

Pdf free Solutions to nuclear power problems (Read Only)

following the increasing cost of fossil fuels and concerns about the security of their future supply however the term nuclear power causes anxiety in many people and there is confusion concerning the nature and extent of the associated risks the authors of this text aim to educate the reader on nuclear power and its future potential it focuses on nuclear accidents such as chernobyl and three mile island and their consequences with the understanding that there are safety lessons to be learned if nuclear power generation is going to be expanded to meet our growing energy needs since the dawn of nuclear energy to recent events in the nuclear industry if you have ever been curious about nuclear power then this is the book for you from the people who work in the nuclear industry to the nuclear groups that help guide the nuclear industry this book is dedicated to all those that have brought this industry to where it is today nuclear power is technology that can bring electricity to every household but we must first make sure everyone knows what the facts are read this book this second edition represents an extensive revision of the first edition though the motivation for the book and the intended audiences as described in the previous preface remain the same the overall length has been increased substantially with revised or expanded discussions of a number of topics including yucca mountain repository plans new reactor designs health effects of radiation costs of electricity and dangers from terrorism and weapons proliferation the overall status of nuclear power has changed rather little over the past eight years nuclear reactor construction remains at a very low ebb in much of the world with the exception of asia while nuclear power's share of the electricity supply continues to be about 75 in france and 20 in the united states however there are signs of a heightened interest in considering possible nuclear growth in the late 1990s the u s department of energy began new programs to stimulate research and planning for future reactors and many candidate designs are now contending at least on paper to be the next generation leaders outside the united states the commercial development of the pebble bed modular reactor is being pursued in south africa a french german consortium has won an order from finland for the long planned european pressurized water reactor and new reactors have been built or planned in asia in an unanticipated positive development for nuclear energy the capacity factor of u s reactors has increased dramatically in recent years and most operating reactors now appear headed for 20 year license renewals this book provides a concise but rigorous appraisal about the future of nuclear power and the presumed nuclear renaissance it does so by assessing the technical economic environmental political and social risks related to all aspects of the nuclear fuel cycle from uranium mills and mines to nuclear reactors and spent fuel storage facilities in each case the book argues that the costs of nuclear power significantly outweigh its benefits it concludes by calling for investments in renewable energy and energy efficiency as a better path towards an affordable secure and socially acceptable future the prospect of a global nuclear renaissance could change the way that energy is produced and used the world over so vacool takes a hard look at who would benefit mostly energy companies and manufacturers and who would suffer mostly taxpayers those living near nuclear facilities and electricity customers this book is a must read for anyone even remotely concerned about a sustainable energy future and also for those with a specific interest in modern nuclear power plants nuclear energy materials and reactors is a component of encyclopedia of energy sciences engineering and technology resources in the global encyclopedia of life support systems eolss which is an integrated compendium of twenty one encyclopedias nuclear energy is a type of technology involving the controlled use of nuclear fission to release energy for work including propulsion heat and the generation of electricity the theme on nuclear energy materials and reactors discusses fundamentals of nuclear energy nuclear physics nuclear interactions nuclear reactor theory nuclear reactor design nuclear reactor kinetics reactivity changes nuclear power plants pressurized water reactors boiling water reactors pressurized heavy water reactors heavy water light water reactors advanced gas cooled reactors light water graphite reactors high temperature gas cooled reactors pebble bed modular reactor radioactive wastes origins classification and management nuclear reactor overview and reactor cycles the nuclear reactor closed cycle safety of boiling water reactors supercritical water cooled nuclear reactors review and status the gas turbine modular helium reactor application of risk assessment to nuclear power plants production and recycling resources for nuclear fission these two volumes are aimed at the following five major target audiences university and college students educators professional practitioners research personnel and policy analysts managers and decision makers in nuclear energy what everyone need to know charles ferguson provides an authoritative but highly accessible guide to the controversial issue of nuclear power he contrasts

