

INTERNATIONAL ATOMIC ENERGY AGENCY

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INTERNATIONAL ATOMIC ENERGY AGENCY

P U B L I C A T I O N S

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**DIVISION OF CONFERENCE AND
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This catalogue lists all sales publications of the International Atomic Energy Agency dealing with Environment, and issued during the period 1 January 1990 – 30 April 2001. Most publications are issued in English, though some are also available in other languages. This is noted as A for Arabic, C for Chinese, E for English, F for French, R for Russian and S for Spanish before the relevant ISBN number.

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ENVIRONMENT

APPLICATIONS OF ISOTOPES AND RADIATION IN CONSERVATION OF THE ENVIRONMENT *Proceedings Series*

Proceedings of a symposium held in Karlsruhe, 9–13 March 1992. The objective was to review present knowledge of the applications of radiation, radioisotopes and nuclear methods of analysis in the monitoring and control of environmental pollution and in reducing emissions of environmentally toxic substances. Isotopes and radiation have many characteristics which uniquely contribute to the better understanding of environmental processes, as well as directly protect the environment from the impact of toxic substances. These kinds of applications form the focus of this volume.

Contents: Overviews of some main areas of application of nuclear techniques; Flue gas purification; Radiation processing of liquid and solid wastes; Industrial applications; Radiotracer studies; Major analytical techniques and new approaches in environmental monitoring and research; Nuclear analytical techniques and their applications: 1. Atmospheric studies; 2. Studies of solid wastes, sediments and soils; 3. Hydrochemical and miscellaneous studies; Panel: Current problems and future trends in the use of isotopes and radiation for conservation of the environment.

STI/PUB/904 (699 pp., 221 figures; 1992)

ISBN 92-0-000492-X

Price: 1900 Austrian schillings (€138.08)

EFFECTS OF IONIZING RADIATION ON PLANTS AND ANIMALS AT LEVELS IMPLIED BY CURRENT RADIATION PROTECTION STANDARDS *Technical Reports Series No. 332*

Releases of waste gases and liquids into the environment from facilities using radioactive materials are controlled so that people living in the vicinity are adequately protected from exposure to ionizing radiations. It is implicitly assumed that protecting humans will also protect the environment in which they live. Although this assumption has never been formally defended, neither has it been seriously challenged. This report examines the validity of the

assumption for the case of radioactive releases to the terrestrial and freshwater environments and also for solid waste disposal underground.

Contents: 1. Introduction; 2. Summary of the available information on the effects of ionizing radiation on populations; 3. Estimated dose to plants and animals under current radiation protection standards; 4. Summary and conclusions; References.

STI/DOC/10/332 (74 pp., 2 figures; 1992)

ISBN 92-0-100992-5

Price: 280 Austrian schillings (€20.35)

ELECTRICITY AND THE ENVIRONMENT ***Proceedings Series***

Proceedings of a Senior Expert symposium jointly organized by the Commission of the European Communities, the Council for Mutual Economic Assistance, the Economic Commission for Europe, the International Atomic Energy Agency, the International Energy Agency, the International Institute for Applied Systems Analysis, the Nuclear Energy Agency of the OECD, the United Nations Environment Programme, the World Bank, the World Health Organization and the World Meteorological Organization, in co-operation with the Government of Finland, and held in Helsinki, Finland, 13-17 May 1991. The objective of the symposium was to provide a comprehensive assessment of the environmental and health factors as well as the economic factors involved in supplying electricity services, and to suggest a framework within which these issues should be taken into account in making future plans and decisions on electricity production and use. The potential role of different ways of meeting electricity service requirements was also analysed, taking into consideration both demand side and supply options in the light of their comparative economic, environmental and health related impacts.

Contents: Opening session; Energy and electricity supply and demand; Implications for the global environment; Energy sources and technologies for electricity generation; Comparative environmental and health effects of different energy systems for electricity generation; Incorporation of environmental and health impacts into policy, planning and decision making for the electricity sector; Luncheon sessions; Policy aspects of electricity and the environment; Key issues and findings and round table on challenges for international co-operation.

