

IAEA ANNUAL REPORT 2019

Additional Annex Information



Table A34. Coordinated research projects initiated in 2019

Nuclear Power

- Advancing the State of Practice in Uncertainty and Sensitivity Methodologies for Severe Accident Analysis in Water Cooled Reactors

Nuclear Fuel Cycle and Waste Management

- Fuel Materials for Fast Reactors
- Developing a Framework for the Effective Implementation of a Borehole Disposal System
- Management of Wastes Containing Long Lived Alpha Emitters: Characterization, Processing and Storage

Nuclear Science

- Facilitating Experiments with Ion Beam Accelerators

Food and Agriculture

- Enhancing Agricultural Resilience and Water Security Using Cosmic Ray Neutron Technology
- Remediation of Radioactive Contaminated Agricultural Land
- Enhanced Biotic Stress Tolerance of Pulses towards Sustainable Intensification of Cropping Systems for Climate Change Adaptation
- Generic Approach for the Development of Genetic Sexing Strains for SIT Applications
- Implementation of Nuclear Techniques for Authentication of Foods with High Value Labelling Claims (INTACT Food)

Human Health

- Imaging in Cardio-Oncology Study (iCOS)
- Prognostic Value of Arterial ¹⁸F-FDG PET Imaging — The PIAF Trial
- Doctoral CRP on Advances in Radiotherapy Techniques
- Image Guided Brachytherapy for Cervical Cancer: An Implementation Study
- Applying Nuclear Nutrition Techniques to Improve Outcomes for Childhood Cancer in Low and Middle Income Countries

Water Resources

- Isotope Variability of Rain for Assessing Climate Change Impacts

Environment

- Evaluating the Impact of Ocean Acidification on Seafood — A Global Approach
- Applied Radioecological Tracers to Assess Coastal and Marine Ecosystem Health

Radioisotope Production and Radiation Technology

- Enhancing the Beneficial Effects of Radiation Processing in Nanotechnology
- Production of Zirconium-89 and the Development of Zirconium-89 Radiopharmaceuticals
- Development of Radiation Grafted Membranes for Cleaner and more Sustainable Energy
- Radiation Based technologies for Treatment of Emerging Organic Pollutants

Nuclear Security

- Preventive and Protective Measures Against Insider Threats at Nuclear Facilities
- Improving the Security of Radioactive Material throughout its Lifecycle, Associated Facilities and Associated Activities
- Applying Nuclear Forensic Science to Respond to a Nuclear Security Event
- Advancing Maintenance, Repair and Calibration of Radiation Detection Equipment

Incident and Emergency Preparedness and Response

- Effective Use of Dose Projection Tools in the Preparedness and Response to Nuclear and Radiological Emergencies

Table A35. Coordinated research projects completed in 2019

Nuclear Power

- Organizational Cultural Basis for Successful Performance in Nuclear Power Plants
- Application of Computational Fluid Dynamics (CFD) Codes for Nuclear Power Plant Designs

Nuclear Fuel Cycle and Waste Management

- Geochemical and Mineralogical Characterization of Uranium and Thorium Deposits
- Uranium/Thorium Fuelled High Temperature Gas Cooled Reactor Applications for Energy Neutral and Sustainable Comprehensive Extraction and Mineral Product Development Processes
- 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

- Development of Molecular Concentration Mapping Techniques Using MeV Focused Ion Beams
- Updating the Photonuclear Data Library and Generating a Reference Database for Photon Strength Functions
- Plasma–Wall Interaction with Reduced Activation Steel Surfaces in Fusion Devices
- Plasma–Wall Interaction with Irradiated Tungsten and Tungsten Alloys in Fusion Devices
- In Situ Measurements for Rapid Environmental Mapping of Contaminated Sites
- Pathways to Energy from Inertial Fusion: Materials Beyond Ignition
- Experiments with Synchrotron Radiation for Modern Environmental and Industrial Applications
- Advanced Moderators for Intense Cold Neutron Beams in Materials Research

Food and Agriculture

- Optimizing Soil, Water and Nutrient Use Efficiency in Integrated Cropping–Livestock Production Systems
- Landscape Salinity and Water Management for Improving Agricultural Productivity
- Minimizing Farming Impacts on Climate Change by Enhancing Carbon and Nitrogen Capture and Storage in Agro-ecosystems
- Response to Nuclear Emergencies Affecting Food and Agriculture
- Use of Stable Isotopes to Trace Bird Migrations and Molecular Nuclear Techniques to Investigate the Epidemiology and Ecology of the Highly Pathogenic Avian Influenza
- Exploring Genetic, Molecular, Mechanical and Behavioural Methods of Sex Separation in Mosquitoes

Human Health

- Radiation Therapy Planning of Non-small Cell Lung Cancer Based on PET/CT (Diagnostic Component)
- Integrated Imaging (SPECT/CT; PET/CT; MRI) in Infection/Inflammation Spine Pathology
- Evaluation and Optimization of Paediatric Imaging
- Quality Assurance of Volumes Definition for Three Dimensional Treatment Planning
- Stable Isotope Techniques to Design Effective Food Fortification Strategies in Settings with High H. Pylori Infection
- Using Nuclear Techniques to Develop and Evaluate Food Based Strategies to Prevent Micronutrient Deficiencies in Young Children

Environment

- Toxicological and Ecotoxicological Assessment of Benthic Algae and their Toxins to Achieve Sustainable Management of Marine Ecosystem Services

Radioisotope Production and Radiation Technology

- Nanosized Delivery Systems for Radiopharmaceuticals

Table A36. Publications issued in 2019**Nuclear Power**

- A Methodology to Evaluate the Effectiveness of Training in Nuclear Facilities — IAEA TECDOC
- Application of Multi-criteria Decision Analysis Methods to Comparative Evaluation of Nuclear Energy System Options: Final Report of the INPRO Collaborative Project KIND — IAEA Nuclear Energy Series
- Classification, Selection and Use of Nuclear Power Plant Simulators for Education and Training — IAEA TECDOC
- Country Nuclear Power Profiles — Non-serial
- Energy, Electricity and Nuclear Power Estimates for the Period up to 2050 — Reference Data Series
- Guidance on Nuclear Energy Cogeneration — IAEA Nuclear Energy Series
- Heavy Water Reactor Moderator Effectiveness as a Backup Heat Sink during Accidents — IAEA TECDOC
- Human Resource Development for Nuclear Power Programmes — IAEA Proceedings Series
- Introduction to Water Cooled Reactor Theory with the Micro-Physics Simulator Lite Edition — Training Course Series
- Managing Counterfeit and Fraudulent Items in the Nuclear Industry — IAEA Nuclear Energy Series
- Milestones in the Development of a National Infrastructure for Nuclear Power — IAEA Nuclear Energy Series (Arabic)
- Milestones in the Development of a National Infrastructure for Nuclear Power — IAEA Nuclear Energy Series (French)
- Nuclear Power Reactors in the World — Reference Data Series
- Nuclear–Renewable Hybrid Energy Systems for Decarbonized Energy Production and Cogeneration — IAEA TECDOC
- Operating Experience with Nuclear Power Stations in Member States — Operating Experience with Nuclear Power Stations in Member States (CD-ROM)
- Passive Safety Systems in Water Cooled Reactors: An Overview and Demonstration with Basic Principle Simulators — Training Course Series
- PCTTRAN Generic Pressurized Water Reactor Simulator Exercise Handbook — Training Course Series
- Responsibilities and Functions of a Nuclear Energy Programme Implementing Organization — IAEA Nuclear Energy Series
- Status and Evaluation of Severe Accident Simulation Codes for Water Cooled Reactors — IAEA TECDOC
- Status of Research and Technology Development for Supercritical Water Cooled Reactors — IAEA TECDOC
- Waste from Innovative Types of Reactors and Fuel Cycles — IAEA Nuclear Energy Series

