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ERDA Energy Research Abstracts
 Nuclear Systems
 International Directory of Nuclear Criticality Safety Personnel
 Nuclear News
 Proposed Interim Storage of Enriched Uranium Above the Maximum Historical Storage Level at the Y-12 Plant, Oak Ridge B1; Response to Public Comments on the Feb. 1994 Predecisional Draft
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 New Tritium Production Reactor Capacity Facilities, Siting, Construction and Operation
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 Over 200 U.S. Department of Energy Manuals Combined: CLASSICAL PHYSICS; ELECTRICAL SCIENCE; THERMODYNAMICS, HEAT TRANSFER AND FLUID FUNDAMENTALS; INSTRUMENTATION AND CONTROL; MATHEMATICS; CHEMISTRY; ENGINEERING SYMBIOLOGY; MATERIAL SCIENCE; MECHANICAL SCIENCE; AND NUCLEAR PHYSICS AND REACTOR THEORY
 Applied Energy
 Medical Consequences of Radiological and Nuclear Weapons
 ERDA Energy Research Abstracts
 The Chemistry of the Actinide and Transactinide Elements (3rd ed., Volumes 1-5)
 Glossary of Terms in Nuclear Science and Technology
 Nuclear Criticality Safety
 Health Physics
 The Chemistry of the Actinide and Transactinide Elements (Set Vol.1-6)
 Taming The Rays
 Affordable Cleanup?
 Evaluation of the U.S. Department of Energy's Alternatives for the Removal and Disposition of Molten Salt Reactor Experiment Fluoride Salts
 Inventory of advanced energy technologies and energy conservation research and development, 1976-1978
 Transactions of the American Nuclear Society
 Government Reports Announcements & Index
 Nuclear Engineering
 INIS Atomindex
 Information Sources in Energy Technology
 Contemporary Health Physics
 Basic Health Physics
 Nuclear Energy
 Energy Research Abstracts
 Engineering Thermofluids
 Nuclear Energy
 Weekly Information Report
 Criticality Safety Considerations in the Storage of Nuclear Material Throughout the Fuel Cycle, September 9-12, 1985, Jackson, Wyoming
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ERDA Energy Research Abstracts Butterworth-Heinemann
 Written in clear, concise language and designed for an introductory applied energy course, *Applied Energy: An Introduction* discusses energy applications in small-medium enterprises, solar energy, hydro and wind energy, nuclear energy, hybrid energy, and energy sustainability issues. Focusing on renewable energy technologies, energy conversion, and conservation and the energy industry, the author lists the key aspects of applied energy and related studies, taking a question-based approach to the material that is useful for both undergraduate students and postgraduates who want a broad overview of energy conversion. The author carefully designed the text to motivate students and give them the foundation they need to place the concepts presented into a real-world context. He begins with an introduction to the basics and the definitions used throughout the book. From there, he covers the energy industry and energy applications; energy sources, supply, and demand; and energy management, policy, plans, and analysis. Building on this, the author elucidates various energy saving technologies and energy storage methods, explores the pros and cons of fossil fuels and alternative energy sources, and examines the various types of applications of alternative energies. The book concludes with chapters on hybrid energy technology, hybrid energy schemes, other energy conversion methods, and applied energy issues. The book takes advantage of practical and application-based learning, presenting the information in various forms such as essential notes followed by practical projects, assignments, and objective and practical questions. In each chapter, a small section introduces some elements of applied energy design and innovation, linking knowledge with applied energy design and practice. The comprehensive coverage gives students the skills not only to master the concepts in the course, but also apply them to future work in this area.

Nuclear Systems Springer Science & Business Media
 Information Sources in Energy Technology presents the major sources in the field of energy technology. The book is comprised of 16 chapters that are organized into three parts. The first part covers energy in general and discusses both local and international agencies that deal with energy technology along with its primary and secondary sources. The next part deals with fuel technology; this part details combustion, steam and boiler plant, electrical energy, and energy conservation. The last part talks about specific energy sources, including nuclear, solar, and

geothermal. The text will be of great use to individuals involved in energy industry. Scientists and engineers involved in energy projects will also benefit from the book.