STI/PUB/877 (501 pp., 65 figures; 1991)

ISBN 92-0-150091-2

Price: 1300 Austrian schillings (€94.47)

**ENVIRONMENTAL BEHAVIOUR OF
CROP PROTECTION CHEMICALS**
Proceedings Series

Proceedings of a symposium on the Use of Nuclear and Related Techniques for Studying Environmental Behaviour of Crop Protection Chemicals jointly organized by the IAEA and FAO, Vienna, 1–5 July 1996. Use of pesticides has become an integral component of agricultural systems worldwide. Concerning the environment, information must be provided before a product is registered in order to provide assurance that it can be used without unacceptable hazard to non-target organisms. In addition, post-registration surveillance and monitoring studies are necessary to check that the fate and environmental effects of pesticides under field conditions are consistent with predictions. Much of the data are generated using radioisotopes and other nuclear or related methods. Developing countries often have to rely on data generated elsewhere in order to assess the acceptability of a compound. The purpose of the symposium was to examine the circumstances under which extrapolation from one environment to another is valid on the basis of data generated under comparable conditions. It also considered ways in which relatively simple methods can be used to verify the field applicability of data obtained under sophisticated experimental conditions.

Contents: Opening session; Pesticides in the environment: International perspective; Pesticides in the environment: Regional and country situations; Fate and behaviour of pesticides in the terrestrial environment; Fate and behaviour of pesticides in the aquatic environment; Comparison of fate and behaviour of pesticides in different environments; Effect of pesticides on non-target species; Maximizing the use of environmental data.

STI/PUB/1003 (519 pp., 111 figures; 1997)

ISBN 92-0-104596-4

Price: 1520 Austrian schillings (€110.46)

**ENVIRONMENTAL CONTAMINATION FOLLOWING
A MAJOR NUCLEAR ACCIDENT**
Proceedings Series

Proceedings of a symposium jointly organized with the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme and the World Health Organization, Vienna, 16–20 October 1989. The extent and effects of the potential contamination due to a major accident at a nuclear facility are matters of public concern. Scientific research on the after-effects of the Chernobyl accident on the environment and on human health has provided new data pertaining to large scale contamination. Papers at the symposium covered a wide range of subjects, including: monitoring of radioactive contaminants in the

environment, levels of radioactive contamination of farmland, agricultural crops and dairy products in subsequent years, methods for minimizing contamination of feed and food.

Contents: Vol. 1: Part I: Radioactive contamination of the environment: (a) General; (b) Air; (c) Soil; (d) Water; Part II: Monitoring of radioactivity: (a) General; (b) Strategies and policy; (c) Methods and techniques. Vol. 2: Part III: Radioactive contamination of agricultural land and agricultural produce; Part IV: Countermeasures to reduce radionuclide contamination of food chains; Part V: Radiation exposure of populations; Part VI: Radionuclides and international trade in food; Special Session: Hot particles; Summary of the Symposium: Important Issues with Significance for the Future.

STI/PUB/825 (Vol. 1: 497 pp., 144 figures; Vol. 2: 451 pp., 70 figures; 1990)

1: ISBN 92-0-020090-7

2: ISBN 92-0-020190-3

Price: Vol. 1: 1340 Austrian schillings (€97.38)

Vol. 2: 1200 Austrian schillings (€87.21)

ENVIRONMENTAL IMPACT OF RADIOACTIVE RELEASES *Proceedings Series*

Proceedings of a symposium, Vienna, 8-12 May 1995. This was the first major IAEA meeting for more than a decade to deal specifically with the transfer of radionuclides in the environment. Its purpose was to review the information that has become available in recent years, notably as a result of the Chernobyl accident but also gained from studies of the discharges from civil and military nuclear facilities in the early nuclear age. This information has been used for improving the reliability of environmental model predictions, and the main results of the IAEA/CEC programme on Validation of Environmental Model Predictions (VAMP) were presented. In addition, progress in the IAEA programme on the International Arctic Seas Assessment Project (IASAP) was summarized.

