trainers) for Senior Educators on Radiation Emergency Preparedness and Response  
Austria



- Regional Train the Trainers Course for Radiation Protection Officers of Medical and Industrial Facilities  
Thailand
- Regional Train the Trainers Course for Radiation Protection Officers  
Greece
- RTC No. 3 on Infrastructure Development and Safety Assessment of WWER-type Pressurized Water  
Reactors with Advanced Safety Features  
Russian Federation
- RTC on Radioactive Waste Management  
Morocco
- RTC on Regulatory Enforcement  
Zimbabwe
- Train the Trainers Course for Radiation Protection Officers of Medical and Industrial Facilities  
Azerbaijan
- Interregional Training Course on Practical Hands-on Training on the Management of Category 3-5 DSRS  
Morocco
- Interregional Training Course on Disposal Methodology  
Indonesia
- Interregional Training Course on Inventory Verification and Record Keeping  
Cuba
- RTC on Radiation Emergency Management for African Member States  
Austria
- RTC BRA on Regulatory Control in Radiosurgery Practices  
Brazil
- RTC for Radiological Assessors in Nuclear or Radiological Emergency  
Ghana
- RTC on Public Communications in Nuclear and Radiological Emergencies  
Argentina
- Regional Training Course: School on Radiation Emergency Management  
Mexico
- RTC on Advanced Medical Response  
Brazil
- Postgraduate Specialisation Training Course on Radiation Protection and Safety of Radiation Sources  
Argentina
- DT RTC on Establishment of National Registry of Radiation Sources Using RAIS 3.4 Web.  
Tunisia
- Regional School of Radiation Emergency Management  
Austria
- RTC on the Clearance of Radioactive Waste from Regulatory Control  
Slovakia
- TC RTC on Quality Management Systems for Technical Services in Radiation Safety  
Cuba
- TC RTC on Regulatory Control of PET-CT Cyclotron Facilities  
Mexico
- TC RTC on Transport Safety  
Uruguay
- Regional Advanced Training Course on Medical Preparedness and Response to Radiation Emergencies  
Republic of Korea
- TC Training on Advanced Detection and Differentiation of AVI Viruses in Light of the Current  
Outbreaks in the Europe Region  
Austria
- TC Training on Management Systems, Sarajevo, Bosnia and Herzegovina  
Bosnia and Herzegovina
- TC RTC on Biodosimetry  
Costa Rica

- Train-the-Trainers Regional Course on Emergency Consequence Management  
Saudi Arabia
- RTC for First Time OSART/Independent Oversight Reviewers  
Brazil
- TC Training on Wildlife (Bats) Capture and Sampling for Surveying Emerging Zoonotic Diseases  
Sierra Leone
- RTC in the Application, the Use and the Maintenance of Field Survey Instruments  
Belarus
- TC Training Course on Conditioning of Neutron and Low Gamma Sealed Sources  
Egypt
- Interregional Training Course on Orphan Sources Search and Recovery  
Ethiopia
- TC RTC on OSL Systems  
Cameroon
- Regional School of Radiation Emergency Management  
Republic of Korea
- RTC in the Application, the Use and the Maintenance of Laboratory Instruments for Differentiation and Quantification of Radioisotopes in Animals and Animal Products  
Belarus
- RTC on Radiation Protection and Optimization in High Dose Brachytherapy  
Paraguay
- RTC (AFRA) on Use of Virtual Instrumentation for Developing and Refurbishing of Nuclear Instruments  
Algeria