Nuclear Fuel Cycle and Waste Management

- Behaviour of Spent Power Reactor Fuel during Storage — IAEA TECDOC
- Decommissioning after a Nuclear Accident: Approaches, Techniques, Practices and Implementation Considerations — IAEA Nuclear Energy Series
- Decommissioning of Medical, Industrial and Research Facilities — IAEA Safety Standards Series
- Demonstrating Performance of Spent Fuel and Related Storage System Components during Very Long Term Storage — IAEA TECDOC
- Environmental Impact Assessment of the Drawdown of the Chernobyl NPP Cooling Pond as a Basis for Its Decommissioning and Remediation — IAEA TECDOC
- Fuel Modelling in Accident Conditions (FUMAC) — IAEA TECDOC
- Management of Project Risks in Decommissioning — Safety Reports Series
- Management of Spent Fuel from Nuclear Power Reactors — IAEA Proceedings Series
- Material Properties Database for Irradiated Core Structural Components for Lifetime Management for Long Term Operation of Research Reactors — IAEA TECDOC
- Nuclear Fuel Cycle Simulation System: Improvements and Applications — IAEA TECDOC

- Reliability of Advanced High Power, Extended Burnup Pressurized Heavy Water Reactor Fuels — IAEA TECDOC
- Review of Fuel Failures in Water Cooled Reactors (2006–2015) — IAEA Nuclear Energy Series
- Storing Spent Fuel until Transport to Reprocessing or Disposal — IAEA Nuclear Energy Series
- Thorium Resources as Co- and By-products of Rare Earth Deposits — IAEA TECDOC
- Uranium Production Cycle Selected Papers 2012–2015 — IAEA TECDOC
- Uranium Raw Material for the Nuclear Fuel Cycle: Exploration, Mining, Production, Supply and Demand, Economics and Environmental Issues (URAM-2014) — IAEA Proceedings Series
- World Thorium Occurrences, Deposits and Resources — IAEA TECDOC

Capacity Building and Nuclear Knowledge for Sustainable Energy Development

- Adapting the Energy Sector to Climate Change — Non-serial
- Knowledge Management Perspectives on Outsourcing in Operating Nuclear Power Plants — IAEA TECDOC
- Planning and Execution of Knowledge Management Assist Visits for Nuclear Organizations — IAEA TECDOC

Nuclear Science

- Atomic and Plasma–Material Interaction Data Vol. 18 — Atomic and Plasma–Material Interaction Data for Fusion
- Conceptual Development of Steady State Compact Fusion Neutron Sources — IAEA TECDOC
- Gallium-68 Cyclotron Production — IAEA TECDOC
- Improvement of the Reliability and Accuracy of Heavy Ion Beam Analysis — Technical Reports Series
- Nuclear Data Newsletter Issue No. 66, February 2019
- Nuclear Data Newsletter Issue No. 67, July 2019

Food and Agriculture

- Animal Production and Health Newsletter, No. 69, January 2019
- Animal Production and Health Newsletter, No. 70, July 2019
- Food and Environmental Protection Newsletter Vol. 22, No. 1, January 2019
- Food and Environmental Protection Newsletter Vol. 22, No. 2, July 2019
- Food and Environmental Protection Newsletter Vol. 23, No. 1, January 2020
- Insect Pest Control Newsletter No. 92, January 2019
- Insect Pest Control Newsletter No. 93, July 2019
- Insect Pest Control Newsletter No. 94, January 2020
- Plant Breeding and Genetics Newsletter, No. 42, January 2019
- Plant Breeding and Genetics Newsletter, No. 43, July 2019
- Plant Breeding and Genetics Newsletter, No. 44, January 2020
- Sample Preparation of Soil and Plant Material for Isotope Ratio Mass Spectrometry — IAEA TECDOC
- Soils Newsletter Vol. 41 No. 2, January 2019
- Soils Newsletter Vol. 42 No. 1, July 2019
- Use of Laser Carbon Dioxide Carbon Isotope Analysers in Agriculture — IAEA TECDOC

Human Health

- Introduction of Image Guided Radiotherapy into Clinical Practice — IAEA Human Health Reports
- Nutritional & Health Related Environmental Studies Newsletter, No. 9, January 2019
- Nutritional & Health Related Environmental Studies Newsletter, No. 10, August 2019
- SPECT/CT Atlas of Quality Control and Image Artefacts — IAEA Human Health Series
- SSDL Newsletter Issue No. 69, April 2019
- SSDL Newsletter Issue No. 70, June 2019
- Training Curriculum for Nuclear Medicine Physicians — IAEA TECDOC

Environment

- Developing Cost Estimates for Environmental Remediation Projects — IAEA Nuclear Energy Series

- Environment Laboratories Newsletter Vol. 5, No. 2, July–December 2018
- Environment Laboratories Newsletter Vol. 6, No. 1, January–July 2019
- Guidelines on Soil and Vegetation Sampling for Radiological Monitoring — Technical Reports Series
- IAEA-RML-2016-01 Proficiency Test for Determination of Radionuclides in Sea Water — IAEA Analytical Quality in Nuclear Applications Series
- Interlaboratory Comparisons 2014–2016: Determination of Radionuclides in Sea Water, Sediment and Fish — IAEA Analytical Quality in Nuclear Applications Series
- Worldwide Interlaboratory Comparison on the Determination of Trace Elements and Methyl Mercury in Sediment Sample — IAEA Analytical Quality in Nuclear Applications Series

Radioisotope Production and Radiation Technology

- Guidelines for Sediment Tracing Using the Compound Specific Carbon Stable Isotope Technique — IAEA TECDOC