its potential for providing electrical power that is very low in greenhouse gas emissions with the threat that its fuel and waste pose an informed look at the myths and fears surrounding nuclear energy and a practical politically realistic solution to global warming and our energy needs faced by the world's oil shortages and curious about alternative energy sources gwyneth cravens skeptically sets out to find the truth about nuclear energy her conclusion it is a totally viable and practical solution to global warming in the end we see that if we are to care for subsequent generations embracing nuclear energy is an ethical imperative vital topics discussed include methods of power generation nuclear safeguards waste disposal the three mile island incident and opposition to nuclear power each topic is considered in relation to developing countries and communist states as well as the usa and western europe as the world's energy sources continue to develop with less reliance on traditional fossil fuels and more reliance on cleaner more efficient alternative energy sources nuclear power continues to be a dividing point for many people some believe it is the answer to our energy problems for the future while others warn of the risks written by a retired scientist who spent most of his career at the idaho national laboratory inl this book aims to delve into the issues surrounding nuclear power and dispel its myths while building an argument for why the united states should develop a nuclear power plan for the future as a whistleblower the author spent much of the last ten years of his career at the inl raising concerns about how its mission of serving as the department of energy's lead laboratory in radioactive waste management was not being properly managed while the united states continues to tread water on the issue of nuclear energy the author believes that a nuclear renaissance is not only possible but is necessary for meeting the world's growing demand for energy especially clean energy with fossil fuels slowly dying out and renewable energy sources not able to handle the demand for a continuously growing energy consuming public nuclear is an obvious solution this book is a must have for any engineer working in nuclear power students hoping to go into that industry and other engineers and scientists interested in the subject this book is both technical and political because they're equally important in determining what actually happens in institutions dealing with technical problems readers will delight in learning more about nuclear energy when they read about nuclear power plants nuclear fusion and nuclear fission they will learn what nuclear energy is exactly how safe it is and how it is used to make electricity to power our world a timeline covers the events in history related to nuclear energy and color photos complement the easy to read text the a to z reference resource for nuclear energy information a significant milestone in the history of nuclear technology nuclear energy encyclopedia science technology and applications is a comprehensive and authoritative reference guide written by a committee of the world's leading energy experts the encyclopedia is packed with cutting edge information about where nuclear energy science and technology came from where they are today and what the future may hold for this vital technology filled with figures graphs diagrams formulas and photographs which accompany the short easily digestible entries the book is an accessible reference work for anyone with an interest in nuclear energy and includes coverage of safety and environmental issues that are particularly topical in light of the fukushima daiichi incident a definitive work on all aspects of the world's energy supply the nuclear energy encyclopedia brings together decades of knowledge about energy sources and technologies ranging from coal and oil to biofuels and wind and ultimately nuclear power in megawatts and megatons world renowned physicists richard l garwin and georges charpak offer an accessible eminently well informed primer on two of the most important issues of our time nuclear weapons and nuclear power they begin by explaining clearly and concisely how nuclear fission and fusion work in both warheads and reactors and how they can impact human health making a strong and eloquent argument in favor of arms control garwin and charpak outline specific strategies for achieving this goal worldwide but they also demonstrate how nuclear power can provide an assured economically feasible and environmentally responsible source of energy in a way that avoids the hazards of weapons proliferation numerous figures enliven the text including cartoons by sempé this open access book discusses the eroding economics of nuclear power for electricity generation as well as technical legal and political acceptance issues the use of nuclear power for electricity generation is still a heavily disputed issue aside from technical risks safety issues and the unsolved problem of nuclear waste disposal the economic performance is currently a major barrier in recent years the costs have skyrocketed especially in the european countries and north america at the same time the costs of alternatives such as photovoltaics and wind power have significantly decreased contents history and current status of the world nuclear industry the dramatic decrease of the economics of nuclear power nuclear policy in the eu the legacy of csernoby1 and fukushima nuclear waste and decommissioning of nuclear power plants alternatives heading towards sustainable electricity systems target groups researchers and students in the fields of political economic and technical sciences energy policy experts nuclear energy experts and practitioners economists engineers consultants civil society

