

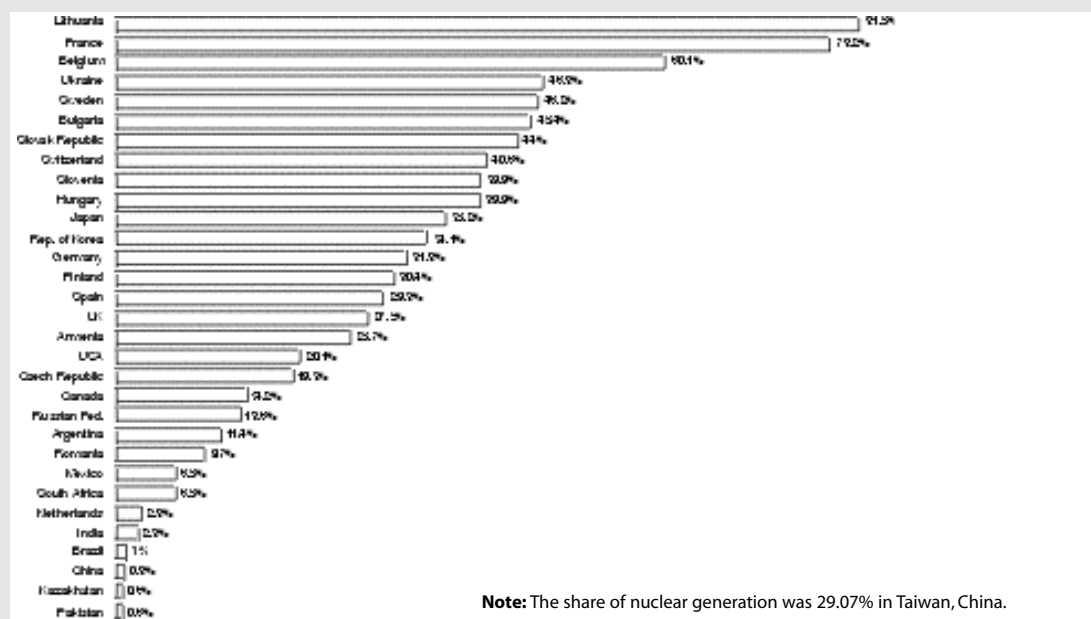
NUCLEAR POWER STATUS AROUND THE WORLD

	IN OPERATION		UNDER CONSTRUCTION	
	NO. OF UNITS	TOTAL NET MWE	NO. OF UNITS	TOTAL NET MWE
ARGENTINA	2	935	1	692
ARMENIA	1	376		
BELGIUM	7	5 712		
BRAZIL	1	626	1	1 245
BULGARIA	6	3 538		
CANADA	16	11 994		
CHINA	3	2 167	4	3 090
CZECH REPUBLIC	4	1 648	2	1 824
FINLAND	4	2 455		
FRANCE	59	62 853	1	1 450
GERMANY	20	22 282		
HUNGARY	4	1 729		
INDIA	10	1 695	4	808
IRAN			2	2 111
JAPAN	54	43 850	1	796
KAZAKSTAN	1	70		
KOREA, REP. OF	12	9 770	6	5 120
LITHUANIA	2	2 370		
MEXICO	2	1 308		
NETHERLANDS	1	449		
PAKISTAN	1	125	1	300
ROMANIA	1	650	1	650
RUSSIAN FEDERATION	29	19 843	4	3 375
SOUTH AFRICA	2	1 842		
SLOVAK REPUBLIC	4	1 632	4	1 552
SLOVENIA	1	632		
SPAIN	9	7 320		
SWEDEN	12	10 040		
SWITZERLAND	5	3 079		
UNITED KINGDOM	35	12 928		
UKRAINE	16	13 765	4	3 800
UNITED STATES	107	99 188		
WORLD TOTAL*	437	351 795	36	26 813

*This total includes Taiwan, China where six reactors totaling 4884 MWe are in operation. Status as of March 1998.
Data in the table and graph below are preliminary based on reports to the IAEA, and subject to change.
In 1997, eight units were shut down, including five in Canada that may be restarted in the future.

NUCLEAR SHARE OF ELECTRICITY GENERATION

as of March 1998



Note: The share of nuclear generation was 29.07% in Taiwan, China.

Editor, Publishing Section, Division of Publications, Department of Administration (98/077). This P-3 post edits scientific and technical manuscripts and takes these through to press or to electronic dissemination. In particular, the Editor edits scientific and technical manuscripts, including mathematics and figures, in conformity with the Agency's editorial policy and style; advises scientific staff on the preparation of electronic products; performs such other editorial tasks as may be assigned by the Chief Editor, Publishing Section; liaises with authors with regard to the scientific and technical aspects of manuscripts. The post requires a university degree (strong preference given to a relevant scientific field) or equivalent; six years of editing experience with scientific publications; and English as mother-tongue or principal language of education.