Incident and Emergency Preparedness and Response

- The Radiological Accident in Ventanilla — Non-serial

Safety of Nuclear Installations

- Accident Management Programmes for Nuclear Power Plants — IAEA Safety Standards Series
- Approaches to Safety Evaluation of New and Existing Research Reactor Facilities in Relation to External Events — Safety Reports Series
- Benchmarking against Experimental Data of Neutronics and Thermohydraulic Computational Methods and Tools for Operation and Safety Analysis of Research Reactors — IAEA TECDOC
- Design of the Reactor Containment and Associated Systems for Nuclear Power Plants — IAEA Safety Standards Series
- Design of the Reactor Core for Nuclear Power Plants — IAEA Safety Standards Series
- Deterministic Safety Analysis for Nuclear Power Plants — IAEA Safety Standards Series
- Guidelines for Safety Culture Self-Assessment for the Regulatory Body — IAEA Services Series
- Handbook for Regulatory Inspectors of Nuclear Power Plants — IAEA TECDOC
- Hierarchical Structure of Safety Goals for Nuclear Installations — IAEA TECDOC
- Human and Organizational Aspects of Assuring Nuclear Safety — Exploring 30 Years of Safety Culture — IAEA Proceedings Series
- Human Factors Engineering in the Design of Nuclear Power Plants — IAEA Safety Standards Series
- Hybrid Simulation to Assess Performance of Seismic Isolation in Nuclear Power Plants — IAEA TECDOC
- Periodic Safety Review for Nuclear Power Plants — IAEA Safety Standards Series (Spanish)
- Safety of Nuclear Fuel Cycle Facilities — IAEA Safety Standards Series (Spanish)
- Safety of Nuclear Fuel Cycle Facilities — IAEA Safety Standards Series (Spanish)
- Site and External Events Design (SEED) Guidelines for the Preparation and Conduct of SEED Missions — IAEA Services Series
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (Arabic)
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (Chinese)
- Site Evaluation for Nuclear Installations — IAEA Safety Standards Series (Russian)
- Technical Approach to Probabilistic Safety Assessment for Multiple Reactor Units — Safety Reports Series
- Technical Safety Review (TSR) Service Guidelines — IAEA Services Series

Radiation and Transport Safety

- Advisory Mission on Regulatory Infrastructure for Radiation Safety Guidelines — IAEA Services Series
- Compliance Assurance for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (Spanish)
- Design and Conduct of Indoor Radon Surveys — Safety Reports Series

- IAEA Safety Glossary: 2018 Edition— Non-serial
- Impact of the IAEA Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources (1981–2015) — IAEA TECDOC
- Methodologies for Assessing the Induced Activation Source Term for Use in Decommissioning Applications — Safety Reports Series
- Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources — Training Course Series
- Regulations for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (Arabic)
- Regulations for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (Chinese)
- Regulations for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (French)
- Regulations for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (Russian)
- Regulations for the Safe Transport of Radioactive Material — IAEA Safety Standards Series (Spanish)
- Storage of Spent Nuclear Fuel — IAEA Safety Standards Series (Spanish)

Radioactive Waste Management and Environmental Safety

- Methodology for the Systematic Assessment of the Regulatory Competence Needs (SARCoN) for Regulatory Bodies of Radiation Facilities and Activities — IAEA TECDOC
- Modelling of Marine Dispersion and Transfer of Radionuclides Accidentally Released from Land Based Facilities — IAEA TECDOC
- Predisposal Management of Radioactive Waste from the Use of Radioactive Material in Medicine, Industry, Agriculture, Research and Education — IAEA Safety Standards Series
- Use of the Benchmarking System for Operational Waste from WWER Reactors — IAEA TECDOC

Nuclear Security

- Developing a Nuclear Security Contingency Plan for Nuclear Facilities — IAEA Nuclear Security Series
- Establishing a System for Control of Nuclear Material for Nuclear Security Purposes at a Facility during Use, Storage and Movement — IAEA Nuclear Security Series
- International Nuclear Security Advisory Service (INSServ) Guidelines — IAEA Services Series
- Nuclear Security Assessment Methodologies for Regulated Facilities — IAEA TECDOC
- Nuclear Security Systems and Measures for the Detection of Nuclear and Other Radioactive Material out of Regulatory Control — IAEA Nuclear Security Series (French)
- Physical Protection of Nuclear Material and Nuclear Facilities (Implementation of INFCIRC/225/Revision 5) — IAEA Nuclear Security Series (French)
- Physical Protection of Nuclear Material and Nuclear Facilities (Implementation of INFCIRC/225/Revision 5) — IAEA Nuclear Security Series (Spanish)
- Planning and Organizing Nuclear Security Systems and Measures for Nuclear and Other Radioactive Material out of Regulatory Control — IAEA Nuclear Security Series
- Preventive Measures for Nuclear and Other Radioactive Material out of Regulatory Control — IAEA Nuclear Security Series
- Radiological Crime Scene Management — IAEA Nuclear Security Series (Spanish)
- Review and Assessment of Nuclear Facilities by the Regulatory Body — IAEA Safety Standards Series (Spanish)
- Security during the Lifetime of a Nuclear Facility — IAEA Nuclear Security Series
- Security of Nuclear Material in Transport — IAEA Nuclear Security Series (French)
- Security of Radioactive Material in Use and Storage and of Associated Facilities — IAEA Nuclear Security Series
- Security of Radioactive Sources — IAEA Nuclear Security Series (Spanish)
- Self-assessment of Nuclear Security Culture in Facilities and Activities — IAEA Nuclear Security Series (French)
- Self-assessment of Nuclear Security Culture in Facilities and Activities — IAEA Nuclear Security Series (Spanish)
- Use of Nuclear Material Accounting and Control for Nuclear Security Purposes at Facilities — IAEA Nuclear Security Series (Spanish)

Nuclear Verification

- International Safeguards in the Design of Enrichment Plants — IAEA Nuclear Energy Series
- International Safeguards in the Design of Reprocessing Plants — IAEA Nuclear Energy Series

