Decommissioning International Status And Perspectives

Taking into consideration the work done to date on research reactor decommissioning, it is timely to provide an up to date basis for ongoing and intended activities in this field. This report reviews, from a historical perspective, decommissioning projects completed in recent years or under way, and assesses progress as well as open and new issues. It is meant to facilitate timely, safe and efficient completion of decommissioning projects for research reactors by highlighting technologies, and planning or management methodologies, and suggesting ways to overcome expected issues. The report includes a CD-ROM providing details of several hundred research reactor decommissioning projects.

Future Energy: Improved, Sustainable and Clean Options for Our Planet, Third Edition provides scientists and decision-makers with the knowledge they need to understand the relative importance and magnitude of various energy production methods in order to make the energy decisions necessary for sustaining development and dealing with climate change. The third edition of Future Energy looks at the present energy situation and extrapolates to future scenarios related to global warming and the increase of carbon dioxide and other greenhouse gases in the atmosphere. This thoroughly revised and updated edition contains over 40 chapters on all aspects of future energy, with each chapter updated and expanded by expert scientists and engineers in their respective fields. Provides readers with an up-to-date overview of available energy options, both traditional and renewable, as well as the necessary tools needed to make informed decisions Covers a wide spectrum of future energy resources presented in a single book with chapters written by experts from each particular field Includes many new chapters that cover topics on conventional oil and fossil fuels, a new section on energy storage, and a look at new energy

Celebrating the 20th anniversary of the Baltic Yearbook of International Law, this volume contains a selection of articles chosen by the editors to showcase the Yearbook’s important contribution to international legal scholarship and practice. It thus offers ground-breaking articles on diverse legal areas, including international humanitarian law, international human rights law, peaceful settlement of disputes, European Union law, and the history of international law. Naturally, issues relevant to the international legal status of the Baltic States and the consequences of their occupation by the Soviet Union are also explored, as well as to transitional justice and the collapse of communism. Finally, articles on new areas, such as bioethics and cyperspace, are also included, showing where the development of science prompts the need for legal regulation. This wide-ranging selection reflects the Yearbook’s aim to offer a unique forum among international legal periodicals - where the past meets the future.

This book is a guide to claims about the proper role of government and markets in a global economy. Moving between systematic comparison of 19 rich democracies and debate about what the United States can do to restore a more civilized, egalitarian, and fair society, Harold L. Wilensky tells us how six of these countries got on a low road to economic progress and which components of their labor-crunch strategy are uniquely American. He provides an overview of the impact of major dimensions of globalization, only one of which - the interaction of the internationalization of finance and the rapid increase in the autonomy of central banks - undermines either national sovereignty or job security, labor standards, and the welfare state. Although Wilensky views American policy and politics through the lens of globalization, he concludes that the nation-state remains the center of personal identity, social solidarity, and political action. He concentrates on what national differences mean for the well-being of nations and their people. Drawing on lessons from abroad and from America's own past successes,

Wilensky shows how we can reverse our three-decade decline. He argues that, in order to get off the low road, we must overcome the myths of "moderation," the rise of the "independent voter," and a rightward shift of the electorate. He specifies a feasible domestic agenda that matches majority sentiments in all rich democracies.

The processes and associated dilemmas of nuclear power plant decommissioning are reviewed in this publication. Decommissioning involves the clearing up and disposal of a retired nuclear plant and its equipment of such a way as to safeguard the public from the dangers of radioactivity. Related problem areas are identified and include: (1) closure methods (discussing the options of decontamination and dismantlement, storage, and reaction of a permenent tomb); (2) high-level waste management (identifying spent fuel removal and disposal problems); (3) retired reactor disposal (citing examples of waste management systems employed in the United States and in Europe); (4) economics (providing cost estimates for major expense items); (5) savings mechanisms (proposing efforts to offset future decommissioning costs); and (6) long-term strategies (urging the need for safe disposal and decommissioning research and development programs). (ML)