organizations the editors prof dr reinhard haas is university professor of energy economics at the institute of energy systems and electric drives at technische universität wien austria pd dr lutz mez is associate professor at the department for political and social sciences of freie universität berlin germany pd dr amela ajanovic is a senior researcher and lecturer at the institute of energy systems and electrical drives at technische universität wien austria in a world torn apart by wars over oil politicians have increasingly begun to look for alternative energy sources and their leading choice is nuclear energy the myths that have been spread about nuclear powered electricity are that it does not cause global warming or pollution it is inexpensive and it is safe in this revealing examination of the costs and consequences of nuclear energy world renowned antinuclear spokesperson helen caldicott uncovers the facts that belie the nuclear industry propaganda nuclear power contributes to global warming the true cost of nuclear power is prohibitive with taxpayers picking up most of the tab there s simply not enough uranium in the world to sustain nuclear power over the long term and the potential for a catastrophic accident or a terrorist attack far outweighs any benefits trained as a physician and thoroughly versed in the science of nuclear energy the bestselling author of nuclear madness and missile envy here turns her attention from nuclear bombs to nuclear lightbulbs as she makes meticulously clear in this essential book the world cannot withstand either this book explores how japanese views of nuclear power were influenced not only by hiroshima and nagasaki but by government business and media efforts to actively promote how it was a safe and integral part of japan s future the idea of atoms for peace and the importance of us japan relations were emphasized in exhibitions and in films despite the emergence of an anti nuclear movement the dream of civilian nuclear power and the good atom nevertheless prevailed and became more accepted by the late 1950s a school trip to see a reactor was becoming a reality for young japanese and major events such as the 1964 tokyo olympics and 1970 osaka expo seemed to reinforce the narrative that the japanese people were destined for a future led by science and technology that was powered by the atom a dream that was left in disarray after the fukushima nuclear disaster in 2011 in an era defined by anxiety over global warming and the search for alternative fuel sources nuclear power is rarely part of the conversation it promises limitless power and a drastic reduction in greenhouse gas emissions worldwide yet it is by no means perfectly safe or clean as three mile island chernobyl and fukushima remind us even so thirty countries are operating 444 reactors accounting for almost 11 percent of the world s electricity production the debate over nuclear energy is a fierce and emotional one and arguments agendas assumptions and factual information must be scrutinized meticulously and carefully this volume allows readers to do just that as they begin to form their own opinions on the viability of nuclear power nuclear power takes a closer look at the science behind nuclear energy find out how nuclear power is made learn about the different arguments for and against nuclear power contents notes what is nuclear power all about uranium nuclear energy originally published in 1961 this book gives the layman a better understanding of the nature of nuclear power and explains some of the major problems which have to be overcome in making practical use of it it is concerned mainly with the different kinds of nuclear reactors their underlying principles are explained and illustrated by reference to particular plants or design studies interested readers will find that the discussion of principles is full enough and the range covered wide enough to provide a broad view of the subject and a useful introduction to some more technical literature originally published in 1980 a clear understanding of how radioactivity moves through the environment is essential to discussions on nuclear power this book describes in didactic rather than polemic style the nature of radioactivity how it arises in the day to day running of nuclear reactors how and why a small fraction is introduced into the environment in a controlled manner and on what basis judgements on these processes should be made the authors argue for the continued development of nuclear energy discusses the issues surrounding nuclear power including an overview of the energy crisis the environmental consequences and the future of nuclear power this conference proceedings explores issues surrounding the replacement of existing nuclear power plants when they reach the end of their useful life topics covered include nuclear competitiveness regarding politics and power plant evolution social acceptance regarding communication information waste and safety proliferation and durability regarding resources and effects on the environment the use of nuclear reactions that generate heat by releasing nuclear energy is known as nuclear power this heat is often used in steam turbines to produce electricity in a nuclear power plant nuclear power can be obtained from nuclear fission nuclear fusion and nuclear decay reactions the nuclear fission of uranium and plutonium is responsible for producing the majority of electricity from nuclear power the processes of nuclear decay are used in various applications such as radioisotope thermoelectric generators medical imaging devices etc nuclear power is considered to be one of the cleanest sources of energy in the world and has the lowest level of fatalities per unit of energy generated compared to other energy sources this book elucidates the concepts and innovative