#### **Water and the Environment**

- RTC on Individual Monitoring Internal Radiation Sources (IMIRS)  
Austria
- RTC on Radiation Protection Safety in Nuclear Medicine  
Zambia
- RTC on Organization and Competence of the Regulatory Body  
Lebanon
- Interregional Training Course on Environmental Impact Assessment (EIA) for Decommissioning and Environmental Remediation (D&ER) Projects  
United Kingdom
- 3rd School for Drafting Regulations in Asia Pacific Region  
Austria
- IAEA/RCA RTC on Sampling and Basic Analytical Techniques  
Indonesia
- RTC on Evaluation of Aquifer Pollution by Means of Hydrochemical and Isotopic Tools  
Bolivia
- Interregional Training Course on Standard Operating Procedures (SOP) for Deuterium Dilution Technique to Assess Body Composition and Deuterium Dose-to-the Mother Technique to Assess Breastfeeding  
Morocco
- RTC on Measurements of Carbonate Chemistry Parameters in Seawater in the Context of Ocean Acidification  
Ghana
- RTC on the Theory and Practical Application of RESRAD-BIOTA and other Codes in the RESRAD Family for the Determination of Dose, Risk and Authorized Limits  
United States of America
- Advanced RTC on Measurement of Naturally Occurring Radionuclides in Environmental and NORM Samples by Gamma-ray Spectrometry  
Germany

- Support to the Training Workshop on Quality Assurance for Nuclear Spectrometry  
Austria
- TC Training on Method Validation, Quality Assurance and Quality Control in Alpha-particle and Gamma-ray Spectrometry  
United Republic of Tanzania
- TC Training on the Role of Isotopes in Integrated Water Resources Management  
Morocco
- RTC on Strengthening Regional Capacities for Marine Risk Assessment Using Nuclear and Related Techniques  
Senegal
- TC Training Course No 3 on the Modalities and Rules of Site Remediation Programme Management  
Russian Federation

**Table A35. Agency corporate social media accounts**

**Facebook**

*English*

<https://www.facebook.com/iaeaorg/>

*Arabic*

<https://www.facebook.com/IAEAarabic>

*French*

<https://www.facebook.com/aieaorg>

*Spanish*

<https://www.facebook.com/oieaorg>

*Russian*

<https://www.facebook.com/magateorg/>

**Twitter**

<http://twitter.com/iaeaorg>

**Instagram**

<http://instagram.com/iaeaorg>

**Youtube**

<http://www.youtube.com/user/IAEAvideo>

**Table A36(a). Number and types of facilities under Agency safeguards by State during 2017**

State <sup>a</sup>	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					2		5
Belgium	6	3		3			5	5	22
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	2	1				1			4
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	5	1					2	1	9
France				1	1	1			3
Georgia		1						1	2
Germany	24	13		1	1	1	24	6	70
Ghana		1							1
Greece		1							1
Hungary	2	2					2		6
India	8			2			2		12
Indonesia		3		2			1	1	7
Iran, Islamic Republic of	4	6	2	2		3	1	3	21
Iraq							1		1
Israel		1							1
Italy	5	6			2		6	3	22
Jamaica		1							1
Japan	63	20	2	8	6	3	8	15	125
Jordan		1						1	2
Kazakhstan	1	4		2			6		13
Korea, Republic of	32	3		1			3	7	46

Latvia		1						1
Libya		1					1	2
Lithuania	1					3		4
Malaysia		1						1
Mexico	2	1	1			1		5
Morocco		1						1
Netherlands	2	3			1	2	1	9
Nigeria		1						1
Norway		2					1	3
Pakistan	6	2						8
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	8			1		6	1	16
Sweden	12	1	1	1		2		17
Switzerland	5	3				2	3	13
Syrian Arab Republic		1						1
Tajikistan		1						1
Thailand		3						3
Turkey		2		1				3
Ukraine	21	2		1		8	5	37
United Arab Emirates	4							4
United Kingdom					1	2		3
United States of America						1		1
Uzbekistan		2						2
Venezuela, Bolivarian Republic of		1						1
Viet Nam		1						1

<sup>a</sup> 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:** 1. The numbers indicated here include projected and operational facilities, and facilities at the decommissioning stage.  
2. The Agency was also applying safeguards at 15 facilities in Taiwan, China.