International Directory of Nuclear Criticality Safety Personnel

CRC Press
 Dr. Samuel Glasstone, the senior author of the previous editions of this book, was anxious to live until his ninetieth birthday, but passed away in 1986, a few months short of this milestone. I am grateful for the many years of stimulation received during our association, and in preparing this edition have attempted to maintain his approach. Previous editions of this book were intended to serve as a text for students and a reference for practicing engineers. Emphasis was given to the broad perspective, particularly for topics important to reactor design and operation, with basic coverage provided in such supporting areas as neutronics, thermal-hydraulics, and materials. This, the Fourth Edition, was prepared with these same general objectives in mind. However, during the past three decades, the nuclear industry and university educational programs have matured considerably, presenting some challenges in meeting the objectives of this book. Nuclear power reactors have become much more complex, with an accompanying growth in supporting technology. University programs now offer separate courses covering such basic topics as reactor physics, thermal hydraulics, and materials. Finally, the general availability of inexpensive xv
 Preface powerful micro-and minicomputers has transformed design and analysis procedures so that sophisticated methods are now commonly used instead of earlier, more approximate approaches.

Nuclear News Elsevier

Energy -- Atoms and nuclei -- Radioactivity -- Nuclear processes -- Radiation and materials -- Fission -- Fusion -- Particle accelerators -- Isotope separators -- Radiation detectors -- Neutron chain reactions -- Nuclear heat energy -- Breeder reactors -- Fusion reactors -- The history of nuclear energy -- Biological effects of radiation -- Information from isotopes -- Useful radiation effects -- Reactor safety -- Nuclear propulsion -- Radiation protection -- Radioactive waste disposal -- Laws, regulations, and organizations -- Energy economics -- International nuclear power -- Nuclear explosions -- The future.

Proposed Interim Storage of Enriched Uranium Above the Maximum Historical Storage Level at the Y-12 Plant, Oak Ridge B1; Response to Public Comments on the Feb. 1994 Predecisional Draft John Wiley & Sons

Building upon the success of the first edition, the *Nuclear Engineering Handbook, Second Edition*, provides a comprehensive, up-to-date overview of nuclear power

engineering. Consisting of chapters written by leading experts, this volume spans a wide range of topics in the areas of nuclear power reactor design and operation, nuclear fuel cycles, and radiation detection. Plant safety issues are addressed, and the economics of nuclear power generation in the 21st century are presented. The Second Edition also includes full coverage of Generation IV reactor designs, and new information on MRS technologies, small modular reactors, and fast reactors.

Nuclear Engineering Handbook Lulu.com

This is the first text specifically designed to train potential health physicists to think and respond like professionals. Written by a former chairman of the American Board of Health Physics Comprehensive Panel of Examiners with more than 20 years of professional and academic experience in the field, it offers a balanced presentation of all the theoretical and practical issues essential for a full working knowledge of radiation exposure assessments. As the only book to cover the entire radiation protection field, it includes detailed coverage of the medical, university, reactor, fuel cycle, environmental and accelerator areas, while exploring key topics in radiation basics, external and internal dosimetry, the biological effects of ionizing radiation, and much more besides. Backed by more than 500 worked examples developed within the context of various scenarios and spanning the full spectrum of real-world challenges, it quickly instills in readers the professional acumen and practical skills they need to perform accurate radiation assessments in virtually any routine or emergency situation. The result is a valuable resource for upper-level students and anyone preparing to take the American Board of Health Physics Comprehensive Examination, as well as for professionals seeking to expand their scope and sharpen their skills.