Contents: Global impact assessments; New roles for environmental monitoring; Radionuclide releases to the atmosphere; Radionuclide releases to the aquatic environment; Radionuclides in the terrestrial environment; Radionuclide transfer in the freshwater environment; Environmental model testing; Radiological impact assessment; Environmental remediation; Topical discussions.

STI/PUB/971 (874 pp., 178 figures; 1995)

ISBN 92-0-104495-X

Price: 2480 Austrian schillings (€180.23)

→**FORTHCOMING**

**GENERIC MODELS FOR USE IN ASSESSING
THE IMPACT OF DISCHARGES OF RADIOACTIVE
SUBSTANCES TO THE ENVIRONMENT**
Safety Reports Series No. 19

This Safety Report describes an approach for assessing doses to members of the public as part of an environmental impact analysis of predictive radioactive discharges. This is achieved by using screening models which describe environmental processes in mathematical terms, producing a quantitative result which can be used in the decision making process. This report supports Safety Standards Series No. WS-G-2.3, Regulatory Control of Radioactive Discharges to the Environment (2000), and expands and supersedes Safety Series No. 57, Generic Models and Parameters for Assessing the Environmental Transfer of Radionuclides from Routine Releases (1982).

Contents: 1. Introduction; 2. Procedures for screening radionuclide discharges; 3. Atmospheric dispersion; 4. Radionuclide transport in surface waters; 5. Transport of radionuclides through terrestrial and aquatic food chains; 6. Dosimetric, habit and other data for dose estimation; 7. The estimation of collective dose for screening purposes; 8. Procedures to follow when estimated doses exceed the specified reference level; Annex I: Screening dose calculation factors; Annex II: Radionuclide half-lives and decay constants; Annex III. Special considerations for assessment of discharges of tritium and carbon-14; Annex IV: Example calculations; Annex V: Description of the Gaussian plume model; Annex VI: Radionuclide transport in surface waters; Annex VII: Methods used in the estimation of collective doses for screening purposes.

Foreseen publication date: June 2001

STI/PUB/1103 (approx. 217 pp., 21 figures; 2001)

ISBN 92-0-100501-6

Price: not yet set

**GUIDELINES FOR AGRICULTURAL
COUNTERMEASURES FOLLOWING AN
ACCIDENTAL RELEASE OF RADIONUCLIDES**
Technical Reports Series No. 363

This report is a collation of information and experience gained from the Chernobyl accident in 1986 concerning the transfer of radionuclides, especially ^{137}Cs and ^{90}Sr , through food chains to humans and the ways to effectively reduce them. Accounts of measures taken in various countries following the Chernobyl accident, which at the time caused significant radioactive contamination of the environment over widely separated areas, some relatively remote from the site, are included.

Contents: Part I. Introduction; 1. Introduction; 2. General considerations; 3. Developing a strategy for agricultural countermeasures; Part II. Agricultural countermeasures: Scientific basis and practice; 4. Introduction; 5. Preventive measures to be applied before and during the arrival of radioactive fallout; 6. Countermeasures to be applied in the first few weeks after deposition; 7. Countermeasures to be applied in the medium and long term; 8. Losses of radionuclides in food by processing and culinary preparation; Part III. Organizing for response; 9. Introduction; 10. Emergency preparedness; 11. Response; 12. Public information and information for farmers; Part IV. Contamination in agriculture from past nuclear accidents; 13. Introduction; 14. Nuclear accident requiring countermeasures only in the short term; 15. Nuclear accident requiring countermeasures in both the short and long term; Glossary.