Once a nuclear installation has reached the end of its safe and economical operational lifetime, the need for its decommissioning arises. Different strategies can be employed for nuclear decommissioning, based on the evaluation of particular hazards and their attendant risks, as well as on the analysis of costs of clean-up and waste management. This allows for decommissioning either soon after permanent shutdown, or perhaps a long time later, the latter course allowing for radioactivity levels to drop in any activated or contaminated components. It is crucial for clear processes and best practices to be applied in decommissioning such installations and sites, particular where any significant health and environmental risks exist. This book critically reviews the nuclear decommissioning processes and technologies applicable to nuclear power plants and other civilian nuclear facilities. Part one focuses on the fundamental planning issues in starting a nuclear decommissioning process, from principles and safety regulations, to financing and project management. Part two covers the execution phase of nuclear decommissioning projects, detailing processes and technologies such as dismantling, decontamination, and radioactive waste management, as well as environmental remediation, site clearance and reuse. Finally, part three details international experience in the decommissioning of nuclear applications, including the main nuclear reactor types and nuclear fuel cycle facilities, as well as small nuclear facilities and legacy nuclear waste sites. Critically reviews nuclear decommissioning processes and technologies applicable to nuclear power plants and other civilian nuclear facilities Discusses the fundamental planning issues in starting a nuclear decommissioning process Considers the execution phase of nuclear decommissioning projects, including dismantling, decontamination, and radioactive waste management, as well as environmental remediation, site clearance and reuse

Originally published in 1990. This book argues that a better understanding of the social impact of decommissioning - in areas such as jobs, waste, economics, opinion, law, public policy, land-use and legacies - is vital to the successful application of any technical solution. The issues raised are divided into three areas which deal with those problems that have already been recognized, the questions that decommissioning itself will raise and those that may result from likely future developments. The book aims to initiate a process of appraisal by examining several of the more obvious social ties to decommissioning.

Originally published in 1991, this comprehensive volume provides not only technical information regarding the global nuclear power industry, but also discusses the economic, social and political issues which have an impact on the industry. There are specific chapters on the nuclear industry in the USA and Canada, Western Europe, the former USSR and Eastern Europe and East Asia which examine in detail the particular set of geographical and economic conditions which affect each area. Including an extensive glossary, figures and tabulated information, this

book remains one of the most accessible, impartial and thorough studies of the global nuclear industry.

This timely book examines in detail the life-cycle of petroleum products, the environmental issues arising, and how the industry has responded to these challenges with the application of technology and organisation. Coverage is of the complete product life-cycle form production and refining of crude oil through to the use of the products and includes such topical issues as decommissioning of offshore oil installations. The oil industry produces a range of products without which modern civilisation could not exist; however, an increasingly environmentally aware society demands that products are manufactured without undue pollution or hazard to people. The ability and willingness of the industry to comply determines whether society continues to allow it a licence to operate. For each stage of a product life-cycle, the issues and constraints are identified - what they are, who is imposing them and why, their technical and financial implications. The technological solutions which have been found or are being developed are then outlined in a legal and commercial context. Written primarily for those working in the oil and related industries, this book also provides essential reference material for government and research institutions and all those with an interest in environmental technological issues.

Sustainable Power Generation: Current Status, Future Challenges, and Perspectives addresses emerging problems faced by the transition to sustainable electricity generation and combines perspectives of engineering and economics to provide a well-rounded overview. This book features an in-depth discussion of the main aspects of sustainable energy and the infrastructure of existing technologies. It goes on to evaluate natural resources that are sustainable and convenient forms of energy, and finishes with an investigation of the environmental effects of energy systems and power generating systems of the future. Other sections tackle fundamental topics such as thermal power, nuclear energy, bioenergy, hydropower, challenges and risks to sustainable options, and emerging technologies that support global power trends. Sustainable Power Generation explores the future of sustainable electricity generation, highlighting topics such as energy justice, emerging competences, and major transitions that need to be navigated. This is an ideal reference for researchers, engineers, and other technical specialists working in the energy sector, as well as environmental specialists and policy makers. Provides a multidisciplinary, structured approach to electricity generation, focusing on the key areas of technology, business, project management, and sustainability Includes analytics and discussions of sustainability metrics, underlying issues, and challenges Presents business cases, offering a mix of academic depth and practicality on energy options