ERDA Energy Research Abstracts Jeffrey Frank Jones

Thermofluids, while a relatively modern term, is applied to the well-established field of thermal sciences, which is comprised of various intertwined disciplines. Thus mass, momentum, and heat transfer constitute the fundamentals of thermofluids. This book discusses thermofluids in the context of thermodynamics, single- and two-phase flow, as well as heat transfer associated with single- and two-phase flows. Traditionally, the field of thermal sciences is taught in universities by requiring students to study engineering thermodynamics, fluid mechanics, and heat transfer, in that order. In graduate school, these topics are discussed at more advanced levels. In recent years, however, there have been attempts to integrate these topics through a unified approach. This approach makes sense as thermal design of widely varied systems ranging from hair dryers to semiconductor chips to jet engines to nuclear power plants is based on the conservation eq-

tions of mass, momentum, angular momentum, energy, and the second law of thermodynamics. While integrating these topics has recently gained popularity, it is hardly a new approach. For example, Bird, Stewart, and Lightfoot in *Transport Phenomena*, Rohsenow and Choi in *Heat, Mass, and Momentum Transfer*, El-Wakil, in *Nuclear Heat Transport*, and Todreas and Kazimi in *Nuclear Systems* have pursued a similar approach. These books, however, have been designed for advanced graduate level courses. More recently, undergraduate books using an integral approach are appearing.

New Tritium Production Reactor Capacity Facilities, Siting, Construction and Operation Butterworth-Heinemann

Designed to prepare candidates for the American Board of Health Physics Comprehensive examination (Part I) and other certification examinations, this monograph introduces professionals in the field to radiation protection principles and their practical application in routine and emergency situations. It features more than 650 worked examples illustrating concepts under discussion along with in-depth coverage of sources of radiation, standards and regulations, biological effects of ionizing radiation, instrumentation, external and internal dosimetry, counting statistics, monitoring and interpretations, operational health physics, transportation and waste, nuclear emergencies, and more. Reflecting for the first time the true scope of health physics at an introductory level, *Basic Health Physics: Problems and Solutions* gives readers the tools to properly evaluate challenging situations in all areas of radiation protection, including the medical, university, power reactor, fuel cycle, research reactor, environmental, non-ionizing radiation, and accelerator health physics.

Medical Response to Effects of Ionizing Radiation U.S. Government Printing Office

Proceedings of a Conference on Medical Response to Effects of Ionizing Radiation held at Queen Elizabeth II Conference Centre, London, UK, 28-30 June 1989.

Fundamentals of Nuclear Reactor Physics Butterworth-Heinemann
The Energy Policy Act of 1992 called on the National Academy of Sciences to conduct a study and provide recommendations for reducing the costs of decontaminating and decommissioning (D&D) the nation's uranium enrichment facilities located at Oak Ridge, Tennessee; Raducah, Kentucky; and Portsmouth, Ohio. This volume examines the existing plans and cost estimates for the D&D of these facilities, including such elements as technologies, planning and management, and identifies approaches that could reduce D&D costs. It also assesses options for disposition of the large quantities of depleted uranium hexafluoride that are stored at these sites.

Nuclear Safety Springer Science & Business Media

A history of developments in the uses of radioactivity and ionising radiation in the last century and the measures used to protect people from harmful effects. The sources of radiation exposure covered include medical uses, nuclear power generation and natural ones, such as that from radon. The book traces the evolution of our understanding of the effects of radiation on the human body, particularly those leading to cancer and hereditary diseases. One of the key challenges for practitioners was constructing manageable frameworks for evaluating these effects so that there could be effective control and regulation. The book emphasises the international nature of these efforts and the need to change approaches as more data became available after the Second World War. For the second edition the opportunity has been taken to revise the citation system and make some correction but the major change is the addition of two new Chapters: one on nuclear criticality safety and the other on nuclear safety assessment.