models around prospective developments with respect to nuclear power some of the diverse topics covered herein address the varied types of nuclear plants that fall under this category the extensive content of this book provides the readers with a thorough understanding of the subject presents an introduction to nuclear power discussing how it works the source of its energy and the future of nuclear power in the united states a guide to understanding issues related to nuclear power as energy source arcane discussions on nuclear power have been confounding people for a long time the upside down book of nuclear power is an attempt to demystify this critical area of public choice for the general reader while it does not forego the seriousness associated with the topic the book provides for an easy read that informs the reader of a variety of issues associated with the subject divided into short chapters aspects such as technology resource availability economics geopolitics and policies associated with nuclear power are dealt with in detail but in a way that emphasizes readability contentious areas such as safety waste management and the latest trends associated with them are laid bare for the reader the book also dwells in depth on the shrill and seldom above board debate on nuclear power and renewables an invaluable companion for all those looking to understand the nature of the nuclear industry in the new millennium and the implications of international treaties such as the indo us nuclear deal this book is a unique introduction to the economic costs of nuclear power it examines the future of the nuclear power industry and unpacks the complicated relationships between its technical economic and political variables it does so by modelling the costs risks and uncertainties of one of the world s most opaque industries using micro econometrics econometrics and cost engineering economics of nuclear power examines the very important costs of externalities storing of nuclear waste and the impact of a chernobyl or fukushima event and compares those to the externalities of alternative carbon based energies oil coal natural gas with over 100 tables and figures this book details nuclear power production around the world present and planned providing a completely global focus it also includes an overview of the past 70 years of international nuclear power developments this book is essential reading for students scholars and professionals interested in energy economics nuclear engineering and energy policy a multi country study assessing the potential role of nuclear power everything you thought you knew about nuclear power is wrong this is just as well because nuclear energy is essential to avoid catastrophic global warming while renewables will surely play an important part in our future energy strategy expecting them to deliver all the world s power is dangerously delusional in 2014 statistics showed that wind and solar power contributed only 1 per cent of global primary energy similarly while energy saving has a key role to play in the developed world there is no possibility of humanity as a whole using less energy while the developing world is extracting itself from poverty and the fact is that the anti nuclear movement of the 1970s and 80s has made the world more dependent on fossil fuels in nuclear 2 0 environmental campaigner mark lynas debunks the myths that have cast nuclear energy in a bad light often overlooked because of concerns surrounding nuclear waste and radiation poisoning after the chernobyl disaster atomic energy is one of the most impressive sources of low carbon power in this enlightening read mark looks at the science and re evaluates the situation to unravel why our future is threatened not just by the big fossil fuel companies but also the professional anti nuclear green groups this book is a call for all those who want to see a low carbon future to join forces and advocate a huge apollo program scale investment in wind solar and nuclear power nuclear power was considered vital to humanity s future until just a short time ago since the late seventies economic viability has joined a list of such issues as waste disposal and radiation hazards which call into question the future of nuclear power this document discusses in separate sections 1 the selling of nuclear power including worldwide nuclear power commitments 2 costs including annual rate increases for nuclear construction 3 explanations for the rising cost of nuclear power examining such issues as mismanagement nuclear power plant sizes design flaws in early plants that required costly correction and earthquake resistance 4 decline of nuclear power programs in the united states 5 international outlook on nuclear power development and 6 other issues and problems it is pointed out in the last section that the economic failings of nuclear power suggest the need for several major policy changes including a more balanced approach in energy research and development which nuclear power has dominated in most industrial countries since the fifties

Nuclear Power: A Very Short Introduction

2011-05-26

following the increasing cost of fossil fuels and concerns about the security of their future supply however the term nuclear power causes anxiety in many people and there is confusion concerning the nature and extent of the associated risks

Introduction to Nuclear Power

2018-10-08

the authors of this text aim to educate the reader on nuclear power and its future potential it focuses on nuclear accidents such as chernobyl and three mile island and their consequences with the understanding that there are safety lessons to be learned if nuclear power generation is going to be expanded to meet our growing energy needs

No Nukes

1979

since the dawn of nuclear energy to recent events in the nuclear industry if you have ever been curious about nuclear power then this is the book for you from the people who work in the nuclear industry to the nuclear groups that help guide the nuclear industry this book is dedicated to all those that have brought this industry to where it is today nuclear power is technology that can bring electricity to every household but we must first make sure everyone knows what the facts are read this book