Table A37. Technical cooperation training courses held in 2019

Energy

- Interregional Training Course on Siting for Nuclear Power Plants
Austria
- Regional Training Course on Science and Technology of Water Cooled Reactors and Introduction of Supercritical Water Cooled Reactor Concepts
Austria
- Regional Training Course on Physics and Technology of the Advanced Water Cooled Reactors (WCRs) with Computer-Based Educational Simulators
China
- Regional Training Workshop on Phenomenology, Application, and Assessment of Passive Systems in Advanced WCRs
China
- Interregional Training Course on National Responsibilities and Infrastructure for New Nuclear Power Programmes
Costa Rica
- Training Course on Fundamentals of Safe, Secure and Sustainable Nuclear Power Generation through the Intercontinental Nuclear Institute (INI)
Czech Republic and United States of America
- Regional Training Course on Sustainable Uranium Mining and Management of Energetic NORMs
Egypt
- Interregional Training Course on Economic Aspects and Funding of a New Nuclear Power Programme
France
- Interregional Training Course on Promoting Effective Interaction Among Nuclear Industry, Regulatory Body and Stakeholders in Countries Introducing or Expanding Nuclear Power Programmes
Japan
- Interregional Training Course on Implementing the Systematic Approach to Training in New Nuclear Power Programmes
Japan
- Regional Training Course on Implementation of Different Power Projects Using IAEA Model SimPacts
Jordan
- Interregional Training Course on Licensing and Construction Preparation and Oversight for New and Expanding Nuclear Power Plants
Korea, Republic of
- Interregional Training Course on Environmental Management of Uranium Mining and Milling Activities
Mexico
- Regional (AFRA) Training Course on the IAEA's Tool MESSAGE (Model for Energy Supply Strategy Alternatives and their General Environmental Impacts) for Energy Supply Analysis
Nigeria
- Regional Training Course for the Construction of Indicators for Sustainable Energy Development
Paraguay
- Regional Training Course on Safety Assessment of Passive Systems
Russian Federation
- Regional Training Course on Probabilistic Safety Assessment (PSA) Applications and Risk Informed Decision Making
Russian Federation
- Interregional Training Course on Stakeholder Involvement in Nuclear Power Programmes
Russian Federation
- Interregional Training Course on School on Drafting Regulations for Countries Embarking in Nuclear Power Programme
Russian Federation

- Interregional Training Course on Establishing a National Position for New Nuclear Power Programmes
Russian Federation
- Interregional Training Course on Nuclear Power Infrastructure Development
Russian Federation
- Interregional Training Course on Strategies Related to the Nuclear Fuel Cycle and Radioactive Waste
Management
Russian Federation
- Advanced Regional Training Course on the IAEA's tool MESSAGE (Model for Energy Supply
Strategy Alternatives and their General Environmental Impacts) for Energy Supply Analysis
Tunisia
- Training Course on Pressurized Water Reactor (PWR) Technologies Using Personal Computer (PC)
Based Basic Principle and GlassTop Nuclear Power Plant (NPP) Simulators
United Arab Emirates
- Interregional Training Course on Nuclear Power Infrastructure Development
United Arab Emirates
- Training Course on Electrical Grid Considerations and Interactions with a Nuclear Power Plant
United States of America
- Interregional Training Course on Advanced Approaches in Financing Nuclear Power Plant (NPP)
Projects
United States of America
- Interregional Training Course on Environmental Protection Aspects for Embarking Countries
United States of America
- Interregional Training Course on Radiation Protection for Nuclear Embarking Countries
United States of America

Food and Agriculture

- Interregional Training Course on Establishment of Maximum Residue Limits (Pesticide and Veterinary
Drugs) and Risk Assessment
Argentina
- Interregional Training Course on Certified Reference and Proficiency Testing Material for Food Safety
Control Laboratories
Argentina
- Regional Training Course on the Components of the SIT Package
Argentina
- Regional Training Course on Methods for the Handling, Marking, Transportation and Release of Sterile
Male Aedes Aegypti
Argentina
- Regional Training Course on the Use of Nuclear Derived Techniques in Diagnosis of the "Peste des
Petits Ruminants" (PPR) in Sheep and Goats
Austria
- Training Course on Basic use of R software to infer demographic parameters of wild and sterile
mosquitoes from entomological monitoring data
Austria
- Regional Training Course on Genetics of Parasite Resistance in Sheep and Goats: Bioinformatics
Analysis of Genomic Data to Assess Population Structure, Genotype-Phenotype Association and
Genomic Prediction
Austria
- Regional Training Course on Mutation Breeding and Efficiency Enhancing Techniques for Crop
Improvement
Austria
- Regional Training Course on Tsetse Pupae Sex Sorter
Austria
- Regional (AFRA) Training on Analysis of Toxic Metals in Food and Related Matrices
Benin

- Regional Training Course on Modern Taxonomy and Identification Tools of Fruit Flies
Benin
- Regional (AFRA) Training Course on Water Use Efficiency and its Impact on Socio-Economic Factors
Botswana
- Regional Training Course on New World Screwworm (NWS) Epidemiology and Population Genetics
Brazil
- Advanced Regional Training Course on Biostimulants and Biofertilizers for Crop Growth Enhancement
Brazil
- Advanced Regional Training Course on the Use of N15 for Evaluating Efficiency of N Fertilizer and
Plant Growth Agents
Brazil
- Regional Training Course on the Use of Fallout Radionuclides, Compound Specific Stable Isotope and
Water Isotope Techniques for Erosion and Sedimentation Assessment in Watersheds and Water
Reservoirs
Chile
- Regional Training Course on Multivariate Data Analysis Using the Chemometrics Add-in for Microsoft
Excel including DD-SIMCA
China
- Regional Training Course on the Application of Stable Isotopes for Soil and Water Quality
Investigations
China
- IAEA/RCA Regional Training Course on the Fundamentals of Using Nuclear Techniques for Verifying
Food Authenticity (Part II)
China
- Regional Training Course on Gene Expression Analysis Using RNA_Seq Technology for Genetic
Improvement of Mutant Crops
Colombia
- Regional Training Course on Farmer Participation in Variety Selection Approach in Plant Mutation
Breeding for Important Crops
Costa Rica
- Regional Training Course on Statistical Analysis of Data Related to Gastro-Intestinal Parasite
Management in Sheep and Goat
Costa Rica
- Regional Training Course on the Use of Open-Source, Real-Time Geo-Visualization in Monitoring
Vectors and Vector Borne Diseases
Croatia
- Regional Training Course on Gamma Spectrometry and Use of the Monte Carlo Simulation
Egypt
- Regional Training Course on Tsetse Dissections
Ghana
- Interregional Training Course on Use of the Sterile Insect and Related Techniques for the Area-wide
Integrated Management of Insect Pests
Guatemala and Mexico
- Regional Training Course on Improving the Resilience to Drought and Heat Stress
Indonesia
- IAEA/RCA Regional Training Course on Molecular Approaches for Selection of Desired Green Traits
in Crops
Indonesia
- Regional Training Course on Social Communication for Sterile Insect Technique Mosquito Project
Italy
- Interregional Training Course on Application of Statistical Principles to Food Safety Laboratories and
National Monitoring Plans/Programmes Including Sampling
Jordan