The Magnitude 9 Great East Japan Earthquake on March 11, 2011, followed by a massive tsunami struck TEPCO’s Fukushima Daiichi Nuclear Power Station and triggered an unprecedented core melt/severe accident in Units 1 – 3. The radioactivity release led to the evacuation of local residents, many of whom still have not been able to return to their homes. As a group of nuclear experts, the Atomic Energy Society of Japan established the Investigation Committee on the Nuclear Accident at the Fukushima Daiichi Nuclear Power Station, to investigate and analyze the accident from scientific and technical perspectives for clarifying the underlying and fundamental causes, and to make recommendations. The results of the investigation by the AESJ Investigation Committee has been compiled herewith as the Final Report. Direct contributing factors of the catastrophic nuclear incident at Fukushima Daiichi NPP initiated by an unprecedented massive earthquake/ tsunami – inadequacies in tsunami measures, severe accident management, emergency response, accident recovery and mitigations – and the underlying factors - organizational issues, etc., have been clarified and recommendations in the following areas have been made. - Nuclear safety fundamentals - Direct factors of the accident - Organizational aspects - Common items (R&D, International cooperation, human resources management) - Post-accident management/recovery from the accident.

Advances and Innovations in Nuclear Decommissioning is an essential resource for industry professionals and academics interested in acquiring the most up-to-date information on the current state of nuclear decommissioning. Written and edited by the world's leading experts, this book considers lessons learned and new innovations in the field. Edited by Dr. Laraia, it is the perfect companion to his 2012 book, Nuclear Decommissioning, which critically reviews the nuclear decommissioning processes and technologies applicable to nuclear power plants and other civilian nuclear facilities. Where the earlier book covers the basics of decommissioning, this new book brings you up-to-date with new areas of interest and approaches, innovative technologies, and lessons learned by both the nuclear and non-nuclear decommissioning sectors. Focuses on new aspects, trends and innovative technologies Includes content on decommissioning after a severe accident, including the use of robotics Brings together information from around the world and considers the lessons learned from the non-nuclear sector as well

Increasingly over the next few decades, the oil and gas industry faces the complex task of decommissioning its offshore platforms, pipelines and sub-sea equipment as they reach the end of their operational capabilities. Decommissioning involves and integrates many distinct aspects: engineering, environmental, economic, legal, political and safety considerations. A practical strategy for removing and disposing these structures needs to be developed which best meets the demands of all of these different aspects. Specialists in these various fields have been brought together for this volume to contribute their assessments of the situation. The result is an important step toward the development of a co-ordinated approach to the subject. It is essential reading for all those who are involved with major decommissioning projects, their possible environmental impact and their implications in politics and law.

Ocean affairs are deeply woven into the history of the nuclear age. Ranging from wastes to security, this study frames the complex relationships between the oceans and the nuclear age and illuminates patterns of impact and response in ocean law.

In the process of resolving disputes, it is not uncommon for parties to justify actions otherwise in breach of their obligations by invoking the need to protect some aspect of the elusive concept of public order. Until this thoroughly researched book, the criteria and factors against which international dispute bodies assess such claims have remained unclear. Now, by providing an in-depth comparative analysis of relevant jurisprudence under four distinct international dispute resolution systems – trade, investment, human rights and international commercial arbitration – the author of this invaluable book identifies common core benchmarks for the application of the public order exception. To achieve the broadest possible scope for her analysis, the author examines the public order exception's function, role and application within the following international dispute resolution systems: relevant World Trade Organization (WTO) agreements as enforced by the organization's Dispute Settlement Body and Appellate Body; international investment agreements as enforced by competent Arbitral Tribunals and Annulment Committees under the International Center for Settlement of Investment Disputes; provisions under the Inter-American Convention of Human Rights and the European Convention of Human Rights as enforced by the Inter-American Court of Human Rights and the European Court of Human Rights, respectively; and the New York Convention as enforced by national tribunals across the world. Controversies, tensions and pitfalls inherent in invoking the public order exception are elucidated, along with clear guidelines on how arguments

may be crafted in order to enhance prospects of success. Throughout, tables and graphs systematize key aspects of the relevant jurisprudence under each of the dispute resolution systems analysed. As an immediate practical resource for lawyers on any side of a dispute who wish to invoke or strengthen a public order exception claim, the book's systematic analysis will be welcomed by lawyers active in WTO disputes, international investment arbitration, human rights law or enforcement of foreign arbitral awards. Academics and policymakers will find a signal contribution to the ongoing debate on the existence, legal basis, content and functions of the transnational public order.