The Fundamentals of Nuclear Power Generation

2011-07-28

this second edition represents an extensive revision of the first edition though the motivation for the book and the intended audiences as described in the previous preface remain the same the overall length has been increased substantially with revised or expanded discussions of a number of topics including yucca mountain repository plans new reactor designs health effects of radiation costs of electricity and dangers from terrorism and weapons proliferation the overall status of nuclear power has changed rather little over the past eight years nuclear reactor construction remains at a very low ebb in much of the world with the exception of asia while nuclear power's share of the electricity supply continues to be about 75 in france and 20 in the united states however there are signs of a heightened interest in considering possible nuclear growth in the late 1990s the u s department of energy began new programs to stimulate research and planning for future reactors and many candidate designs are now contending at least on paper to be the next generation leaders outside the united states the commercial development of the pebble bed modular reactor is being pursued in south africa a french german consortium has won an order from finland for the long planned european pressurized water reactor and new reactors have been built or planned in asia in an unanticipated positive development for nuclear energy the capacity factor of u s reactors has increased dramatically in recent years and most operating reactors now appear headed for 20 year license renewals

Nuclear Energy

2007-06-25

this book provides a concise but rigorous appraisal about the future of nuclear power and the presumed nuclear renaissance it does so by assessing the technical economic environmental political and social risks related to all aspects of the nuclear fuel cycle from uranium mills and mines to nuclear reactors and spent fuel storage facilities in each case the book argues that the costs of nuclear power significantly outweigh its benefits it concludes by calling for investments in renewable energy and energy efficiency as a better path towards an affordable secure and socially acceptable future the prospect of a global nuclear renaissance could change the way that energy is produced and used the world over sova cool takes a hard look at who would benefit mostly energy companies and manufacturers and who would suffer mostly taxpayers those living near nuclear facilities and electricity customers this book is a must read for anyone even remotely concerned about a sustainable energy future and also for those with a

specific interest in modern nuclear power plants

Contesting The Future Of Nuclear Power: A Critical Global Assessment Of Atomic Energy

2011-05-05

nuclear energy materials and reactors is a component of encyclopedia of energy sciences engineering and technology resources in the global encyclopedia of life support systems eolss which is an integrated compendium of twenty one encyclopedias nuclear energy is a type of technology involving the controlled use of nuclear fission to release energy for work including propulsion heat and the generation of electricity the theme on nuclear energy materials and reactors discusses fundamentals of nuclear energy nuclear physics nuclear interactions nuclear reactor theory nuclear reactor design nuclear reactor kinetics reactivity changes nuclear power plants pressurized water reactors boiling water reactors pressurized heavy water reactors heavy water light water reactors advanced gas cooled reactors light water graphite reactors high temperature gas cooled reactors pebble bed modular reactor radioactive wastes origins classification and management nuclear reactor overview and reactor cycles the nuclear reactor closed cycle safety of boiling water reactors supercritical water cooled nuclear reactors review and status the gas turbine modular helium reactor application of risk assessment to nuclear power plants production and recycling resources for nuclear fission these two volumes are aimed at the following five major target audiences university and college students educators professional practitioners research personnel and policy analysts managers and decision makers

Nuclear Energy Materials And Reactors - Volume II

2010-09-22

in nuclear energy what everyone need to know charles ferguson provides an authoritative but highly accessible guide to the controversial issue of nuclear power he contrasts its potential for providing electrical power that is very low in greenhouse gas emissions with the threat that its fuel and waste pose

Nuclear Energy

2011-05-17

an informed look at the myths and fears surrounding nuclear energy and a practical politically realistic solution to global warming and our energy needs faced by the world s oil shortages and curious about alternative energy sources gwyneth cravens skeptically sets out to find the truth about nuclear energy her conclusion it is a totally viable and practical solution to global warming in the end we see that if we are to care for subsequent generations embracing nuclear energy is an ethical imperative

Power to Save the World

2010-12-01

vital topics discussed include methods of power generation nuclear safeguards waste disposal the three mile island incident and opposition to nuclear power each topic is considered in relation to developing countries and communist states as well as the usa and western europe