- Interregional Training Course on Application of Statistical Principles to Food Safety Laboratories and National Monitoring Plans/Programmes Including Sampling
Jordan
- Regional (AFRA) Training Course on Water Quality and the Use of Information and Communication Technology (ICT) for Irrigation and Fertilizer Management
Kenya
- Regional Training Course on Enhancing Agricultural Water Management Practices
Lao People's Democratic Republic
- Regional Training Course on Cost-effective Analysis of Targeted Veterinary Drug Residues and Mycotoxins in Food and Feed
Malaysia
- Regional (AFRA) Training Course on Experimental Data Analysis in Mutation Breeding
Mauritius
- Regional Training Course on Area-wide Integrated Fruit Fly Management including Sterile Insect Technique (SIT) and Male Annihilation Technology (MAT)
Mauritius
- Interregional Training Course on Antimicrobial Resistance Associated with Food Safety (AMR)
Morocco
- IAEA/RCA Regional Training Course on Methodology and Mechanisms for Screening of Photosynthetic Efficiency in Crops
Philippines
- Regional Training Course on Mass-Rearing, Irradiation and Release of Sterile Male Aedes Species
Singapore
- Regional Training Course on Collection, Sorting, Storage and Identification of the Most Important Vectors for Vector Borne Diseases
Turkey
- Regional Training Course on the Use of AquaCrop Model to Improve Water Use Efficiency and Crop Productivity
Uruguay

Health and Nutrition

- Regional (AFRA) Training Course for RTT Practices in Radiation Oncology for French-speaking Countries
Algeria
- Regional (AFRA) Training Course on CT QA and Dosimetry for French-speaking Countries
Algeria
- Regional (AFRA) Training Course for Professional Staff of Nuclear Medicine Departments in Africa on Accident Prevention
Austria
- Regional Training Course on Good Manufacturing Practises in the Production of Radiopharmaceuticals Used in Single-Photon Emission Computed Tomography (SPECT)
Brazil
- Regional Training Course on Quality Assurance for Diagnosis and Treatment of Cancer
Chile
- IAEA/RCA Regional Training Course on Multidisciplinary Management and Modern RT Techniques for Head and Neck Cancers
China
- Regional Training Course for Physicists on Basis Concepts of Medical Images in Nuclear Medicine and Radiology
Colombia
- Regional Training Course on TRS483 Dosimetry of Small Static Fields Used in External Beam Radiotherapy: An International Code of Practice for Reference and Relative Dose Determination
Croatia

- Regional Training Course on Digital Imaging (Performance Testing of Detectors, Image Analysis and Post-processing)
Cyprus
- Regional Training Course on Nuclear Medicine Hybrid Imaging Techniques for Technologists
Cyprus
- Regional (AFRA) Training Course on Evidence-based Radiotherapy for Prostate Cancers for English-speaking countries
Egypt
- Regional (AFRA) Training Course for Nuclear Medicine Physicians in Endocrinology (Adrenal, Thyroid and Parathyroid), Diagnosis and Treatment
Ethiopia
- Regional Training Course on Basic Quality and Safety Practices for Radiographers in Diagnostic Radiology
Georgia
- Regional Training Course on Specification, Evaluation, Acceptance and Commissioning of Radiotherapy Equipment
Indonesia
- Regional Training Course on Radiation Protection in Medical Imaging
Jamaica
- IAEA-RCA Regional Training Course on Advanced Radiotherapy Techniques (including IMRT, IGRT, SRS and SBRT)
Japan
- RTC on Quality and Safety Practices in Fluoroscopy Guided Interventional Procedures, in conjunction with the 8th EURASIAN Radiology Forum
Kazakhstan
- Regional Training Course on the Safety of Medical Cyclotron Based Radiopharmaceuticals
Korea, Republic of
- Regional Training Course on Analysis and Interpretation of Body Composition Data
Malawi
- Regional Training Course on Assessing Anthropometry, Total Body Water and Total Energy Expenditure in Infants
Malaysia
- Regional Training Course on the Production and Quality Control of ¹⁸F-FDG
Malaysia
- Regional Training Course on Basic Radiation Dosimetry, Molecular Biology and Radiobiology for Radiotherapy Medical Physics
Malaysia
- Regional Training Course on Optimization of Adult and Paediatric Nuclear Medicine and Molecular Imaging Procedures
Malaysia
- Regional (AFRA) Training Course on Production and Quality Control of Short Lived PET Radiopharmaceuticals
Morocco
- Regional (AFRA) Training Course for Nuclear Medicine Technologists in Uro-Nephrology Aspects for French-speaking Countries
Morocco
- Regional (AFRA) Training Course on The Role of Oncology Nursing in Radiation Oncology
Nigeria
- Regional Training Course on the Transition from 2-D Brachytherapy to 3-D High Dose Rate Brachytherapy
Peru
- Regional Training Course on New Clinical Applications of Nuclear Medicine Technology
Peru

- Regional Training Course on Diagnostic and New Therapy Techniques in Nuclear Medicine for Non-Communicable Diseases Peru
- Regional Training Course on Quality Assurance and Dosimetry in Computed Tomography Portugal
- Regional Training Course on Radiobiology for Radiation Oncologists and Medical Physicists Russian Federation
- Regional Training Course on Practical Advanced Radiotherapy Treatment Planning Russian Federation
- Regional Training Course on Small Field Dosimetry Russian Federation
- Regional Training Course on Radiation Protection and Safety and Accident Prevention in Radiotherapy Russian Federation
- Regional Training Course on Dosimetry and Quality Assurance of External Beam Therapy Russian Federation
- Regional (AFRA) Training Course on Clinical Advantage of SPECT/CT in Bone Benign Conditions South Africa
- Regional Training Course on the Production and Quality Control of ¹⁸F (non-FDG) and ¹¹C Radiopharmaceuticals for Positron Emission Tomography Applications Thailand
- Regional (AFRA) Training Course on Evidence-based Radiotherapy for Prostate Cancers for French-speaking Countries Tunisia
- Regional Training Course on Paediatric Radiation Oncology Tunisia
- Regional (AFRA) Training Course on Quality Control Practices in Nuclear Medicine United Republic of Tanzania
- Regional Training Course: Introduction to Quality Practices in Diagnostic Radiology for Radiographers and Radiological Technologists United States of America
- Regional Training Course on Radiotherapy Imaging United States of America
- Regional Training Course on Prevention of Accidents and Incidents in Radiotherapy United States of America
- Regional Training Course on Prevention of Accidents and Incidents in Radiotherapy United States of America
- Regional Training Course on Good Manufacturing Practices related to the Production of Radiopharmaceuticals used in Positron Emission Tomography (PET) Uruguay
- IAEA/RCA Regional Training Course on Diagnosis and Treatment of NCDs for Radiologists and Nuclear Medicine Physicians Viet Nam
- Regional (AFRA) Training Course on Computed Tomography Quality Assurance and Dosimetry Zambia
- Regional (AFRA) Training Course for RTT Practices in Radiation Oncology for English-speaking Countries Zambia
- Regional (AFRA) Training Course for Nuclear Medicine Technologists in Uro-Nephrology Aspects for English-speaking Countries Zimbabwe

