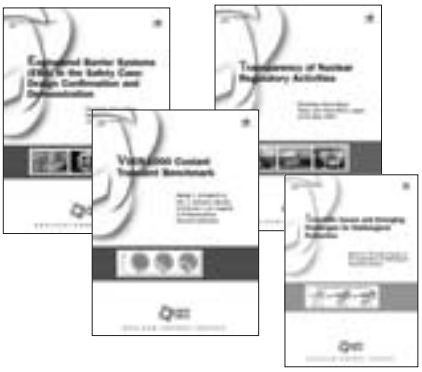
New publications



Nuclear safety and regulation

Transparency of Nuclear Regulatory Activities

Workshop Proceedings,Tokyo and Tokai-Mura, Japan, 22-24 May 2007

ISBN 978-92-64-04095-3, 316 pages. Price: € 60, US$ 78, £ 43, ¥ 8 300.

One of the main missions of nuclear regulators is to protect the public, and this cannot be completely achieved without public confidence. The more a regulatory process is transparent, the more such confidence will grow. Despite important cultural differences across countries, a number of common features characterise media and public expectations regarding any activity with an associated risk. A common understanding of transparency and main stakeholders' expectations in the field of nuclear safety were identified during this workshop, together with a number of conditions and practices aimed at improving the transparency of nuclear regulatory activities. These conditions and practices are described in the proceedings, and will be of particular interest to all those working in the nuclear regulatory field. Their implementation may, however, differ from one country to another depending on national context.

Radiological protection

The Process of Regulatory Authorisation (English-Japanese version)

規制認可のプロセス

ISBN 978-92-64-99028-9, 148 pages. Free: paper or web.

In parallel to the work carried out by the International Commission on Radiological Protection (ICRP) to review the broad principles of protection, the NEA Committee on Radiation Protection and Public Health (CRPPH) has examined how radiological protection could be better implemented by governments and/or regulatory authorities. To this end, the CRPPH has developed a concept that it calls "the process of regulatory authorisation". It is described in detail in this report, and is intended to help regulatory authorities apply more transparently, coherently and simply the broad recommendations of the ICRP to the real-life business of radiological protection regulation and application. The CRPPH recognises the importance of an appropriate level of stakeholder involvement in the process of regulatory authorisation.

Scientific Issues and Emerging Challenges for Radiological Protection

Report of the Expert Group on the Implications of Radiological Protection Science

ISBN 978-92-64-99032-6. Free: paper or web.

Scientific knowledge is constantly evolving as more advanced technologies become available and more in-depth research is carried out. Given the potential implications that new findings could have on policy decisions, in 1998 the NEA Committee on Radiation Protection and Public Health (CRPPH) performed a survey of state-of-the-art research in radiological protection science. This study suggested that, while the current system of radiological protection was well-underpinned by scientific understanding, growing knowledge in several areas could seriously impact policy and regulation. Ten years later, the CRPPH has again performed a survey of state-of-the-art research which reiterates and clarifies its earlier conclusions.

This report summarises the results of this latest CRPPH assessment of radiological protection science. Specifically, it explains that knowledge of non-targeted and delayed effects, as well as of individual sensitivity, have been significantly refined over the past ten years. Although at this point there is still no scientific certainty in these areas, based on the most recent studies and results, the report strongly suggests that policy makers and regulatory authorities should consider possible impacts that could arise from research in the next few years. Further, the report identifies research areas that should be supported to more definitively answer scientific questions having the most direct impacts on policy choices.

Radioactive waste management

Engineered Barrier Systems (EBS) in the Safety Case: Design Confirmation and Demonstration

Workshop Proceedings, Tokyo, Japan, 12-15 September 2006

ISBN 978-92-64-03995-7, 150 pages. Price: € 45, US$ 58, £ 32, ¥ 6 200.

The presence of several barriers serving complementary safety functions enhances confidence that radioactive waste placed in deep geological repositories will be adequately isolated and contained to protect human health and the environment. The barriers include the natural geological barrier and the engineered barrier system (EBS). The EBS itself may comprise a variety of sub-systems or components, such as the waste form, container, buffer, backfill, seals and plugs. Given the importance of this subject, the Integration Group for the Safety Case (IGSC) of the OECD Nuclear Energy Agency (NEA) sponsored a series of workshops with the European Commission to develop greater understanding of how to achieve the necessary integration for the successful design, testing, modelling and performance assessment of EBS for deep underground disposal of radioactive waste.

These proceedings present the main findings from, and the papers delivered at, the fourth NEA-EC workshop on EBS, which took place in Tokyo, Japan, in September 2006. This final workshop of the series focused on strategies and methods to demonstrate that EBS designs will fulfil the relevant requirements for long-term safety, engineering feasibility and quality assurance. The workshop highlighted that large-scale experiments have confirmed the feasibility of techniques for manufacturing and installing engineered components in disposal systems and have also provided valuable lessons to improve designs and refine practical aspects to construct and implement EBS.

Radioactive Waste Management in Spain: Co-ordination and Projects

FSC Workshop Proceedings, L'Hospitalet de l'Infant, Spain, 21-23 November 2005

ISBN 978-92-64-03941-4, 142 pages. Price: € 40, US$ 52, £ 28, ¥ 5 500.

The sixth workshop of the OECD/NEA Forum on Stakeholder Confidence (FSC) was hosted by ENRESA, the Spanish agency responsible for the management of radioactive waste and the dismantling of nuclear power plants, and the Council of Nuclear Safety (CSN), with the support of the Association of Spanish Municipalities in Areas Surrounding Nuclear Power Plants (AMAC). The workshop took place at L'Hospitalet de l'Infant, Catalonia, Spain,

on 21-23 November 2005. At this workshop, Spanish stakeholders and delegates from 14 countries discussed current co-ordination of radioactive waste management decision making in Spain. Findings were shared from Cowam-Spain, a co-operative research project on the involvement of local stakeholders, the relationship between national and local levels of decision making, and the long-term sustainability of decisions regarding the siting of a centralised interim storage facility for high-level waste. These proceedings include the workshop presentations and discussions, as well as the rapporteurs' reflections on what was learned about policy making and participative decision making.