**Table A36(b). Facilities under Agency safeguards or containing safeguarded nuclear material during 2017**

State <sup>a</sup>	Name of facility	Location
<b>Power reactors</b>		
Argentina	Atucha I Nuclear Power Plant	Lima
	Atucha II Nuclear Power Plant	Lima
	Carem	Lima
	Embalse Nuclear Power Plant	Embalse
Armenia	Armenian NPP	Metsamor
	Armenian NPP 3	Metsamor
Belarus, Republic of	Belarus 1	Ostrovets
	Belarus 2	Ostrovets
Belgium	Doel 1 & 2 NPP	Doel
	Doel 3 NPP	Doel
	Doel 4 NPP	Doel
	Tihange 1 NPP	Tihange
	Tihange 2 NPP	Tihange
	Tihange 3 NPP	Tihange
Brazil	Angra 1	Angra Dos Reis
	Angra 2	Angra Dos Reis
	Angra 3	Angra Dos Reis
Bulgaria	NPP Kozloduy 1 & 2	Kozloduy
	NPP Kozloduy 3 & 4	Kozloduy
	NPP Kozloduy 5 & 6	Kozloduy
Canada	Bruce 'A' N.G.S.	Tiverton, Ontario
	Bruce 'B' N.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
	HTR-PM	Rongcheng, Shandong Province
Czech Republic	NPP Dukovany (Edu-1)	Dukovany
	NPP Dukovany (Edu-2)	Dukovany
	NPP Temelin	Temelin
Finland	Hanhikivi-I	Pyhaejoki
	Loviisa NPP	Loviisa

State <sup>a</sup>	Name of facility	Location
	TVO I	Olkiluoto
	TVO II	Olkiluoto
	TVO III	Olkiluoto
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 NPP Ltd. I	Paks
	MVM Paks NPP Ltd. II	Paks
India	KAPS 1 & 2	Surat, Gujrat
	KAPS 3 & 4	Surat, Gujrat
	KKNPP	Kudankulam, Tamil Nadu
	NAPS 1 & 2	Bulandshahar, Uttar Pradesh
	RAPS 1 & 2	Rawatbhata, Rajasthan
	RAPS 3 & 4	Rawatbhata, Rajasthan



State <sup>a</sup>	Name of facility	Location
	RAPS 5 & 6	Rawatbhata, Rajasthan
	TAPS	Tarapur, Maharashtra
Iran, Islamic Republic of	Bushehr NPP	Bushehr
	Bushehr NPP	Bushehr
	Bushehr NPP	Bushehr
	IR360 NPP	Darkhovein
Italy	Area Disattivazione Caorso	Caorso
	Centrale Latina	Borgo Sabotino
	Centrale Nucleare di Trino	Trino Vercellese
	Cirene (On Load)	Borgo Sabotino
	So.G.I.N. CN del Garigliano	Sessa Aurunca (CE)
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	

State <sup>a</sup>	Name of facility	Location
	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
	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	Furui-Gun, Hokkaido

State <sup>a</sup>	Name of facility	Location
	Tomari-2	Furuu-Gun, Hokkaido
	Tomari-3	Furuu-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
	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

State <sup>a</sup>	Name of facility	Location
	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
	Kanupp-2	Karachi
Philippines	BNPP	Morong, Bataan
Romania	Cernavoda-3	Cernavoda
	Cernavoda-4	Cernavoda
	CNE Cernavoda 1	Cernavoda
	CNE Cernavoda 2	Cernavoda
Slovakia	JAVYS NPP A-1	Jaslovske Bohunice
	JAVYS NPP V-1	Jaslovske Bohunice
	NPP Mochovce Units 1 & 2	Mochovce
	NPP Mochovce Units 3 & 4	Mochovce
	V-2 NPP	Jaslovske Bohunice
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 Garona	Santa Maria de Garona
	CN Trillo-1	Trillo
	CN Vandellos-2	Vandellos
Sweden	Barsebaeck Unit 1	Loeddekoepinge