STI/DOC/010/363 (115 pp., 1 figure; 1994)

ISBN 92-0-100894-5

Price: 400 Austrian schillings (€29.07)

**HANDBOOK OF PARAMETER VALUES FOR
THE PREDICTION OF RADIONUCLIDE TRANSFER
IN TEMPERATE ENVIRONMENTS
Technical Reports Series No. 364**

This handbook has been produced in collaboration with the International Union of Radioecologists. It should serve as a convenient and authoritative reference for radionuclide transfer parameter values used in biospheric assessment models. It supplements Safety Series No. 57 (1982), "Generic Models and Parameters for Assessing the Environmental Transfer of Radionuclides from Routine Releases".

Contents: 1. Introduction; 2. Agricultural systems — vegetation; 3. Agricultural systems — milk, meat and eggs; 4. Freshwater ecosystems — fish; 5. Natural ecosystems; 6. Food processing transfer parameters.

STI/DOC/010/364 (74 pp., 3 figures; 1994)

ISBN 92-0-101094-X

Price: 280 Austrian schillings (€20.35)

**HARMONIZATION OF HEALTH RELATED
ENVIRONMENTAL MEASUREMENTS USING
NUCLEAR AND ISOTOPIC TECHNIQUES
Proceedings Series**

Proceedings of a symposium held in Hyderabad, India, 4-7 November 1996. The aim of the symposium was to provide an international forum for discussion of the applications of nuclear

analytical techniques and related isotopic tracer methods, particularly in the area of analytical quality assurance, including validation of analytical methods and development of new analytical reference materials. As these methodologies contribute substantially to the harmonization of data, they are playing an important role in the application of newly emerging techniques such as quality management and quality assurance standards (e.g. ISO-25 and ISO-9000) in environmental analytical laboratories. The symposium programme covered a wide variety of applications of nuclear (and related) analytical techniques (mainly neutron activation analysis, energy dispersive X ray fluorescence, particle induced X ray emission and inductively coupled plasma-mass spectrometry) as used in the study of air particulates, solid waste products, sediments, food, water, human tissues, biomonitors and other kinds of environmental samples.

Contents: Quality systems and strategies; Reference materials: Production, certification and use; Nuclear analytical techniques: General aspects and quality assurance/quality control; Nuclear techniques and applications of quality assurance/quality control; Biological systems; Nuclear techniques and applications of quality assurance/quality control: Non-biological systems; Poster presentations.

STI/PUB/1006 (663 pp., 128 figures; 1997)

ISBN 92-0-103697-3

Price: 1960 Austrian schillings (€142.44)

HEALTH AND ENVIRONMENTAL IMPACTS OF ELECTRICITY GENERATION SYSTEMS: PROCEDURES FOR COMPARATIVE ASSESSMENT → **NEW**
Technical Reports Series No. 394

The present report is intended to assist in the design and implementation of comparative risk assessment studies for the estimation of health and environmental impacts of various electricity generation options. It sets out the framework for carrying out such assessments and identifies the major technical issues and uncertainties in the assessment process.

Contents: 1. Introduction; 2. Impacts and impact assessment: Basic concepts; 3. Methodological approach for estimating health and environmental impacts; 4. Calculation and use of impact indicators for comparative assessment; 5. Key methodological issues; Appendix I: Global climate change; Appendix II: Energy security.

STI/DOC/010/394 (193 pp., 8 figures; 1999)

ISBN 92-0-102999-3

Price: 630 Austrian schillings (€45.78)

**ISOTOPE TECHNIQUES IN THE
STUDY OF ENVIRONMENTAL CHANGE**
Proceedings Series

Proceedings of a symposium on Isotope Techniques in the Study of Past and Current Environmental Changes in the Hydrosphere and the Atmosphere, Vienna, 14–18 April 1998. The symposium was structured in five sessions of oral presentations, a poster session and a round table discussion that focused on trends and future requirements in isotope hydrology and on applications in climate and environmental research. The major themes covered by the presentations included the use of isotopic tracers in studies of atmospheric and hydrospheric changes and of human impacts on water and the environment. Special emphasis was placed on isotopic archives of climatic and environmental change. Some contributions addressed new technical approaches.