Closing Date: 19 February 1999

Three Positions: Unit Head (P-5), Environmental Assessment Specialist (P-4), Environmental Discharges Specialist (P-4), Dischargeable Waste Unit, Waste Safety Section, Division of Radiation and Waste Safety, Department of Nuclear Safety (98/067). Vacancies exist in the Dischargeable Waste Unit of the Waste Safety Section, which is concerned with the control of radioactive discharges to the environment. The Unit's main function is the establishment of safety standards for the control of radioactive releases to the environment (atmospheric, terrestrial and aquatic) and providing for the application of those standards. An important project involves establishing standards

for the protection of the environment from ionizing radiation. The Unit is also engaged in providing advice and guidance on procedures and methods for environmental assessment, modelling and monitoring. A major international programme of biospheric assessment model improvement and testing is organized by the Unit. It also establishes and maintains databases on worldwide discharges of radionuclides to the environment and an inventory of past waste disposals at sea. The **Unit Head** is responsible for developing and managing the Agency's programme on the safety of dischargeable waste. The two **Specialists** are responsible for the implementation of the tasks related to the Unit's work programme. The positions require an advanced university degree, or equivalent, in nuclear, chemical or other sciences related to the duties of the post. 10 years of (15 years for Unit Head) experience in the fields of radiation protection and waste safety, of which at least 5 years should have been concerned with some aspects of the control or assessment of radioactive discharges to the environment. For the position of Unit Head, broad experience in the field additionally is needed with proven management experience.

Closing Date: 19 February 1999

Head, Unit for Surveillance Systems (P-4), Section for Equipment Installation and Maintenance, Division of Technical Services, Department of Safeguards. The post manages the unit which is responsible for the installation, testing, commissioning, and maintenance of the safeguards surveillance equipment used by



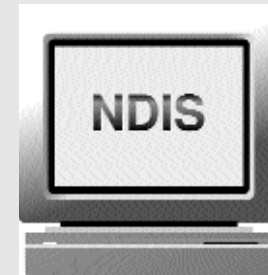
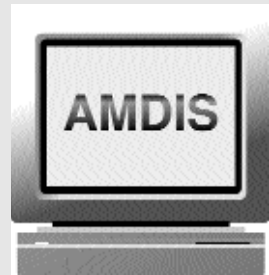
the Department. Duties include administering and managing the professionals and technicians in the unit and providing technical guidance. The post requires a university degree in electrical or electronic engineering and 10 years of relevant professional experience, including experience in international safeguards inspections and in electrical and mechanical equipment manufacturing.

READER'S NOTE

The IAEA Bulletin publishes short summaries of vacancy notices as a service to readers interested in the types of professional positions required by the IAEA. They are not the official notices and remain subject to change. On a frequent basis, the IAEA sends vacancy notices to governmental bodies and organizations in the Agency's Member States (typically the foreign ministry and atomic energy authority), as well as to United Nations offices and information centres. Prospective applicants are advised to maintain contact with them. Applications are invited from suitably qualified women as well as men. *More specific information about employment opportunities at the IAEA may be obtained by writing to the Division of Personnel, P.O. Box 100, A-1400 Vienna, Austria.*

POST ANNOUNCEMENTS ON THE INTERNET

The IAEA's vacancy notices for professional positions, as well as sample application forms, are available through a global computerized network that can be accessed directly. Access is through the Internet. *They can be accessed through the IAEA's World Atom services on the World Wide Web at the following address: <http://www.iaea.or.at/worldatom/vacancies>.* Also accessible is selected background information about employment at the IAEA and a sample application form. Please note that applications for posts cannot be forwarded through the computerized network, since they must be received in writing by the IAEA Division of Personnel, P.O. Box 100, A-1400 Vienna, Austria.