Industrial Applications/Radiation Technology

- Regional Training Course at Level 3 on Basic Non-Destructive Testing (NDT) Methods and Certification Argentina

- Regional Training Course on Ultrasonic Time of Flight Diffraction Technique (TOFD) and Certification
- Regional Training Course on Flow-Rate Measurement in Conduits
Brazil
- Regional Training Course on Non-Destructive Testing for Civil Engineering Works
Germany
- IAEA/RCA Training Course on Radiographic Testing RT-D Level 2 for Personnel Certified to Radiographic Testing RT-F Level 2
Malaysia
- Advanced Regional Training Course on Development, Validation and Routine Control of Industrial Radiation Processes
Mexico
- Regional (AFRA) Training Course on Applying Radiation Technologies in Industrial & Environmental Applications
Morocco
- Regional Training Course on Advanced Grafting of Polymeric Materials for Waste Water Treatment
Philippines
- Regional Training Course on Electron Beam Dosimetry at E-beam and Gamma Irradiation Facilities
Russian Federation
- Regional Training Course on the Safe Operation of Irradiation Facilities
Serbia

Nuclear Knowledge Development and Management

- PGEC Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources
Algeria
- Regional Training Course for Teachers to Introduce Nuclear Sciences in Secondary Schools through Innovative Approaches
Australia
- Regional Training for Recently Appointed National Liaison Officers and National Liaison Assistants. Induction Workshop: Operations and Processes of the Technical Cooperation
Austria
- 9th Session of the Nuclear Law Institute
Austria
- E-Learning Course on Diagnostic and Therapeutic Radioisotopes and Radiopharmaceuticals Application
Austria
- Regional Training Course on the Development of E-Learning-based Material for Education and Training in Nuclear Science and Technology
Brazil
- Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources (PGEC)
Ghana
- Interregional Training Course on Water Resources Assessment using Isotope Hydrology
Jamaica
- Regional Training Course for Teachers to Introduce Nuclear Sciences in Secondary Schools through Innovative Approaches
Japan
- Regional Training Course on Protection Level Calibrations Performed at Secondary Standard Dosimetry Laboratories
Kazakhstan
- Regional Training Course for Teachers to Introduce Nuclear Sciences in Secondary Schools through Innovative Approaches
Malaysia

- Interregional Training Course on Use of Isotopic Techniques for Anthropometry, Body Composition and Physical Assessments
Mauritius
- Basic training course on ocean acidification: carbonate chemistry measurements, experimental design and the application of nuclear and isotopic techniques
Monaco
- Regional Training Course on Nuclear Knowledge Management
Paraguay
- Regional Training Course for Teachers to Introduce Nuclear Sciences in Secondary Schools through Innovative Approaches
Philippines
- Regional (AFRA) Training Course on Diagnosing Industrial Processes Using Computer Tomography
Tunisia
- Regional Training Course for Teachers to Introduce Nuclear Sciences in Secondary Schools through Innovative Approaches
United States of America

Safety and Security

- Regional Training Course on Workplace Monitoring
Algeria
- Regional Training Course on Basic Radiation Protection for End-Users and Regulators
Antigua and Barbuda
- TC Postgraduate Specialisation Training Course on Radiation Protection and Safety of Radiation Sources
Argentina
- Regional Postgraduate Specialization Course of Studies on Nuclear Safety - BPTC2019
Argentina
- School of drafting regulations (THIRD SESSION) RAF9058
Austria
- Regional School for Drafting Radiation Safety and Security Regulations for Asia and the Pacific Region
Austria
- Regional Training Course on Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor
Austria
- Regional Training Course on Medical Preparedness and Response to Radiation Emergencies
Austria
- TC Regional Training Course for First Responders to a Radiological or Nuclear Emergency
Austria
- Regional Training Course on Drafting a Coordinated National Radiological Emergency Plan
Austria
- Regional Training Course on Patient Dose Monitoring and Use of Diagnostic Reference Levels in Diagnostic Imaging
Belarus
- Regional Training Course on Radiation Emergency Management
Brazil
- Regional Training Course on Best Practices on Maintaining and Discharging Safety Responsibilities During Organizational Changes
Brazil
- Regional Training Course on Requirements and Procedures for Authorization of the Transport of Radioactive Material
Burkina Faso
- Regional School of Radiation Emergency Management
China

- Regional Training Course on Workplace Activity Metrology
Cuba
- Regional Training Course on Notification, Authorization, Inspection and Enforcement
Cuba
- Regional Training Course on Safety Assessment of Facilities and Activities using Radiation Sources
Dominican Republic
- Train-the-Trainers Regional Training Course for Radiation Protection Officers
Estonia
- Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources
Greece
- Interregional Training Course on Inspections for Transport of Radioactive Material
Greece
- Training Course on Assessment of Internal Exposure due to Intake of Radionuclides with a Primary Focus on Sample Preparation and Analysis
Korea, Republic of
- Regional Training Course on Train the Trainers for Medical Physicist Supporting the Medical Response to Radiation Emergencies
Korea, Republic of
- Regional Training Course on Evaluation and Expression of Measurement of Uncertainty for External Dosimetry
Kuwait
- Regional Training Course for First Responders to a Radiological Emergency
Lebanon
- Train-the-Trainers Course for Radiation Protection Officers of Medical and Industrial Facilities
Lebanon
- Regional Training Course on Radiation Protection in Diagnostic and Therapeutic Nuclear Medicine
Lithuania
- TC Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources PGEC16-2019
Malaysia
- Interregional Training Course on Advanced Methodologies for Orphan Source Search and Recovery
Malaysia
- Regional Training Course on Radiation Protection in Diagnostic and Therapeutic Nuclear Medicine
Malta
- Regional Training Course on Safety Assessment for Industrial and Medical Facilities and Activities
Mexico
- Regional Training Course for First Time Reviewers of the Operational Safety Review Team (OSART)
Mexico
- Practical Hands-on Training on the Management of Category 3 to 5 Sources
Morocco
- Regional Training Course on SOPs, Implementation and Maintenance of ISO 17025 Standard
Namibia
- Interregional Training Course on Safety Assessment for Radioactive Waste Management Facilities
Namibia
- Regional (AFRA) Training Course on Competence Management for the Regulatory Body
Nigeria
- Train-the-Trainers Course for Radiation Protection Officers
Peru
- Regional Training Course on the Principles for Managing High-Activity (Category 1-2) Disused Sealed Radioactive Sources
Philippines
- Regional Training Course on Requirements and Procedures for Authorization of the Transport of Radioactive Material
Rwanda