Nuclear Energy CRC Press

The fourth edition of "The Chemistry of the Actinide and Transactinide Elements" comprises all chapters in volumes 1 through 5 of the third edition (published in 2006) plus a new volume 6. To remain consistent with the plan of the first edition, "... to provide a comprehensive and uniform treatment of the chemistry of the actinide [and transactinide] elements for both the nuclear technologist and the inorganic and physical chemist," and to be consistent with the maturity of the field, the fourth edition is organized in three parts. The first group of chapters follows the format of the first and second editions with chapters on individual elements or groups of elements that describe and interpret their chemical properties. A chapter on the chemical properties of the transactinide elements follows. The second group, chapters 15-26, summarizes and correlates physical and chemical properties that are in general unique to the actinide elements, because most of these elements contain partially-filled shells of 5f electrons whether present as isolated atoms or ions, as metals, as compounds, or as ions in solution. The third group, chapters 27-39, focuses on specialized topics that encompass contemporary fields related to actinides in the environment, in the human body, and in storage or wastes. Two appendices at the end of volume 5 tabulate important nuclear properties of all actinide and transactinide isotopes. Volume 6 (Chapters 32 through 39) consists of new chapters that focus on actinide species in the environment, actinide waste forms, nuclear fuels, analytical chemistry of plutonium, actinide chalcogenide and

hydrothermal synthesis of actinide compounds. The subject and author indices and list of contributors encompass all six volumes.

Nuclear Reactor Engineering National Academies Press
Fundamentals of Nuclear Reactor Physics offers a one-semester treatment of the essentials of how the fission nuclear reactor works, the various approaches to the design of reactors, and their safe and efficient operation. It provides a clear, general overview of atomic physics from the standpoint of reactor functionality and design, including the sequence of fission reactions and their energy release. It provides in-depth discussion of neutron reactions, including neutron kinetics and the neutron energy spectrum, as well as neutron spatial distribution. It includes ample worked-out examples and over 100 end-of-chapter problems. Engineering students will find this applications-oriented approach, with many worked-out examples, more accessible and more meaningful as they aspire to become future nuclear engineers. A clear, general overview of atomic physics from the standpoint of reactor functionality and design, including the sequence of fission reactions and their energy release. In-depth discussion of neutron reactions, including neutron kinetics and the neutron energy spectrum, as well as neutron spatial distribution. Ample worked-out examples and over 100 end-of-chapter problems. Full Solutions Manual.

Over 200 U.S. Department of Energy Manuals Combined: CLASSICAL PHYSICS; ELECTRICAL SCIENCE; THERMODYNAMICS, HEAT TRANSFER AND FLUID FUNDAMENTALS; INSTRUMENTATION AND CONTROL; MATHEMATICS; CHEMISTRY; ENGINEERING SYMBOLOGY; MATERIAL SCIENCE; MECHANICAL SCIENCE; AND NUCLEAR PHYSICS AND REACTOR THEORY CRC Press

The book bridges the gap between existing health physics textbooks and reference material needed by a practicing health physicist as the 21st century progresses. This material necessarily encompasses emerging radiation-generating technologies, advances in existing technology, and applications of existing technology to new areas. The book is written for advanced undergraduate and graduate science and engineering courses. It is also a useful reference for scientists and engineers.

Applied Energy Springer Science & Business Media

The Chemistry of the Actinide and Transactinide Elements is a contemporary and definitive compilation of chemical properties of all of the actinide elements, especially of the technologically important elements uranium and plutonium, as well as the transactinide elements. In addition to the comprehensive treatment of the chemical properties of each element, ion, and compound from atomic number 89 (actinium) through to 109 (meitnerium), this multi-volume work has specialized and definitive chapters on electronic theory, optical and laser fluorescence spectroscopy, X-ray absorption spectroscopy, organoactinide chemistry, thermodynamics, magnetic properties, the metals, coordination chemistry, separations, and trace analysis. Several chapters deal with environmental science, safe handling, and biological interactions of the actinide elements. The Editors invited teams of authors, who are active practitioners and recognized experts in their specialty, to write each chapter and have endeavoured to provide a balanced and insightful treatment of these fascinating elements at the frontier of the periodic table. Because the field has expanded with new spectroscopic techniques and environmental focus, the work encompasses five volumes, each of which groups chapters on related topics. All chapters represent the current state of research in the chemistry of these elements and related fields.