Nuclear Decommissioning Case Studies: Policies, Strategies, Planning and Knowledge Management focuses on policy, strategy, planning and knowledge management in nuclear decommissioning, offering readers guidance on events that occur in early stages of the lifecycle. The book helps readers plan in advance to avoid and reduce schedule delays and cost overruns to ensure a smooth, safe and successful decommissioning. Events covered in this book range from top-level conception, to strategy selection, the drafting of procedures, and the sharing of best practices. Alongside the other case study books in this series, readers will obtain an understanding of various key points and lessons learned. Decommissioning experts, including regulators, operators, waste managers, researchers and academics will find this book to be suitable supplementary material to Michele Laraia's reference works on the theory and applications of nuclear decommissioning. Presents a selection of global case studies that focus on the early stages of nuclear decommissioning Highlights the need to ensure sustainability plans are in place at the beginning of a nuclear project Informs decision-makers on selecting the best options Assists the reader in setting clear plans and strategies to avoid schedule delays and cost overruns

Until the late 1970s, most commercial power plant operators outside the United States adopted a spent fuel management policy of immediate reprocessing and recycling of recovered products. In response to rising reprocessing prices, decreasing values of re covered products, concerns over proliferation risks, and a belief in the favorable eco nomics of direct disposal, many utilities have since opted to store spent fuel on an in terim basis pending the availability of direct disposal facilities or a change in the eco nomic and/or political climate for reprocessing and recycling uranium and plutonium. Spent fuel has traditionally been stored in water-filled pools located in the reactor building or fuel handling buildings, on reactor sites, or as part of large centralized fa cilities (e.g. Sellafield, La Hague, CLAB). Because the economics of pool storage are dependent on the size of the facility, the construction of additional separate pools on reactor sites has only been pursued in a few countries, such as Finland and Bulgaria.

Analyzing the impact and benefits of nuclear energy on environment, this book examines nuclear treaties in relation to environmental protection, highlights legal framework on non-proliferation and denuclearization, explores treaties on nuclear safety and nuclear security, discusses legal regimes on management of nuclear wastes, assesses the third-party liability regime and discusses the role of IAEA, EURATOM and NEA in regulating nuclear energy. It explores nuclear energy in the context of climate change and sustainable development. This book also examines the international legal framework on notification, assistance and emergency preparedness in the event of nuclear accidents, considers legal aspects of decommissioning of nuclear power plants

and main legislative trends on nuclear energy use in selected countries. It also addresses regulatory responses to nuclear energy in the wake of the Fukushima power plant nuclear accident in Japan.

Most countries use or handle radioactive material in some manner, whether in nuclear power plants or nuclear fuel cycle facilities, medical research laboratories or manufacturing plants. This publication summarises the decommissioning activities undertaken around the world, as well as considering those that are currently under way and those that will need to be performed in the future. The aim of the book is to assess future levels of resources that will be needed to support decommissioning activities around the world and to identify issues that may need to be addressed. The book will be of interest to regulators, engineers and planners as a basis for developing a regulatory infrastructure and implementing a decommissioning programme. A CD-ROM is included containing details of the location, type and status of nuclear power plants, research reactors, fuel cycle facilities and particle accelerators along with relevant associated data.

Following the acquisition of the atomic bomb by five states, the United Nations began drafting several treaties to limit nuclear proliferation. These efforts failed, as four more states also acquired nuclear weapons. In a similar vein, an attempt to limit atomic weapons - primarily within the two superpowers - was initiated. While the number of weapons has decreased, the new bombs now being manufactured are more powerful and more precise, negating any reduction in numbers. In the field of civil nuclear use, all nuclear facilities (reactors, factories, etc.) have a limited lifespan. Once a plant is permanently shut down, these facilities must be decommissioned and dismantled. These operations are difficult, time-consuming and costly. In addition, decommissioning generates large volumes of radioactive waste of various categories, including long-lived and high-activity waste. Risks to the environment and to health are not negligible during decommissioning. The International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD) have produced numerous publications with recommendations. Each state has its own decommissioning strategy (immediate or delayed) and final plan for the site - whether it be returning it to greenfield status or obtaining a nuclear site license with centuries-long monitoring.