Contents: Opening session; Isotopic tracers of the atmosphere; Isotopic tracers of the hydrosphere; Isotopic studies of man-made hydrological impact; Isotopic archives of climatic and environmental change; New technical approaches; Poster session.

STI/PUB/1024 (932 pp., 334 figures; 1998)

ISBN 92-0-100598-9

Price: 2720 Austrian schillings (€197.67)

**ISOTOPE TECHNIQUES IN THE STUDY OF PAST
AND CURRENT ENVIRONMENTAL CHANGES
IN THE HYDROSPHERE AND THE ATMOSPHERE**
Proceedings Series

Proceedings of a symposium held in Vienna, 19–23 April 1993. Natural isotopes are among the most powerful tools for investigating past and current environmental changes. In particular, stable isotopes have proved to be very useful proxy indicators of climate related parameters such as surface air temperature, relative humidity of the atmosphere and amount of precipitation, whereas radioactive isotopes are widely used as a dating tool. The release of radionuclides during the nuclear bomb tests permitted studies of the dynamics of transport and mixing processes in the atmosphere. It also allowed a global tracer experiment on the hydrological and carbon cycles, which substantially contributed to better understanding of these two vital compartments of the global ecosystem. A wide spectrum of themes was discussed at the symposium, covering both the 'present' and the 'past' of the global atmosphere/hydrosphere system. Case studies as well as methodological aspects of various isotope techniques applied in both areas of research were presented.

Contents: Isotopes in atmospheric studies; Isotopes in the soil-plants-atmosphere system; Degradation of water resources;

Palaeohydrology and palaeowaters; Isotope indicators of climatic changes; Poster presentations.

STI/PUB/908 (623 pp., 190 figures; 1993)

ISBN 92-0-103293-5

Price: 1740 Austrian schillings (€126.45)

**ISOTOPE TECHNIQUES IN WATER
RESOURCES DEVELOPMENT 1991**

Proceedings Series

Proceedings of a symposium organized in co-operation with UNESCO and held in Vienna, 11–15 March 1991. The main themes were the use of isotope techniques in solving practical problems of water resources assessment and development, particularly with respect to groundwater protection, and in studying environmental problems related to water, including the palaeohydrological and palaeoclimatological aspects. The oral presentations were largely concerned with the current status and trends in groundwater dating. The proceedings contain the papers of 37 oral presentations and the extended synopses of 47 poster presentations.

Contents: Interface processes between the atmosphere and the hydrosphere; Surface water and sediments; Groundwater dating: Problems and new approaches; Groundwater dating: Problems and new approaches — methodological aspects and models; Groundwater; Environmental problems and water pollution; Palaeohydrology and palaeoclimatology; Poster presentations.

STI/PUB/875 (789 pp., 273 figures; 1992)

ISBN 92-0-000192-0

Price: 2100 Austrian schillings (€152.61)

ISOTOPES IN WATER RESOURCES MANAGEMENT

Proceedings Series

Proceedings of a symposium organized in co-operation with UNESCO and held in Vienna, 20–24 March 1995. The main topics addressed were water resources management, with emphasis on origin and recharge of groundwater, groundwater dynamics and pollution, modelling approaches and geothermal and palaeowater resources. The remaining discussions were concerned with surface water and sediments, unsaturated zones and methodological aspects. The proceedings contain the papers of 43 oral presentations and the extended synopses of over 100 poster presentations.

Contents: (Vol. 1) Recent developments; Surface water and sediments; Unsaturated zones; Origin and recharge of ground-

water; (Vol. 2) Dynamics of groundwater; Groundwater pollution; Modelling approaches; Geothermal and palaeowaters.