Medical Consequences of Radiological and Nuclear Weapons

Springer Science & Business Media

Compiled by the ANS Standards Subcommittee on Nuclear Terminology and Units, this reference covers all areas of the field, including nuclear and reactor physics, shielding, health physics, instrumentation, utility jargon, and regulatory and safeguard terms.

ERDA Energy Research Abstracts CRC Press

Nuclear Energy is one of the most popular texts ever published on basic nuclear physics, systems, and applications of nuclear energy. This newest edition continues the tradition of offering a holistic treatment of everything the undergraduate engineering student needs to know in a clear and accessible way. Presented is a comprehensive overview of radioactivity, radiation protection, nuclear reactors, waste disposal, and nuclear medicine. • New coverage on nuclear safety concerns following 9/11, including radiation and terrorism, nuclear plant security, and use of nuclear techniques to detect weapons materials • New facts on nuclear waste management, including the Yucca Mountain repository • New developments in the use of nuclear-powered systems for generating cheap and abundant hydrogen from water using nuclear technology • New information on prospects for new nuclear power reactors and their applications for electricity and desalination • New end-of-chapter Exercises and Answers, lists of Internet resources, and updated references. • New instructor web site including Solutions to Exercises and PowerPoint slides • New student web site containing computer programs for use with Computer Exercises

The Chemistry of the Actinide and Transactinide Elements (3rd ed., Volumes 1-5) John Wiley & Sons

This book discusses the technical alternatives for cleanup of

radioactive fluoride salts that were the fuel for the Molten Salt Reactor Experiment, a novel nuclear reactor design that was tested in the 1960s at the Oak Ridge National Laboratory in Tennessee. These fluoride salts pose an unusual cleanup challenge. The book discusses alternatives for processing and removing the salts based on present knowledge of fluoride salt chemistry and nuclear reactions of the radioactive constituents. [Glossary of Terms in Nuclear Science and Technology](#) Amer Nuclear Society