Significant amounts of liquid and solid radioactive waste have been generated in Russia during the production of nuclear weapons, and there is an urgent need to find suitable ways to manage these wastes in a way that protects both the current population and future generations. This book contains contributions from pure and applied scientists and other representatives from Europe, North America, and Russia, who are, or have been, actively involved in the field of radioactive waste management and disposal. First-hand experience of specific problems associated with defence-related wastes in the USA and the Russian Federation is presented, and current plans are described for the disposal of solid wastes arising from civilian nuclear power production programmes in other countries, including Belgium, Bulgaria, Canada, Germany and the UK. The book provides a good insight into ongoing research at local and national level within Russia, devoted to the safe disposal of defence-related radioactive waste. It also demonstrates how existing expertise and technology from civilian nuclear waste management programmes can be applied to solving the problems created by nuclear defence programmes. Contributions address methods of immobilisation, site selection methodology, site characterisation techniques and data interpretation, the key elements of safety/performance assessments of planned deep (geological) repositories for radioactive waste, and radionuclide transport modelling. Concerns associated with certain specific nuclear waste disposal concepts and repository sites are also presented.

With the end of the Cold War, Russia's submarines were no longer needed to deter or fight Western navies and were very expensive to

operate and maintain. Older submarines were taken out of service in large numbers, but without firm plans and infrastructure in place to remove and adequately care for their nuclear components, problems soon developed over the disposition of spent fuel assemblies. Problems arose also of course between Russia and the international community as to the best way to respond to the challenge. This book looks at those problems, first discussing Russia's economy, its environment, and the Russian Navy, and then covering in detail the spent fuel of Russian submarines and related nuclear problems. The engagement of the international community on the issue is then addressed. A theoretical analysis is offered on how Russia's fellow nations can help remedy a troubling environmental problem in a difficult country.

This book contains in-depth articles written by scholars, international lawyers, and practitioners from around the world. It deals with the environmental aspect of the hydrocarbon cycle in general and oil and gas exploration and production in particular. Its main thrust is management of environmental legal risks and issues in upstream operations.

How did the British Government and Civil Service shape the Northern Ireland peace process? What kind of tensions and debates were being played out between the two governments and the various parties in Northern Ireland? Addressing texts, negotiations, dialogues, space, leverage, strategy, ambiguity, interpersonal relations and convergence, this is the first volume to examine how senior British officials and civil servants worked to bring about power-sharing in Northern Ireland. With a unique format featuring self-authored inside accounts and interview testimonies, it considers a spectrum of areas and issues that came into play during the dialogues and negotiations that led to the 1998 Good Friday Agreement and political accommodation in Northern Ireland. This book provides a compelling insight into what actually happened inside the negotiating room and how the British tried to shape the course of negotiations.

Japan’s Quest for Nuclear Energy and the Price it has Paid: Accidents, Consequences, and Lessons Learned for the Global Nuclear Industry identifies major accidents in Japan that have happened at different stages of the nuclear fuel cycle in Japan, assesses the underlying causes of nuclear accidents, and identifies other systemic problems in the nuclear industry. It provides recommendations on how government, industry and academic institutions can work together toward achieving a zero-accident safety culture. Reviews the history of Japan’s nuclear programs and commercial activities from the 1950s to the present Describes the underlying causes of major accidents that have afflicted Japan’s nuclear industry, along with consequences, including technical difficulties, costs and program delays Outlines the evolution of nuclear policies promoted by competing bureaucracies and how these rivalries influenced program priorities and impeded safety