STI/PUB/970 (Vol. 1: 463 pp., 185 figures; Vol. 2: 530 pp., 237 figures; 1996)

1: ISBN 92-0-105595-1

2: ISBN 92-0-100796-5

Price: Vol. 1: 1360 Austrian schillings (€98.84)

Vol. 2: 1520 Austrian schillings (€110.46)

**LABORATORY TRAINING MANUAL ON THE USE
OF NUCLEAR AND ASSOCIATED TECHNIQUES
IN PESTICIDE RESIDUES**

Technical Reports Serles No. 329

The present revised Manual gives a concise yet comprehensive presentation of the basic principles necessary for the proper use of nuclear and associated techniques in pesticide residue analysis to obtain information on the metabolism or fate of pesticide chemicals in plants, animals, soil, water and non-target organisms.

Contents: Part I. Properties of radionuclides and radiation; Part II. Radiation detection and measurement of radioactivity; Part III. Radiation protection; Part IV. Tracer methodology; Part V. Radiation biology; Part VI. Introduction to practical work; Part VII. Laboratory exercises; Part VIII. Appendices; Part IX. Glossary.

STI/DOC/10/329 (264 pp., 40 figures; 1991)

ISBN 92-0-115091-1

Price: 780 Austrian schillings (€56.68)

**NUCLEAR TECHNIQUES IN SOIL-PLANT
STUDIES FOR SUSTAINABLE AGRICULTURE
AND ENVIRONMENTAL PRESERVATION**

Proceedings Serles

Proceedings of a symposium jointly organized by the IAEA and FAO, Vienna, 17-21 October 1994. The objective of the symposium was to assess the progress being made in the use of nuclear and related techniques for studying various aspects of soil fertility and plant nutrition, environmental problems, the potential and limitations of existing methods, and the possibilities for further development. Analytical methods and equipment are discussed, as are isotope dilution techniques, transfers of fixed N to non-fixing crops, crop water consumption, labelled fertilizer involving fertigation, ^{13}C discrimination, erosion and soil degradation, and global warming and climate change. The proceedings should assist scientists, particularly those in developing countries, to find ways of increasing and sustaining soil fertility and crop production while preserving the environment.

Contents: Opening session; Recent developments in analytical methods and equipment; Fertilizer use and management studies; Biological nitrogen fixation in sustainable cropping systems; Soil organic matter studies and nutrient cycling; Water use and management studies; Plant physiological aspects in crop production; Environmental pollution and preservation; Soil conservation, soil erosion and desertification; Poster session.

STI/PUB/947 (735 pp., 139 figures; 1995)

ISBN 92-0-100895-3

Price: 2120 Austrian schillings (€154.07)

RADIOLOGICAL ASSESSMENT REPORTS SERIES

This series comprises reports on assessments made by the IAEA in areas around the world that are contaminated by radioactive residues from past activities conducted without applying international radiation protection standards. Such residues result from peaceful activities such as uranium mining and milling as well as from military activities that were outside the scope of international standards, including the production and testing of nuclear weapons.

RADIOLOGICAL CONDITIONS AT BIKINI ATOLL: PROSPECTS FOR RESETTLEMENT *Radiological Assessment Reports Series*

The general concern about the state of the environment has focused the attention of many countries in recent years on the need to remediate areas affected by radioactive residues. The present assessment was requested by the Government of the Republic of the Marshall Islands, with the purpose of obtaining an independent view of the radiological situation on Bikini Atoll, the site of nuclear weapons testing in the period 1946–1958. In particular, questions were posed about whether the former inhabitants should be permitted to return to their homes and about the nature and extent of any remedial actions which might be necessary. This report presents the results and conclusions of a meeting of international experts convened by the IAEA and chaired by K. Lokan, Australia, in December 1995 to review the available information on the subject.

Contents: 1. Summary; 2. The Marshall Islands; 3. Background: Nuclear weapon testing in the Marshall Islands and its aftermath at Bikini Atoll; 4. The international review; 5. Radiological concepts in the context of nuclear weapon testing; 6. Present environmental radiological conditions at Bikini Atoll; 7. Estimates of potential radiation doses to people resettling Bikini island under present conditions; 8. Radiation protection criteria; 9. Habitability of Bikini islands; 10. Conclusions and recommendations; References;

Addendum: IAEA corroboratory monitoring mission to Bikini island.