Over 19,000 total pages ... Public Domain U.S. Government published manual: Numerous illustrations and matrices. Published in the 1990s and after 2000. TITLES and CONTENTS: ELECTRICAL SCIENCES - Contains the following manuals: Electrical Science, Vol 1 - Electrical Science, Vol 2 - Electrical Science, Vol 3 - Electrical Science, Vol 4 - Thermodynamics, Heat Transfer, And Fluid Flow, Vol 1 - Thermodynamics, Heat Transfer, And Fluid Flow, Vol 2 - Thermodynamics, Heat Transfer, And Fluid Flow, Vol 3 - Instrumentation And Control, Vol 1 - Instrumentation And Control, Vol 2 Mathematics, Vol 1 - Mathematics, Vol 2 - Chemistry, Vol 1 - Chemistry, Vol 2 - Engineering Symbology, Prints, And Drawings, Vol 1 - Engineering Symbology, Prints, And Drawings, Vol 2 - Material Science, Vol 1 - Material Science, Vol 2 - Mechanical Science, Vol 1 - Mechanical Science, Vol 2 - Nuclear Physics And Reactor Theory, Vol 1 - Nuclear Physics And Reactor Theory, Vol 2. CLASSICAL PHYSICS - The Classical Physics Fundamentals includes information on the units used to measure physical properties; vectors, and how they are used to show the net effect of various forces; Newton's Laws of motion, and how to use these laws in force and motion applications; and the concepts of energy, work, and power, and how to measure and calculate the energy involved in various applications. * Scalar And Vector Quantities * Vector Identification * Vectors: Resultants And Components * Graphic Method Of Vector Addition * Component Addition Method * Analytical Method Of Vector Addition * Newton's Laws Of Motion * Momentum Principles * Force And Weight * Free-Body Diagrams * Force Equilibrium * Types Of Force * Energy And Work * Law Of Conservation Of Energy * Power - ELECTRICAL SCIENCE: The Electrical Science Fundamentals Handbook includes information on alternating current (AC) and direct current (DC) theory, circuits, motors, and generators; AC power and reactive components; batteries; AC and DC voltage regulators; transformers; and electrical test instruments and measuring devices. * Atom And Its Forces * Electrical Terminology * Units Of Electrical Measurement * Methods Of Producing Voltage (Electricity) * Magnetism * Magnetic Circuits * Electrical Symbols * DC Sources * DC Circuit Terminology * Basic DC Circuit Calculations * Voltage Polarity And Current Direction * Kirchhoff's Laws * DC Circuit Analysis * DC Circuit Faults * Inductance * Capacitance * Battery Terminology * Battery Theory * Battery Operations * Types Of Batteries * Battery Hazards * DC Equipment Terminology * DC Equipment Construction * DC Generator Theory * DC Generator Construction * DC Motor Theory * Types Of DC Motors * DC Motor Operation * AC Generation * AC Generation Analysis * Inductance * Capacitance * Impedance * Resonance * Power Triangle * Three-Phase Circuits * AC Generator Components * AC Generator Theory * AC Generator Operation * Voltage Regulators * AC Motor Theory * AC Motor Types * Transformer Theory * Transformer Types * Meter Movements * Voltmeters * Ammeters * Ohm Meters * Wattmeters * Other Electrical Measuring Devices * Test Equipment * System Components And Protection Devices * Circuit Breakers * Motor Controllers * Wiring Schemes And Grounding THERMODYNAMICS, HEAT TRANSFER AND FLUID FUNDAMENTALS. The Thermodynamics, Heat Transfer, and Fluid Flow Fundamentals Handbook includes information on thermodynamics and the properties of fluids; the three modes of heat transfer - conduction, convection, and radiation; and fluid flow, and the energy relationships in fluid systems. * Thermodynamic Properties * Temperature And Pressure Measurements * Energy, Work, And Heat * Thermodynamic Systems And Processes * Change Of Phase * Property Diagrams And Steam Tables * First Law Of Thermodynamics * Second Law Of Thermodynamics * Compression Processes * Heat Transfer Terminology * Conduction Heat Transfer * Convection Heat Transfer * Radiant Heat Transfer * Heat Exchangers * Boiling Heat Transfer * Heat Generation * Decay Heat * Continuity Equation * Laminar And Turbulent Flow * Bernoulli's Equation * Head Loss * Natural Circulation * Two-Phase Fluid Flow * Centrifugal Pumps INSTRUMENTATION AND CONTROL. The Instrumentation and Control Fundamentals Handbook includes information on temperature, pressure, flow, and level detection systems; position indication systems; process control systems; and radiation detection principles. * Resistance Temperature Detectors (Rtds) * Thermocouples * Functional Uses Of Temperature Detectors * Temperature Detection Circuitry * Pressure Detectors * Pressure Detector Functional Uses * Pressure Detection Circuitry * Level Detectors * Density Compensation * Level Detection Circuitry * Head Flow Meters * Other Flow Meters * Steam Flow Detection * Flow Circuitry * Synchro Equipment * Switches * Variable Output Devices * Position Indication Circuitry * Radiation Detection Terminology * Radiation Types * Gas-Filled Detector * Detector Voltage * Proportional Counter * Proportional Counter Circuitry * Ionization Chamber * Compensated Ion