State <sup>a</sup>	Name of facility	Location
	Barsebaeck Unit 2	Loeddekoepinge
	Forsmark Unit 1	Oesthammar
	Forsmark Unit 2	Oesthammar
	Forsmark Unit 3	Oesthammar
	Oskarshamn Unit 1	Oskarshamn
	Oskarshamn Unit 2	Oskarshamn
	Oskershamn Unit 3	Oskarshamn
	Ringhals 1	Ringhals
	Ringhals 2	Ringhals
	Ringhals 3	Ringhals
	Ringhals 4	Ringhals
Switzerland	KKB Beznau-I	Beznau Doettingen
	KKB Beznau-II	Beznau Doettingen
	KKG Goesgen	Goesgen Daeniken
	KKL Leibstadt	Leibstadt
	KKM Muehleberg	Muehleberg
Ukraine	Chernobyl NPP, Unit 1	Chernobyl
	Chernobyl NPP, Unit 2	Chernobyl
	Chernobyl NPP, Unit 3	Chernobyl
	Chernobyl NPP, Unit 5	Chernobyl
	Chernobyl NPP, Unit 6	Chernobyl
	Khmelnitski 1	Neteshin
	Khmelnitski 2	Neteshin
	Khmelnitski 3	Neteshin
	Khmelnitski 4	Neteshin
	Rovno 1 & 2	Kuznetsovsk
	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

State <sup>a</sup>	Name of facility	Location
	Zaporozhe 5	Energodar
	Zaporozhe 6	Energodar
United Arab Emirates	BNPP-1	Barakah
	BNPP-2	Barakah
	BNPP-3	Barakah
	BNPP-4	Barakah
<b>Research reactors and critical assemblies</b>		
Algeria	Es Salam Reactor	Ain Oussera
	Nur Reactor	Draria-Bp29 Wilaya de Tipaza
Argentina	Argentine Reactor 0 (RA-0)	Cordoba
	Argentine Reactor 1 (RA-1)	Buenos Aires
	Argentine Reactor 3 (RA-3)	Centro Atomico Ezeiza
	Argentine Reactor 4 (RA-4)	Rosario
	Argentine Reactor 6 (RA-6)	Centro Atomico Bariloche
	Argentine Reactor 8 (RA-8)	Pilcaniyeu
	Argentine Reactor 10 (RA-10)	Centro Atomico 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
	Venus-CEN	Mol
Brazil	Brazilian Multipurpose Reactor	Iperó, São Paulo
	CDTN/IRP-R1 Reactor	Belo Horizonte
	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 Nuclear Reactor	Hamilton, Ontario

State <sup>a</sup>	Name of facility	Location
	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 R. Reactor	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
	SUR-100 FHU	Ulm
	SUR-100 Hannover	Hannover
	SUR-100 Stuttgart	Stuttgart
	SUR100-RWTH	Aachen
	TRIGA Mainz	Mainz
Ghana	GHARR-1 Ghana Research React. 1	Legon-Accra
Greece	GRR-1	Attikis
Hungary	Budapest Research Reactor	Budapest

State <sup>a</sup>	Name of facility	Location
	Training Reactor	Budapest
Indonesia	ChTkn	Bandung
	PPNY	Yogyakarta
	RSG-GAS	Serpong
Iran, Islamic Republic of	Esfahan MNSR	Esfahan
	FARS Research Reactor FRR	Shiraz
	HWZPR	Esfahan
	KHRR	Arak
	LWCR	Tehran
	Tehran Research Reactor (TRR)	Tehran
Israel	Israel Res. Reactor (IRR1)	Soreq
Italy	AGN-201	Palermo
	CEC-Complexe-Essor	Ispira
	CISAM-RTS-1	San Piero a Grado
	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
	NSRR	Tokai-Mura, Ibaraki-Ken
	Rikkyo	Nagasaka, Kanagawa-Ken
	TCA	Tokai-Mura, Ibaraki-Ken



State <sup>a</sup>	Name of facility	Location
	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 Metropol. City
	Hanaro	Taejeon
	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	CNIP RP-10 R. Reactor	Lima
	RP-0 R. Reactor	Lima
Philippines	PRR-1	Quezon City, Diliman
Poland	Anna & Agata	Otwock-Świerk
	Maria	Otwock-Świerk
Portugal	IST (CTN) RPI	Sacavem
Romania	IFIN-HH	Magurele
	TRIGA Research & MTR	Pitești-Mioveni
Serbia	RA-RB	Vinča
Slovenia	TRIGA II	Ljubljana
South Africa	Safari-I Research Reactor	Pelindaba