STI/PUB/1054 (67 pp., 11 figures, 21 × 30 cm; 1998)

ISBN 92-0-100398-6

Price: 280 Austrian schillings (€20.35)

**RADIOLOGICAL CONDITIONS AT THE
SEMIPALATINSK TEST SITE, KAZAKHSTAN:
Preliminary Assessment and
Recommendations for Further Studies
Radiological Assessment Reports Series**

This report presents the findings of a study of the current radiological conditions at the former nuclear test site at Semipalatinsk, Kazakhstan, conducted by a team of international experts under the auspices of the IAEA at the request of the Government of Kazakhstan. The objectives of the study were to assess the current and potential future radiation doses to the residents of the Semipalatinsk nuclear test site area and adjacent settlements, to advise on remedial action, where appropriate, and to recommend whether further radiological evaluation of the area is warranted.

Contents: 1. Summary; 2. The Semipalatinsk test site; 3. Background; 4. Programme of IAEA assistance; 5. Perspective on global nuclear weapons testing; 6. Radiological conditions at the Semipalatinsk test site; 7. Estimates of present and future doses to persons in and around the test site; 8. Radiation protection criteria; 9. Conclusions and recommendations; Appendix: Method of assessing radiation doses.

STI/PUB/1063 (43 pp., 10 figures, 21 × 30 cm; 1998)

ISBN 92-0-104098-9

Price: 200 Austrian schillings (€14.53)

**RADIOLOGICAL CONDITIONS OF
THE WESTERN KARA SEA
Radiological Assessment Reports Series**

This report presents the findings of the International Arctic Seas Assessment Project (IASAP), which was designed to address concerns over the potential health and environmental impacts of high level radioactive waste dumped in the shallow waters of the Arctic Seas. The following aspects were covered: (i) examination of the current radiological situation in Arctic waters due to the dumped wastes; (ii) evaluation of potential future releases from the dumped wastes; (iii) prediction of environmental transport of potential releases and assessment of the associated radiological impact on humans and biota; and (iv) examination of the feasibility, costs and benefits of possible remedial measures.

Contents: Executive summary; 1. Introduction; 2. Radiological protection and decision making; 3. The Arctic environment; 4. The radioactive source term; 5. Environmental modelling for radiological impact assessment; 6. Possible remedial actions; 7. Analysis of the need for remedial actions; 8. Conclusions and recommendations.

STI/PUB/1068 (124 pp., 38 figures, 21 × 30 cm; 1998)

ISBN 92-0-104298-1

Price: 440 Austrian schillings (€31.98)

*THE RADIOLOGICAL SITUATION AT THE
ATOLLS OF MURUROA AND FANGATAUFA
Reports by an International Advisory Committee
Radiological Assessment Reports Series*

The Study of the Radiological Situation at the Atolls of Mururoa and Fangataufa was conducted at the request of the Government of France to determine whether, as a consequence of French nuclear tests conducted above and beneath these atolls, radiological hazards could arise, now or in the future; and to recommend the form, scale and duration of any monitoring, remedial action or follow-up action that might be required. An International Advisory Committee was convened by the Director General of the IAEA to provide scientific direction and guidance on the conduct of the Study. The first meeting of the IAC was held in April 1996 and its final meeting in February 1998. In addition to IAEA Secretariat staff, 55 scientists from 18 countries and four international organizations participated in the Study, including the environmental sampling and surveillance campaigns, which involved 18 laboratories in 12 countries.

The results of the Study are presented in four separate publications: The *Main Report*; the *Executive Summary* (which is also incorporated in the *Main Report*); the *Summary Report*; and the *Technical Report*. The *Main Report* is the primary publication of the Study and provides a comprehensive scientific account, together with findings, conclusions and recommendation. The *Executive Summary* is reproduced from the original document presented to the IAEA Board of Governors. The *Summary Report* provides an extended synopsis of the Study for the benefit of a wider audience, and includes its findings, conclusions and recommendation in full. The *Main Report* is supported by the detailed *Technical Report* in six volumes, which is intended for the scientific specialist.