Nuclear law

Nuclear Law Bulletin

ISSN 0304-341X. Yearly subscription (two issues): € 99, US$ 125, £ 68, ¥ 13 400.

Considered to be the standard reference work for both professionals and academics in the field of nuclear law, the *Nuclear Law Bulletin* is a unique international publication providing its subscribers with up-to-date information on all major developments falling within the domain of nuclear law. Published twice a year in both English and French, it covers legislative developments in almost 60 countries around the world as well as reporting on relevant jurisprudence and administrative decisions, international agreements and regulatory activities of international organisations.

Nuclear science and the Data Bank

Actinide and Fission Product Partitioning and Transmutation

Ninth Information Exchange Meeting, Nîmes, France, 25-29 September 2006

ISBN 978-92-64-99030-2, 752 pages. Free: paper or web.

Partitioning and transmutation (P&T) has the potential of significantly reducing the radiotoxicity of nuclear waste and thus minimising the amount of it that needs to be stored in deep geological repositories. In order to provide experts with a forum to present and discuss developments in the field of P&T, since 1990 the OECD Nuclear Energy Agency (NEA) has been organising biennial information exchange meetings on actinide and fission product partitioning and transmutation. These proceedings contain all the technical papers and posters presented at the Ninth Information Exchange Meeting, which was held on 25-29 September 2006 in Nîmes, France. The meeting covered such issues as progress in fuels and targets, partitioning and waste forms, spallation targets, dedicated transmutation systems, coolants, and physics and nuclear data. In addition, the integration of P&T programmes within different fuel cycle strategies was discussed, as well as the potential transmutation of waste in Generation IV reactors. The implications for waste management strategies, in particular for geological disposal, were also explored. More than 100 papers were presented during the meeting.

Assessment of Fission Product Decay Data for Decay Heat Calculations

International Evaluation Co-operation, Volume 25

ISBN 978-92-64-99034-0, 60 pages. Free: paper or web.

This publication presents the conclusions of the work undertaken by Subgroup 25 of the NEA Working Party on International Evaluation Co-operation, which focused on the assessment and improvement of the evaluated decay data sub-libraries in order to obtain more accurate estimations of decay heat. Recommendations have been prepared for total absorption gamma-ray spectroscopy (TAGS) measurements of specific fission product nuclides to be undertaken in close collaboration with experimentalists in Subgroup 25.

Chemical Thermodynamics of Solid Solutions of Interest in Nuclear Waste Management - Volume 10

A State-of-the-art Report

ISBN 978-92-64-02655-1, 288 pages. Price: € 80, US$ 104, £ 57, ¥ 11 100.

This volume provides a state-of-the-art report on the modelling of aqueous-solid solution systems by the combined use of chemical thermodynamics and experimental and computational techniques. These systems are ubiquitous in nature and therefore intrinsic to the understanding and quantification of radionuclide containment and retardation processes present in geological repositories of radioactive waste. Representative cases for study have been chosen from the radioactive waste literature to illustrate the application of the various approaches. This report has been prepared by a team of four leading experts in the field under the auspices of the OECD/NEA Thermochemical Database (TDB) Project. The team comprised Jordi Bruno (Enviros, Spain), Dirk Bosbach (FZK, Germany), Dmitrii Kulik (PSI, Switzerland) and Alexandra Navrotsky (UC Davis, USA).

JANIS-3.0 (DVD)

Free on request.

The goal of the NEA Data Bank is to be the international centre of reference for its member countries with respect to basic nuclear tools, such as computer codes and nuclear data, used for the analysis and prediction of phenomena in the nuclear field; and to provide a direct service to its users by developing, improving and validating these tools and making them available as requested. JANIS (Java-based nuclear information software) is a display program designed to facilitate the visualisation and manipulation of nuclear data. Its objective is to allow the user of nuclear data to access numerical values and graphical representations without prior knowledge of the storage format. It offers maximum flexibility for the comparison of different nuclear data sets.

VVER-1000 Coolant Transient Benchmark

Phase I (V1000CT-1), Vol. 3: Summary Results of Exercise 2 on Coupled 3-D Kinetics/Core Thermal-hydraulics

ISBN 978-92-64-99035-7, 92 pages. Free: paper or web.

In the field of coupled neutronics/thermal-hydraulics computation there is a need to enhance scientific knowledge in order to develop advanced modelling techniques for new nuclear technologies and concepts, as well as current applications. Recently developed best-estimate computer code systems for modelling 3-D coupled neutronics/thermal-hydraulics transients in nuclear cores and for the coupling of core phenomena and system dynamics need to be compared against each other and validated against results from experiments. International benchmark studies have been set up for this purpose. The present volume is a follow-up to the first two volumes. While the first described the specification of the benchmark, the second presented the results of the first exercise that identified the key parameters and important issues concerning the thermal-hydraulic system modelling of the simulated transient caused by the switching on of a main coolant pump when the other three were in operation. Volume 3 summarises the results for Exercise 2 of the benchmark that identifies the key parameters and important issues concerning the 3-D neutron kinetics modelling of the simulated transient. These studies are based on an experiment that was conducted by Bulgarian and Russian engineers during the plant-commissioning phase at the VVER-1000 Kozloduy Unit 6. The final volume will soon be published, completing Phase 1 of this study.