Written by the leading expert in the history of UK energy, this study provides new, in-depth analysis of the development of UK petroleum policies towards the North Sea oil and gas industry from the early 1960s to the early 1980s. Following on from volume I (The Growing Dominance of the State) to discuss the more recent history of the North Sea oil and gas industry, here Alex Kemp offers new insights into developments in the industry. The controversial decisions to raise gas prices to consumers and to introduce the Gas Levy are discussed, while the thinking behind the gradual reduction in taxation - including the abolition of SPD (Supplementary Petroleum Duty) and the removal of royalties on new

developments - is fully explained. The various options considered to reduce the powers of BNOC (British National Oil Corporation), then privatise its upstream assets, and finally to abolish the state company altogether are fully discussed, as is the thinking leading up to the privatisation of the British Gas Corporation in 1986. This volume also sheds light on the development of policies onshore, particularly the role of the OSO (Offshore Supplies Office), and the response of British industry to the North Sea opportunity. Finally, the evolution of policies relating to health, safety, decommissioning, and the environment over the whole period of the study are examined. The Official History of North Sea Oil and Gas will be of interest to students of North Sea oil and gas, energy economics, business history, and British politics, as well as to petroleum professionals and policymakers.

Decommissioned Russian Nuclear Submarines and International CooperationMcFarland

Beyond Decommissioning: The Reuse and Redevelopment of Nuclear Installations presents the most up-to-date research and guidance on the reuse and redevelopment of nuclear plants and sites. Consultant Michele Laraia extensively builds upon experience from the redevelopment of non-nuclear industrial sites, a technical field that has considerably predated nuclear applications, to help the reader gain a very thorough and practical understanding of the redevelopment opportunities for decommissioned nuclear sites. Laraia emphasizes the socioeconomic and financial benefits from very early planning for site reuse, including how to manage the decommissioning transition, anticipate financial issues, and effectively utilize available resources. With an increasing number of decommissioning projects being conducted worldwide, it is critical that knowledge gained by experts with hands-on experience is passed on to the younger generation of nuclear professionals. Besides, this book describes the experiences of non-nuclear organizations that have reutilized the human, financial, and physical site assets, with adaptations, for a new productive mission, making it a key reference for all parties associated with nuclear operation and decommissioning. Those responsible for nuclear operation and decommissioning are encouraged to incorporate site reuse within an integrated, beginning-to-end view of their projects. The book also appeals to nuclear regulators as it highlights more opportunities to complete nuclear decommissioning safely, speedily, and in the best interests of all concerned parties. Includes lessons learned from worldwide case studies of reuse and repurposing of nuclear plants from both the nuclear and non-nuclear industries Provides practical guidance on a broad-spectrum of factors and opportunities for nuclear decommissioning Identifies the roles and responsibilities of parties involved, including nuclear operators, regulators and authorities, land planners and environmentalists

Gender Equality in a Global Perspective looks to discuss whether Gender Equality can be adopted as it has been defined in international documents anywhere, or whether it needs to be adapted in a more local context; discuss which factors

and perspectives need to be taken into account when adapting Gender Equality to specific contexts; suggest research approaches for studies on whether a universal (Western) concept of Gender Equality fits in certain specific contexts; and finally suggests challenges to the existing interpretation of Gender Equality (e.g., theory of intersectionality); and the development of legal and policy framework. This book is situated within the tradition of comparative gender studies. While most other such books take up and compare various ways of implementing (or not implementing) gender equality, this book studies and compares whether or not (and to what extent) a specific definition of Gender Equality (GE) could be adopted by various nations. Thus, all chapter contributors will engage with the same definition of GE, which will be presented within the book, and discuss the possibilities and constrains related to applying such a definition in their particular national context. The readers will learn about the problems of applying a universal concept of Gender Equality and the possible reasons for and modes of adapting Gender Equality to different contexts. Gender Equality in a Global Perspective looks to maintain a critical and reflexive stance towards the issues raised and will seek to present multiple perspectives and open-ended answers. As such it hopes to contribute to the international discussion of human rights more broadly and Gender Equality specifically. The intended audience is not limited only to but will include policy makers, scholars and students with an interest in Gender issues, Organizational Theory, Political Science, Human Development, Policy Analysis, Globalization and other management sub-disciplines.