The Necessity for Nuclear Power

1980-01-31

as the world s energy sources continue to develop with less reliance on traditional fossil fuels and more reliance on cleaner more efficient alternative energy sources nuclear power continues to be a dividing point for many people some believe it is the answer to our energy problems for the future while others warn of the risks written by a retired scientist who spent most of his career at the idaho national laboratory inl this book aims to delve into the issues surrounding nuclear power and dispel its myths while building an argument for why the united states should develop a nuclear power plan for the future as a whistleblower the author spent much of the last ten years of

his career at the inl raising concerns about how its mission of serving as the department of energy s lead laboratory in radioactive waste management was not being properly managed while the united states continues to tread water on the issue of nuclear energy the author believes that a nuclear renaissance is not only possible but is necessary for meeting the world s growing demand for energy especially clean energy with fossil fuels slowly dying out and renewable energy sources not able to handle the demand for a continuously growing energy consuming public nuclear is an obvious solution this book is a must have for any engineer working in nuclear power students hoping to go into that industry and other engineers and scientists interested in the subject this book is both technical and political because they re equally important in determining what actually happens in institutions dealing with technical problems

Nuclear Power

2019-09-23

readers will delight in learning more about nuclear energy when they read about nuclear power plants nuclear fusion and nuclear fission they will learn what nuclear energy is exactly how safe it is and how it is used to make electricity to power our world a timeline covers the events in history related to nuclear energy and color photos complement the easy to read text

Nuclear Energy

2016-12-15

the a to z reference resource for nuclear energy information a significant milestone in the history of nuclear technology nuclear energy encyclopedia science technology and applications is a comprehensive and authoritative reference guide written by a committee of the world s leading energy experts the encyclopedia is packed with cutting edge information about where nuclear energy science and technology came from where they are today and what the future may hold for this vital technology filled with figures graphs diagrams formulas and photographs which accompany the short easily digestible entries the book is an accessible reference work for anyone with an interest in nuclear energy and includes coverage of safety and environmental issues that are particularly topical in light of the fukushima daiichi incident a definitive work on all aspects of the world s energy supply the nuclear energy encyclopedia brings together decades of knowledge about energy sources and technologies ranging from coal and oil to biofuels and wind and ultimately nuclear power

Nuclear Energy Encyclopedia

2011-08-10

in megawatts and megatons world renowned physicists richard l garwin and georges charpak offer an accessible eminently well informed primer on two of the most important issues of our time nuclear weapons and nuclear power they begin by explaining clearly and concisely how nuclear fission and fusion work in both warheads and reactors and how they can impact human health making a strong and eloquent argument in favor of arms control garwin and charpak outline specific strategies for achieving this goal worldwide but they also demonstrate how nuclear power can provide an assured economically feasible and environmentally responsible source of energy in a way that avoids the hazards of weapons proliferation numerous figures enliven the text including cartoons by sempé

Nuclear Power in an Age of Uncertainty

1984

this open access book discusses the eroding economics of nuclear power for electricity generation as well as technical legal and political acceptance issues the use of nuclear power for electricity generation is still a heavily disputed issue aside from technical risks safety issues and the unsolved problem of nuclear waste disposal the economic performance is currently a major barrier in recent years the costs have skyrocketed especially in the european countries and north america at the same time the costs of alternatives such as photovoltaics and wind power have significantly decreased contents history and current status of the world nuclear industry the dramatic decrease of the economics of nuclear power nuclear policy in the eu the legacy of csernobył and

fukushima nuclear waste and decommissioning of nuclear power plants alternatives heading towards sustainable electricity systems target groups researchers and students in the fields of political economic and technical sciences energy policy experts nuclear energy experts and practitioners economists engineers consultants civil society organizations the editors prof dr reinhard haas is university professor of energy economics at the institute of energy systems and electric drives at technische universität wien austria pd dr lutz mez is associate professor at the department for political and social sciences of freie universität berlin germany pd dr amela ajanovic is a senior researcher and lecturer at the institute of energy systems and electrical drives at technische universität wien austria