State <sup>a</sup>	Name of facility	Location
Sweden	Studsvik AB and AB Svafo	Studsvik
Switzerland	AGN 211-P	Basel
	Crocus	Lausanne
	Proteus	Villigen
Syrian Arab Republic	MNSR	Damascus
Tajikistan	Argus Research Reactor	Dushande
Thailand	MNSR	Nakhon Ratchasima Province
	ONRC	Ongkharak
	TRR-1	Bangkok
Turkey	Çekmece 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 Reactor	Tashkent
	WWR-SM Reactor	Ulugbek
Venezuela, Bolivarian Republic of	RV-1 Ivic R. Reactor	Altos de Pipe
Viet Nam	Da Lat Research Reactor	Da Lat, Lam Dong
<b>Conversion plants</b>		
Algeria	Pilot Uranium Conversion Plant	Draria Nuclear Research Center
Argentina	Experimental Dry Conversion	Pilcaniyeu
	UF <sub>6</sub> Conversion Plant	Pilcaniyeu
	UO <sub>2</sub> Conversion Plant	Cordoba
	Uranium Powder Production Fac.	Polo Cientifico, Tecnologico y Inn.
Brazil	USEXA	Iperó, São Paulo
Canada	Blind River	Blind River, Ontario
	Port Hope	Port Hope, Ontario
Chile	Lab. Experiment de Conversion	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

State <sup>a</sup>	Name of facility	Location
	HEU/LEU Conversion Plant	Pelindaba
Sweden	RMA	Stenstorp
<b>Fuel fabrication plants</b>		
Algeria	UDEEC	Draria Nuclear Research Center
Argentina	ECRI	Buenos Aires
	FECN	Ezeiza
	R. Reactor Fuel Fab. Plant	Ezeiza
Belgium	FBFC DNU Fab.	Dessel
	FBFC PU Fab.	Dessel
	N.V. BN	Dessel
Brazil	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
	BWXT, Peterborough	Peterborough, Ontario
	BWXT, Toronto	Toronto, Ontario
Chile	United de Metalur, Fisica (UMF)	Santiago, Chile
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
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
	PFPP	Tokai-Mura, Ibaraki-Ken
	PPFF	Tokai-Mura, Ibaraki-Ken

State <sup>a</sup>	Name of facility	Location
Kazakhstan	Fuel Assembly Fabrication Plant	Ust-Kamenogorsk
	UMP	Ust-Kamenogorsk
Korea, Republic of	KNFFP	Taejeon
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 Region
<b>Reprocessing plants</b>		
France	AREVA NC-UP2 & UP3	La Hague
Germany	KTE GmbH	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
<b>Enrichment plants</b>		
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	20 km North-East of Qom City

State <sup>a</sup>	Name of facility	Location
	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
<b>Separate storage facilities</b>		
Argentina	Cent. St. Irr. Sp. Fiss. M. (DCMFEL)	Centro Atomico Ezeiza
	Centr. Store Sp. Fiss. Mat. (DCMFE)	Buenos Aires
	DUE	Centro Atomico Ezeiza
	FACIRI	Ezeiza
	Nuclear Material Storage	Buenos Aires
	Storage Bunker	Centro Atomico Ezeiza
Armenia	SSFS	Metsamor
Australia	Bulk Storage Facility	Lucas Heights, Sutherland
Belarus	Belarus NPP FF storage	Ostrovets
	Sosny 2	Minsk
Belgium	Belgoprocess	Dessel
	Belgoprocess Dry Storage	Dessel
	Belgoprocess UF <sub>6</sub>	Dessel
	Elbel Doel Dry Storage	Beveren
	Tihange Wet Store	Tihange
Brazil	Planned Fuel Storage Facility	Ilha Da Madeira, 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
	PWMF	Pickering, Ontario
	Spent Fuel Canister Storage	Chalk River, Ontario

State <sup>a</sup>	Name of facility	Location
	Waste Storage Facility	Chalk River, Ontario
	WUFDSF	Tiverton, Ontario
Czech Republic	ISFS Dukovany	Dukovany
	ISFS Temelin	Temelin
	Radioactive Waste Rep. Richard	Litoměřice
	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	Rossendorf
	KFA-AVR	Juelich
	KFK-FR-2	Eggenstein-Leopoldshafen
	PTB-Spaltstofflager	Hanau
	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	Rossendorf
	TBL-G	Gorleben
	Uranoxid-Lager UAG	Gronau
Hungary	Central Isotope Storage	Budapest