- Regional Training Course on Specific Safety Guide SSG-46, Radiation Protection and Safety in Medical Uses of Ionizing Radiation
Senegal
- Regional Training Course on Radiological Characterization for Decommissioning of Small Medical, Industrial and Research Facilities
Serbia
- Train the Trainers Course for Radiation Protection in Interventional Radiology
Thailand
- Regional (AFRA) Training Course on Conditioning and Storage of Neutron and Low Activity Radioactive Waste
Uganda
- Regional Training Course on Radiation Protection of Paediatric Patients United Republic Of Tanzania
- Training Course on Planning and Implementation of Nuclear Facility Decommissioning and Remediation of Radioactively Contaminated Sites
United States of America
- Regional Training Course on Advanced Medical Response to Radiation Emergencies
Uruguay
- Regional Training Course on Radioactive Waste Management
Uruguay
- Regional Training Course on Safety Assessment of Facilities and Activities using Radiation
Viet Nam
- Regional Training Course on Specific Safety Guide SSG-46, Radiation Protection and Safety in Medical Uses of Ionizing Radiation
Zambia

Water and the Environment

- IAEA/RCA Regional Training Course on Gamma-Ray Spectrometry
Australia
- IAEA/RCA Regional Training Course on the Use of Isotopic Techniques in Assessing Coastal Geomorphic Change
Australia
- Training Course on Isotope-enabled Water Balance Modelling for Climate Change Prediction
Austria
- Regional Training Course on Recent Advances in XRF Measurements in Marine Sediments
Austria
- Regional Training Course on Excellence in Laser Spectrometry Methods in Isotope Hydrology
Austria
- Regional Training Course on Interpretation of Alpha and Beta Emitting Radionuclides Measurement Results
Austria
- Regional Training Course on Ocean Acidification: Carbonate Chemistry Measurements, Experimental Design and the Application of Nuclear and Isotopic Techniques
Austria
- Regional Training Course on the Assessment and Management of Sediment Transport in the Gulf of Guinea Subregion Using Nucleonic Control Systems
Cameroon
- IAEA/RCA Regional Training Course on Dose Assessment and Risk Analysis Modelling
China
- Regional Training Course on the Use of Stable Water Isotopes in the Evaluation of Groundwater Resources in the Dry Corridor of Central America under Scenarios of Variability and Climate Change
Costa Rica
- Regional Training Course on Advances of Neutron Activation Analysis in Environmental Applications
Croatia

- IAEA/RCA Regional Training Course on Isotopic Data Processing and Interpretation – Hands on Exercises
Japan
- Regional Training Course on Method Validation, Quality Control and Uncertainty Estimation for Analytical and Radio-Analytical Laboratories
Kenya
- Regional Training Course on the Assessment of Environmental Radiological Impacts Arising from NORM and Radioactively Contaminated Legacy Sites
Kyrgyzstan
- Regional Training Course on Application of Potential Source Contribution Functions (PSCF) for Trajectory-based Model Analysis
Madagascar
- Regional Training Course on the Use of Isotope Techniques for Groundwater Dating
Mexico
- Interregional Training Course on Ocean Acidification
Monaco
- Regional Training Course on Theoretical and Practical Basis of the Use of Nucleonic Control System for Assessing Sediment Transport in Dams and Coastal Infrastructures
Morocco
- Regional Training Course on Harmful Algal Blooms (HAB): Biotoxin Extraction and Ciguatoxin Analysis in Marine Food Using Radioligand-Receptor Binding Assay (r-RBA)
Morocco
- Regional Training Course on Isotope-Enabled Water Balance Modelling in the Context of Climate Change
Paraguay
- Regional Training Course on Regulatory Aspects of Environmental Remediation of Uranium Mining Sites
Russian Federation
- Regional Training Course on Recent Advances in Receptor Models for Source Identification and Apportionment of Air Particulate Matter
Slovenia
- Regional Training Course on Management of Environmental Remediation Projects
Tajikistan
- Regional Training Course on Methodological Advances of Liquid Scintillation Counting and Alpha-particle Spectrometry for the Measurement of Marine Radioactivity
Turkey
- Regional Training Course on ISO/IEC 17025: 2017 Risk Analysis and Internal Auditing in Radioanalytical Laboratories
Zambia

Table A38. Agency corporate social media accounts

Facebook

Arabic

www.facebook.com/IAEAarabic

English

www.facebook.com/iaeaorg

French

www.facebook.com/aieaorg

Russian

www.facebook.com/magateorg

Spanish

www.facebook.com/oieaorg

Instagram

instagram.com/iaeaorg

LinkedIn

www.linkedin.com/company/iaea

Twitter

twitter.com/iaeaorg

Youtube

www.youtube.com/user/IAEAvideo

Table A39(a). Number and types of facilities under Agency safeguards by State during 2019

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							2
Belarus	2	1					2		5
Belgium	6	3		1	1		6	5	22
Brazil	3	6	1	1		5	2	5	23
Bulgaria	3	1					2		6
Canada	6	8	2	5			12		33
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	1	2	1	2				3	9
Estonia		1							1
Finland	5	1					2	1	9
France				1	1	1			3
Georgia		1						1	2
Germany	21	13		1	1	1	24	6	67
Ghana		1							1
Greece		1							1
Hungary	2	2					2		6
India	10			2			2		14
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		5	1	19
Jamaica		1							1
Japan	63	20	2	8	6	3	8	15	125
Jordan		1							1
Kazakhstan	1	4		2			7		14
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	2				1	2	1	8
Nigeria		1							1
Norway		2						1	3
Pakistan	7	2							9
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					1		3
South Africa	2	1	2	2			8	3	18
Spain	8			1			7	1	17
Sweden	12	1		1			2		16
Switzerland	5	3					2	3	13
Syrian Arab Republic		1							1
Tajikistan		1							1
Thailand		3							3
Turkey	1	2		1			2		6
Ukraine	21	2		1			8	6	38
United Arab Emirates	4								4
United Kingdom						1	2		3
United States of America							1		1
Uzbekistan		1							1
Venezuela, Bolivarian Republic of		1							1
Viet Nam		1							1

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

Note: 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 A39(b). Facilities under Agency safeguards or containing safeguarded nuclear material during 2019

State ^a	Name of facility	Location
Power reactors		
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
Bangladesh	Rooppur NPP	Ishwardi, Pabna District
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	HTR-PM	Rongcheng, Shandong Province
Czech Republic	NPP Dukovany (Edu-1)	Dukovany
	NPP Dukovany (Edu-2)	Dukovany
	NPP Temelin	Temelin
Egypt	El Dabaa NPP	El Dabaa
Finland	Hanhikivi-I	Pyhaejoki