 <p>POWER REACTOR INFORMATION SYSTEM (PRIS)</p> <p>TYPE OF DATABASE Factual</p> <p>PRODUCER International Atomic Energy Agency in cooperation with 29 IAEA Member States</p> <p>IAEA CONTACT IAEA, Nuclear Power Engineering Section P.O. Box 100 A-1400 Vienna, Austria Tel.: (43-1) 2600 Telex: (1)-12645 Fax: (43-1) 26007 E-mail: r.spiegelberg-planer@iaea.org <i>More information over IAEA's internet services at http://www.iaea.org/programmes/a2/</i></p> <p>SCOPE Worldwide information on power reactors in operation, under construction, planned or shutdown, and data on operating experience with nuclear power plants in IAEA Member States.</p> <p>COVERAGE Reactor status, name, location, type, supplier, turbine generator supplier, plant owner and operator, thermal power, gross and net electrical power, date of construction start, date of first criticality, date of first synchronization to and, date of commercial operation, date of shutdown, and data on reactor core characteristics and plant systems; energy produced; planned and unplanned energy losses; energy availability and unavailability factors; operating factor. and load factor.</p>	 <p>INTERNATIONAL INFORMATION SYSTEM FOR THE AGRICULTURAL SCIENCES AND TECHNOLOGY (AGRIS)</p> <p>TYPE OF DATABASE Bibliographic</p> <p>PRODUCER Food and Agriculture Organization of the United Nations (FAO) in cooperation with 186 national, regional, and international AGRIS centres.</p> <p>IAEA CONTACT AGRIS Processing Unit c/o IAEA, P.O. Box 100 A-1400 Vienna, Austria Tel.: (43-1) 2600 Telex (1)-12645 Fax: (43-1) 26007 E-mail: helga.schmid@iaea.org <i>More information over IAEA's internet service at http://www.iaea.org/worldatom/infosource/agris/</i></p> <p>NUMBER OF RECORDS ON LINE FROM JANUARY 1996 TO DATE over 210 000</p> <p>SCOPE Worldwide information on agricultural sciences and technology, including forestry, fisheries, and nutrition.</p> <p>COVERAGE Agriculture in general; geography and history; education, extension, and information; administration and legislation; agricultural economics; development and rural sociology; plant and animal science and production; plant protection; post-harvest technology; fisheries and agriculture; agricultural machinery and engineering; natural resources; processing of agricultural products; human nutrition; pollution; methodology.</p>	 <p>NUCLEAR DATA INFORMATION SYSTEM (NDIS)</p> <p>TYPE OF DATABASE Numerical and bibliographic</p> <p>PRODUCER International Atomic Energy Agency in cooperation with the United States National Nuclear Data Centre at the Brookhaven National Laboratory, the Nuclear Data Bank of the Nuclear Energy Agency, Organisation for Economic Co-operation and Development in Paris, France, and a network of 22 other nuclear data centres worldwide</p> <p>IAEA CONTACT IAEA Nuclear Data Section, P.O. Box 100 A-1400 Vienna, Austria Tel.: (43-1) 2600 Telex (1)-12645 Fax: (43-1) 26007 E-mail: o.schwerer@iaea.org <i>More information over IAEA's internet service at http://www-nds.iaea.org/</i></p> <p>SCOPE Numerical nuclear physics data files describing the interaction of radiation with matter, and related bibliographic data.</p> <p>DATA TYPES Evaluated neutron reaction data in ENDF format; experimental nuclear reaction data in EXFOR format, for reactions induced by neutrons, charged particles, or photons; nuclear half-lives and radioactive decay data in the systems NUDAT and ENSDF; related bibliographic information from the IAEA databases CINDA and NSR; various other types of data.</p> <p><i>Note: Off-line data retrievals from NDIS also may be obtained from the producer on magnetic tape.</i></p>	 <p>ATOMIC AND MOLECULAR DATA INFORMATION SYSTEM (AMDIS)</p> <p>TYPE OF DATABASE Numerical and bibliographic</p> <p>PRODUCER International Atomic Energy Agency in cooperation with the International Atomic and Molecular Data Centre network, a group of 16 national data centres from several countries.</p> <p>IAEA CONTACT IAEA Atomic and Molecular Data Unit, Nuclear Data Section E-mail: j.a.stephens@iaea.org <i>More information over IAEA's internet service at http://www.iaea.org/programs/ri/nds/amdisintro.htm</i></p> <p>SCOPE Data on atomic, molecular, plasma-surface interaction, and material properties of interest to fusion research and technology</p> <p>COVERAGE Includes ALADDIN formatted data on atomic structure and spectra (energy levels, wave lengths, and transition probabilities); electron and heavy particle collisions with atoms, ions, and molecules (cross sections and/or rate coefficients, including, in most cases, analytic fit to the data); sputtering of surfaces by impact of main plasma constituents and self sputtering; particle reflection from surfaces; thermophysical and thermomechanical properties of beryllium and pyrolytic graphites.</p> <p><i>Note: Off-line data and bibliographic retrievals, as well as ALADDIN software and manual, also may be obtained from the producer on diskettes, magnetic tape, or hard copy.</i></p>
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IAEA CO-ORDINATED RESEARCH PROJECTS

Use of nuclear techniques for developing integrated nutrient and water management practices for agroforestry systems

Agroforestry is a land-use system involving trees in various combinations with crops, pastures and animals which aims to maximize the cycling of nutrients and promote soil and water conservation. The focus of this project will be on the nutrient and water benefits provided by trees in systems with production of crops. Research will assess the contribution of trees to the nitrogen and carbon economies of soils through time with the use of nuclear techniques. A minimum data set on soil water will be obtained to assess the effects of trees on available water and subsequent effects of water on availability and cycling of nutrients. This information will be utilized to modify management practices to increase the efficiency of water and nutrient utilization in agroforestry systems.