An international Conference was held from 29 June to 3 July 1998 to present the Study to the scientific community. The proceedings can be obtained with the *Technical Report*.

The Executive Summary and the Summary Report are available separately as priced publications. Purchasers of the Main Report (which incorporates the Executive Summary) will also receive the Summary Report at no extra cost, and may obtain the Technical Report in six volumes and the Conference proceedings at no extra charge by returning the reply card included with the Main Report.

**THE RADIOLOGICAL SITUATION
AT THE ATOLLS OF MURUROA
AND FANGATAUFA: Executive Summary
Report by an International Advisory Committee
Radiological Assessment Reports Series**

**SITUATION RADIOLOGIQUE
SUR LES ATOLLS DE MURUROA ET
DE FANGATAUFA: Synthèse
Rapport par un Comité consultatif international
Collection Rapports d'évaluations radiologiques**

The Executive Summary, which is incorporated in the Main Report and also available separately, presents a synopsis of the Main Report for the benefit of persons with executive, managerial or administrative responsibilities, together with its findings, conclusions and recommendation. It is issued as one single publication in English and French.

Contents/Table des matières: Introduction/Introduction; Objective/Objectif; Framework/Cadre; Conduct of the Study/Conduite de l'étude; Reports resulting from the Study/Rapports résultant de l'étude; Findings/Résultats; Conclusions/Conclusions; Recommendation/Recommandation; Participants in the Study/Personnes ayant participé à l'étude.

STU/PUB/1028/ES (26 pp., 21 × 30 cm: 1998)

ISBN 92-0-001898-X

Price: 200 Austrian schillings (€14.53)

**THE RADIOLOGICAL SITUATION
AT THE ATOLLS OF MURUROA AND
FANGATAUFA: Main Report
Report by an International Advisory Committee
Radiological Assessment Reports Series**

The Main Report, which incorporates the bilingual (English/French) Executive Summary (see above), gives a comprehensive scientific account of the Study, together with data on the French nuclear weapon tests. It presents the results of the Study's assessment of the environmental legacy of weapon testing at the atolls and estimates of consequent radiation doses at present and in the

future, drawing on the supporting detailed Technical Report. The findings, conclusions and recommendation are presented, together with an account of their basis in radiation protection and further background material to provide perspective.

Contents: Executive Summary; Part A: Background: 1. The Study; 2. Geography, geology and history of the atolls; 3. Nuclear testing programme; Part B: Present and predicted radiological situations: 4. Inventory of residual radioactive material in the biosphere at the atolls; 5. Inventory of residual radioactive material in the geosphere of the atolls; 6. Transport of residual radioactive material through the geosphere; 7. Effects of hypothetical disruptive events; 8. Transport of residual radioactive material through the marine environment; Part C: Results I; 9. Radiation doses and their potential for impact on human health; 10. Potential impact of radiation doses on biota; 11. The need for remediation; Perspective; Part D: Conclusions and recommendations; 12. Findings; 13. Conclusions; 14. Recommendation; References; Annex I: Retrospective assessment of the radiation doses attributable to atmospheric testing at the atolls; Annex II: Ciguatera: Incidence and cause; Annex III: Ionizing radiation: Levels and biological effects; Annex IV: Some fission and fusion physics and the testing of nuclear weapons; Glossary.

Purchasers of the Main Report will automatically receive the Summary Report at no extra cost.

STI/PUB/1028 (282 pp., 132 figures, 21 × 30 cm; 1998)

E ISBN 92-0-101198-9

F ISBN 92-0-203498-2

Price: 1200 Austrian schillings (€87.21)

**THE RADIOLOGICAL SITUATION
AT THE ATOLLS OF MURUROA AND
FANGATAUFA: Summary Report
Report by an International Advisory Committee
Radiological Assessment Reports Series**

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