State ^a	Name of facility	Location
	Loviisa NPP	Loviisa
	TVO I	Olkiluoto
	TVO II	Olkiluoto
	TVO III	Olkiluoto
Germany	HKG-THTR 300	Hamm
	KKW Brokdorf	Brokdorf
	KKW Brunsbuettel	Brunsbuettel
	KKW Emsland	Lingen (Ems)
	KKW Grafenrheinfeld	Grafenrheinfeld
	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 1 & 2	Kudankulam, Tamil Nadu
	KKNPP 3 & 4	Kudankulam, Tamil Nadu
	NAPS 1 & 2	Bulandshahar, Uttar Pradesh
	RAPS 1 & 2	Rawatbhata, Rajasthan
	RAPS 3 & 4	Rawatbhata, Rajasthan
	RAPS 5 & 6	Rawatbhata, Rajasthan

State ^a	Name of facility	Location
	RAPS 7 & 8	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 ^a	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 ^a	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 ^a	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
	Kanupp-3	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

State ^a	Name of facility	Location
Sweden	Barsebaeck Unit 1	Loeddekoepinge
	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
Turkey	Akkuyu 1	Büyükeceli
Ukraine	Chernobyl NPP, Unit 1	Chornobyl
	Chernobyl NPP, Unit 2	Chornobyl
	Chernobyl NPP, Unit 3	Chornobyl
	Chernobyl NPP, Unit 5	Chornobyl
	Chernobyl NPP, Unit 6	Chornobyl
	Khmelnitski 1	Netishyn
	Khmelnitski 2	Netishyn
	Khmelnitski 3	Netishyn
	Khmelnitski 4	Netishyn
	Rovno 1 & 2	Varash
	Rovno 3	Varash
	Rovno 4	Varash
	South Ukraine 1	Yuzhnoukrayinsk
	South Ukraine 2	Yuzhnoukrayinsk
	South Ukraine 3	Yuzhnoukrayinsk
	Zaporozhe 1	Enerhodar
	Zaporozhe 2	Enerhodar

State ^a	Name of facility	Location
	Zaporozhe 3	Enerhodar
	Zaporozhe 4	Enerhodar
	Zaporozhe 5	Enerhodar
	Zaporozhe 6	Enerhodar
United Arab Emirates	BNPP-1	Barakah
	BNPP-2	Barakah
	BNPP-3	Barakah
	BNPP-4	Barakah
Research reactors and critical assemblies		
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

State ^a	Name of facility	Location
	Ecole Polytechnique	Montreal, Quebec
	McMaster Nuclear Reactor	Hamilton, Ontario
	NRU Reactor	Chalk River, Ontario
	NRX Reactor	Chalk River, Ontario
	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

State ^a	Name of facility	Location
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 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	Ispra
	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	

State ^a	Name of facility	Location
	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 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
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 ^a	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	Kyiv
Uzbekistan	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
Conversion plants		
Algeria	Pilot Uranium Conversion Plant	Draria Nuclear Research Center
Argentina	Experimental Dry Conversion	Pilcaniyeu
	UF ₆ Conversion Plant	Pilcaniyeu
	UO ₂ 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
Egypt	Uranium Products Semi-pilot Plant	Inshas
Iran, Islamic Republic of	EUPP	Esfahan
	UCF	Esfahan
Japan	JCO	Tokai-Mura, Ibaraki-Ken
	PCDF	Tokai-Mura, Ibaraki-Ken
Romania	National Uranium Company	Feldioara
South Africa	Conversion Plant (U Plant)	Pelindaba
	HEU/LEU Conversion Plant	Pelindaba

State ^a	Name of facility	Location
Fuel fabrication plants		
Algeria	UDEEC	Draria Nuclear Research Center
Argentina	ECRI	Buenos Aires
	FECN	Ezeiza
	R. Reactor Fuel Fab. Plant	Ezeiza
Belgium	FBFC DNU Fab.	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
	FPPF	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
	PFPF	Tokai-Mura, Ibaraki-Ken
	PPFF	Tokai-Mura, Ibaraki-Ken
Kazakhstan	Fuel Assembly Fabrication Plant	Ust-Kamenogorsk
	UMP	Ust-Kamenogorsk
Korea, Republic of	KNFFP	Taejeon
Mexico	Fuel Fabrication Pilot Plant	Salazar

State ^a	Name of facility	Location
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	Smoline village, Kirovohradka Oblast
Reprocessing plants		
Belgium	RECUMO	Mol
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
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	20 km North-East of Qom City
	PFEP	Natanz
Japan	CTF	Kitakami-Gun, Aomori-Ken

State ^a	Name of facility	Location
	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	Cent. St. Irr. Sp. Fiss. M. (DCMFEI)	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 ₆	Dessel
	Elbel Doel Dry Storage	Beveren
	Tihange Dry Storage	Tihange
	Tihange Wet Storage	Tihange
Brazil	Angra Dry Storage	Angra dos Reis
	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 ^a	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 ^a	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	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
	DU & PU Source 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 ^a	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
Slovenia	Spent Fuel Dry Storage	Krško
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
	Cofrentes Dry Storage	Cofrentes
	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
Turkey	Akkuyu Fresh Fuel Storage	Büyükeceli
	Akkuyu Spent Fuel Storage	Büyükeceli
Ukraine	Chernobyl NPP-SFS	Chornobyl
	Chernobyl SNFSF-2	Chornobyl
	Khmelnitski FF Storage	Netishyn
	Rovno FF Storage	Varash
	South Ukraine FF Storage	Yuzhnoukrayinsk
	Ukraine Centralized Dry Store	Chornobyl
	Zaporozhe FF Storage	Enerhodar

State ^a	Name of facility	Location
	Zaporozhe SFS	Enerhodar
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
	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

State ^a	Name of facility	Location
	JRC-ITU	Eggenstein-Leopoldshafen
	Betriebsstätten der JEN	Juelich
	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	Impianto Plutonio	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
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

State ^a	Name of facility	Location
South Africa	Decontam. and Waste Recovery Pl.	Pelindaba
	Hot Cell Complex	Pelindaba
	Nu and Du Metals Plant	Pelindabaqa
Spain	C.A. El Cabril	El Cabril
Switzerland	AERA	Villigen
	CERN	Meyrin-Geneva
	Hot Labor	Villigen
Ukraine	Chernobyl Conditioning	Chornobyl
	Chernobyl Unit 4 Shelter	Chornobyl
	Izotop Enterprise	Kyiv
	KHFTI	Kharkiv
	KHFTI	Kharkiv
	Sevastopol Subcritical Assembly	Sevastopol

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

- Note:**
1. The Agency was also applying safeguards at 15 facilities in Taiwan, China.
 2. Additionally under Agency safeguards there were 607 material balance areas outside facilities in 143 States and in Taiwan, China. These include 64 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.