Electron Paramagnetic Resonance (EPR) biosimetry

The objective is the elaboration of standardized methods for EPR biosimetry aimed for comparable procedures and comparability of the findings. The approved unified methodology is planned as an IAEA Safety Report in the year 2000.

Nuclear model parameter testing for nuclear data evaluation

The CRP is organized to produce a well-tested and validated library of input parameters for nuclear model calculations of nuclear reaction data. The library will contain all input parameters for theoretical evaluations of nuclear reaction cross sections for low energy applications, it will be complemented with standard software interfaces to commonly used nuclear reaction codes to facilitate their use in practical calculations.

Update of X- and gamma-ray decay data standards for detector calibration

The objective of the CRP is to provide a high-precision and internationally recognized database of standards data to improve the accuracy of detector calibration in safeguards, material analysis, environmental monitoring, medicine, waste management, dosimetry, and basic spectroscopy.

Radionuclide transport dynamics in freshwater resources

The programme addresses the assessment of controlling factors of radionuclide migration in soil and groundwater. Of special interest is the evaluation of radionuclide migration patterns and parameters in a variety of geochemical environments over a relatively long period of time (10 to 50 years). The results of this research are expected to provide data for the validation of mathematical models and assist in developing appropriate measures for preventing the contamination of freshwater resources. The programme will be implemented through 1999 with the involvement of researchers dealing with nuclear hydrogeology, water quality authorities, basic research laboratories, and universities.

Hydrogen and hydride induced degradation of the mechanical and physical properties of zirconium-based alloys

The objective of the research is to provide data for, and validation of, predictive models of hydrogen redistribution and precipitation, as well as delayed hydride cracking; and to transfer know-how, especially in those areas where qualitative and subjective interpretations of results are required.

These are selected listings, subject to change. More complete information about meetings can be obtained from the IAEA Conference Services Section at the Agency's headquarters in Vienna, or by referring to the IAEA's periodical *Meetings on Atomic Energy*, prepared by the Agency's Division of Public Information, and by visiting the IAEA's *WorldAtom* Internet services at <http://www.iaea.org>. More information about the IAEA's co-ordinated research projects may be obtained from the Research Contracts Administration Section at IAEA headquarters. The programmes are designed to facilitate global co-operation on scientific and technical subjects in various fields, ranging from radiation applications in medicine, agriculture, and industry to nuclear power technology and safety.



IAEA SYMPOSIA & SEMINARS 1999

Selected Listings

JANUARY

International Seminar on Therapeutic Applications of Radiopharmaceuticals
Hyderabad, India, 18-22 January

FEBRUARY

International Seminar on Year 2000 (Y2K): Progress & Cooperation
Vienna, Austria, 1-5 February

MAY

International Symposium on Isotope Techniques in Water Resources Development & Management
Vienna, Austria, 10-14 May

International Symposium on MOX Fuel Cycle Technologies for Medium and Long-Term Deployment: Experience, Advances, Trends
Vienna, Austria, 17-21 May

JUNE

International Conference on the Strengthening of Nuclear Safety in Eastern Europe
Vienna, Austria, 14-18 June

AUGUST

International Symposium on Technologies for the Management of Radioactive Waste from Nuclear Power Plants & Back-end Nuclear Fuel Cycle Activities.
Taejon, Republic of Korea, 30 August to 3 September

SEPTEMBER

International Symposium on Research Reactor Utilization, Safety & Management
Lisbon, Portugal, 6-10 September

IAEA General Conference
Vienna, Austria, 27 September-4 October

OCTOBER

International Seminar on Mutation Techniques and Molecular Genetics for Tropical and Subtropical Plant Improvement in Asia & the Pacific Region the Philippines, 11-15 October

International Seminar on Strengthened Safeguards: The Record to Date
Vienna, Austria, 18-22 October

International Conference on Irradiation to Ensure Safety & Quality of Food
Marrakesh, Morocco, 18-22 October

International Symposium on Cleanup & Restoration of Sites with Residual Radioactivity, *USA, preliminary*

OTHER 1999 MEETINGS

First Review Meeting of Contracting Parties to the Convention on Nuclear Safety
Vienna, Austria, 12-30 April 1999