Megawatts and Megatons

2002-12-15

in a world torn apart by wars over oil politicians have increasingly begun to look for alternative energy sources and their leading choice is nuclear energy the myths that have been spread about nuclear powered electricity are that it does not cause global warming or pollution it is inexpensive and it is safe in this revealing examination of the costs and consequences of nuclear energy world renowned antinuclear spokesperson helen caldicott uncovers the facts that belie the nuclear industry propaganda nuclear power contributes to global warming the true cost of nuclear power is prohibitive with taxpayers picking up most of the tab there s simply not enough uranium in the world to sustain nuclear power over the long term and the potential for a catastrophic accident or a terrorist attack far outweighs any benefits trained as a physician and thoroughly versed in the science of nuclear energy the bestselling author of nuclear madness and missile envy here turns her attention from nuclear bombs to nuclear lightbulbs as she makes meticulously clear in this essential book the world cannot withstand either

Poisoned Power

1979

this book explores how japanese views of nuclear power were influenced not only by hiroshima and nagasaki but by government business and media efforts to actively promote how it was a safe and integral part of japan s future the idea of atoms for peace and the importance of us japan relations were emphasized in exhibitions and in films despite the emergence of an anti nuclear movement the dream of civilian nuclear power and the good atom nevertheless prevailed and became more accepted by the late 1950s a school trip to see a reactor was becoming a reality for young japanese and major events such as the 1964 tokyo olympics and 1970 osaka expo seemed to reinforce the narrative that the japanese people were destined for a future led by science and technology that was powered by the atom a dream that was left in disarray after the fukushima nuclear disaster in 2011

The Technological and Economic Future of Nuclear Power

2019-01-01

in an era defined by anxiety over global warming and the search for alternative fuel sources nuclear power is rarely part of the conversation it promises limitless power and a drastic reduction in greenhouse gas emissions worldwide yet it is by no means perfectly safe or clean as three mile island chernobyl and fukushima remind us even so thirty countries are operating 444 reactors accounting for almost 11 percent of the world s electricity production the debate over nuclear energy is a fierce and emotional one and arguments agendas assumptions and factual information must be scrutinized meticulously and carefully this volume allows readers to do just that as they begin to form their own opinions on the viability of nuclear power

The Prospects of Nuclear Power and Technology

1957

nuclear power takes a closer look at the science behind nuclear energy find out how nuclear power is made learn about the different arguments for and against nuclear power contents notes what is nuclear power all about uranium nuclear energy

Nuclear Power Is Not The Answer To Global Warming Or Anything Else

2006-07-01

originally published in 1961 this book gives the layman a better understanding of the nature of nuclear power and explains some of the major problems which have to be overcome in making practical use of it it is concerned mainly with the different kinds of nuclear reactors their underlying principles are explained and illustrated by reference to particular plants or design studies interested readers will find that the discussion of principles is full enough and the range covered wide enough to provide a broad view of the subject and a useful introduction to some more technical literature

Visualizing Nuclear Power in Japan

2020-05-28

originally published in 1980 a clear understanding of how radioactivity moves through the environment is essential to discussions on nuclear power this book describes in didactic rather than polemic style the nature of radioactivity how it arises in the day to day running of nuclear reactors how and why a small fraction is introduced into the environment in a controlled manner and on what basis judgements on these processes should be made

Revisiting Nuclear Power

2017-07-15

the authors argue for the continued development of nuclear energy

Nuclear Power

1984-01-01

discusses the issues surrounding nuclear power including an overview of the energy crisis the environmental consequences and the future of nuclear power

Nuclear Power Plants as Weapons for the Enemy

2019-07-09

this conference proceedings explores issues surrounding the replacement of existing nuclear power plants when they reach the end of their useful life topics covered include nuclear competitiveness regarding politics and power plant evolution social acceptance regarding communication information waste and safety proliferation and durability regarding resources and effects on the environment

Nuclear Power

2019-03-27

the use of nuclear reactions that generate heat by releasing nuclear energy is known as nuclear power this heat is often used in steam turbines to produce electricity in a nuclear power plant nuclear power can be obtained from nuclear fission nuclear fusion and nuclear decay reactions the nuclear fission of uranium and plutonium is responsible for producing the majority of electricity from nuclear power the processes of nuclear decay are used in various applications such as radioisotope thermoelectric generators medical imaging devices etc nuclear power is considered to be one of the cleanest sources of energy in the world and has the lowest level of fatalities per unit of energy generated compared to other energy sources this book elucidates the concepts and innovative models around prospective developments with respect to nuclear power some of the diverse topics covered herein address the varied types of nuclear plants that fall under this category the extensive content of this book provides the readers with a thorough understanding of the subject