State <sup>a</sup>	Name of facility	Location
	MVDS	Paks
India	PREFRE	Tarapur
	TAPS AFR	Tarapur
Indonesia	Ria-Nd ISFSF	Serpong
Iran, Islamic Republic of	KWS	Karaj
Iraq	Former Location C	Tuwaitaha
Italy	CCRM Ispra Central Store	Ispra
	Centro 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
	DU & Used Sources Storage	Kurchatov
	IAEA LEU Storage Facility	Ust-Kamenogorsk
	Thorium Storage Facility	Kurchatov
	Ulba Thorium Storage	Ust-Kamenogorsk
Korea, Republic of	NMSF	Kaeri-Taejeon
	Uranium Residue Storage Fac.	Kaeri-Taejeon
	WLDC	Kyongju
Lithuania	Radioactive Waste Management	Vilnius
	SNFS-1	Visaginas
	SNFS-2	Visaginas
Mexico	IFSI	Estado de Veracruz
Netherlands	COVRA	Vlissingen
	HABOG	Vlissingen

State <sup>a</sup>	Name of facility	Location
Poland	ZUOP	Otwock-Świerk
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	Almaraz Dry Storage	Almaraz
	Asco Dry Storage	Asco
	ATC Centralized Storage	Madrid
	Nuclenor, S.A. Storage	Santa Maria de Garona
	Trillo Dry Storage	Trillo
	Zorita Dry Storage	Almonacid de Zorita
Sweden	SFK	Oesthammar
	SKB Clab Store	Oskarshamn
Switzerland	Zwibez Kernkraftwerk Beznau	Doettingen
	Zwilag	Wuerenlingen Aargau
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
	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



State <sup>a</sup>	Name of facility	Location
<b>Other facilities</b>		
Algeria	AURES I	Birine Nucl. Site (Ain Oussera)
Argentina	Alpha Laboratory	Buenos Aires
	PPRF	Centro Atomico Ezeiza
	Lapep	Centro Atomico Ezeiza
	Tripple Altura Laboratory (LTA)	Centro Atomico Ezeiza
	Enriched Uranium Recovery Lab (LUE)	Centro Atomico 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/Lambat	Iperó
	IPEN-Nuclear Fuel Centre	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	Sukhumi Institute	Sukhumi
Germany	Inst. Kernchemie	Mainz
	JRC-ITU	Eggenstein-Leopoldshafen
	Betriebsstätten der JEN	Juelich
	Lab. Juelich	Juelich
	PKA Gorleben	Gorleben
	WAK-Heisse Zellen der HVT	Eggenstein-Leopoldshafen

State <sup>a</sup>	Name of facility	Location
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	JNC 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
Jordan	Jordan Sub-critical Assembly	Jordan Univ. Science & Tech.
Korea, Republic of	ACPF	Taejeon
	DFDF	Taejeon
	HFFL	Taejeon
	IMEF	Taejeon
	KAERI R&D Facility	Taejeon
	PIEF	Taejeon
	PRIDE	Kaeri Site, Taejeon
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

State <sup>a</sup>	Name of facility	Location
	Nu and Du Metals Plant	Pelindaba
Spain	C.A. El Cabril	El Cabril
Switzerland	AERA	Villigen
	CERN	Meyrin-Geneva
	Hot Labor	Villigen
Ukraine	Chernobyl Conditioning	Chernobyl
	Chernobyl Unit 4 Shelter	Chernobyl
	KHFTI	Kharkov
	KHFTI	Kharkov
	Sevastopol Subcritical Assembly	Sevastopol

<sup>a</sup> 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:**
1. The Agency was also applying safeguards at 15 facilities in Taiwan, China.
  2. Additionally under Agency safeguards there were 584 material balance areas outside facilities in 132 States and in Taiwan, China. These include 55 material balance areas established for States with a small quantities protocol based on revised standard text.
  3. The list includes projected and operational facilities and facilities at the decommissioning stage.