Nuclear Power, Man and the Environment

1979

presents an introduction to nuclear power discussing how it works the source of its energy and the future of nuclear power in the united states

Nuclear Power

2007-12-15

a guide to understanding issues related to nuclear power as energy source arcane discussions on nuclear power have been confounding people for a long time the upside down book of nuclear power is an attempt to demystify this critical area of public choice for the general reader while it does not forego the seriousness associated with the topic the book provides for an easy read that informs the reader of a variety of issues associated with the subject divided into short chapters aspects such as technology resource availability economics geopolitics and policies associated with nuclear power are dealt with in detail but in a way that emphasizes readability contentious areas such as safety waste management and the latest trends associated with them are laid bare for the reader the book also dwells in depth on the shrill and seldom above board debate on nuclear power and renewables an invaluable companion for all those looking to understand the nature of the nuclear industry in the new millennium and the implications of international treaties such as the indo us nuclear deal

The Pros and Cons of Nuclear Power

2012-12-06

this book is a unique introduction to the economic costs of nuclear power it examines the future of the nuclear power industry and unpacks the complicated relationships between its technical economic and political variables it does so by modelling the costs risks and uncertainties of one of the world s most opaque industries using micro econometrics econometrics and cost engineering economics of nuclear power examines the very important costs of externalities storing of nuclear waste and the impact of a chernobyl or fukushima event and compares those to the externalities of alternative carbon based energies oil coal natural gas with over 100 tables and figures this book details nuclear power production around the world present and planned providing a completely global focus it also includes an overview of the past 70 years of international nuclear power developments this book is essential reading for students scholars and professionals interested in energy economics nuclear engineering and energy policy

Preparing the Ground for Renewal of Nuclear Power

2021-11-16

a multi country study assessing the potential role of nuclear power

Nuclear Power

2014-01-15

everything you thought you knew about nuclear power is wrong this is just as well because nuclear energy is essential to avoid catastrophic global warming while renewables will surely play an important part in our future energy strategy expecting them to deliver all the world s power is dangerously delusional in 2014 statistics showed that wind and solar power contributed only 1 per cent of global primary energy similarly while energy saving has a key role to play in the developed world there is no possibility of humanity as a whole using less energy while the developing world is extracting itself from poverty and the fact is that the anti nuclear movement of the 1970s and 80s has made the world more dependent on fossil fuels in nuclear 2 0 environmental campaigner mark lynas debunks the myths that have cast nuclear energy in a bad light often overlooked because of concerns surrounding nuclear waste and radiation poisoning after the chernobyl disaster atomic energy is one of the most impressive sources of low carbon power in this enlightening read mark looks at the science and re evaluates the situation to unravel why our future is threatened not just

by the big fossil fuel companies but also the professional anti nuclear green groups this book is a call for all those who want to see a low carbon future to join forces and advocate a huge apollo program scale investment in wind solar and nuclear power

The Challenges to Nuclear Power in the Twenty-First Century

1980

nuclear power was considered vital to humanity s future until just a short time ago since the late seventies economic viability has joined a list of such issues as waste disposal and radiation hazards which call into question the future of nuclear power this document discusses in separate sections 1 the selling of nuclear power including worldwide nuclear power commitments 2 costs including annual rate increases for nuclear construction 3 explanations for the rising cost of nuclear power examining such issues as mismanagement nuclear power plant sizes design flaws in early plants that required costly correction and earthquake resistance 4 decline of nuclear power programs in the united states 5 international outlook on nuclear power development and 6 other issues and problems it is pointed out in the last section that the economic failings of nuclear power suggest the need for several major policy changes including a more balanced approach in energy research and development which nuclear power has dominated in most industrial countries since the fifties

Nuclear Proliferation and Civilian Nuclear Power: International perspectives

2008-07-01

Nuclear Power

1987-01-01

Introduction to Nuclear Power

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