Chamber * Electroscopie Ionization Chamber * Geiger-Müller Detector * Scintillation Counter * Gamma Spectroscopy * Miscellaneous Detectors * Circuitry And Circuit Elements * Source Range Nuclear Instrumentation * Intermediate Range Nuclear Instrumentation * Power Range Nuclear Instrumentation * Principles Of Control Systems * Control Loop Diagrams * Two Position Control Systems * Proportional Control Systems * Reset (Integral) Control Systems * Proportional Plus Reset Control Systems * Proportional Plus Rate Control Systems * Proportional-Integral-Derivative Control Systems * Controllers * Valve Actuators MATHEMATICS The Mathematics Fundamentals Handbook includes a review of introductory mathematics and the concepts and functional use of algebra, geometry, trigonometry, and calculus. Word problems, equations, calculations, and practical exercises that require the use of each of the mathematical concepts are also presented. * Calculator Operations * Four Basic Arithmetic Operations * Averages * Fractions * Decimals * Signed Numbers * Significant Digits * Percentages * Exponents * Scientific Notation * Radicals * Algebraic Laws * Linear Equations * Quadratic Equations * Simultaneous Equations * Word Problems * Graphing * Slopes * Interpolation And Extrapolation * Basic Concepts Of Geometry * Shapes And Figures Of Plane Geometry * Solid Geometric Figures * Pythagorean Theorem * Trigonometric Functions * Radians * Statistics * Imaginary And Complex Numbers * Matrices And Determinants * Calculus CHEMISTRY The Chemistry Handbook includes information on the atomic structure of matter; chemical bonding; chemical equations; chemical interactions involved with corrosion processes; water chemistry control, including the principles of water treatment; the hazards of chemicals and gases, and basic gaseous diffusion processes. * Characteristics Of Atoms * The Periodic Table * Chemical Bonding * Chemical Equations * Acids, Bases, Salts, And Ph * Converters * Corrosion Theory * General Corrosion * Crud And Galvanic Corrosion * Specialized Corrosion * Effects Of Radiation On Water Chemistry

(Synthesis) * Chemistry Parameters * Purpose Of Water Treatment * Water Treatment Processes * Dissolved Gases, Suspended Solids, And Ph Control * Water Purity * Corrosives (Acids And Alkalies) * Toxic Compound * Compressed Gases * Flammable And Combustible Liquids ENGINEERING SYMBOLOGY. The Engineering Symbology, Prints, and Drawings Handbook includes information on engineering fluid drawings and prints; piping and instrument drawings; major symbols and conventions; electronic diagrams and schematics; logic circuits and diagrams; and fabrication, construction, and architectural drawings. * Introduction To Print Reading * Introduction To The Types Of Drawings, Views, And Perspectives * Engineering Fluids Diagrams And Prints * Reading Engineering P&IDs * P&ID Print Reading Example * Fluid Power P&IDs * Electrical Diagrams And Schematics * Electrical Wiring And Schematic Diagram Reading Examples * Electronic Diagrams And Schematics * Examples * Engineering Logic Diagrams * Truth Tables And Exercises * Engineering Fabrication, Construction, And Architectural Drawings * Engineering Fabrication, Construction, And Architectural Drawing, Examples MATERIAL SCIENCE. The Material Science Handbook includes information on the structure and properties of metals, stress mechanisms in metals, failure modes, and the characteristics of metals that are commonly used in DOE nuclear facilities. * Bonding * Common Lattice Types * Grain Structure And Boundary * Polymorphism * Alloys * Imperfections In Metals * Stress * Strain * Young's Modulus * Stress-Strain Relationship * Physical Properties * Working Of Metals * Corrosion * Hydrogen Embrittlement * Tritium/Material Compatibility * Thermal Stress * Pressurized Thermal Shock * Brittle Fracture Mechanism * Minimum Pressurization-Temperature Curves * Heatup And Cooldown Rate Limits * Properties Considered * When Selecting Materials * Fuel Materials * Cladding And Reflectors * Control Materials * Shielding Materials * Nuclear Reactor Core Problems * Plant Material Problems * Atomic Displacement Due To Irradiation * Thermal And Displacement Spikes * Due To Irradiation * Effect

Due To Neutron Capture * Radiation Effects In Organic Compounds * Reactor Use Of Aluminum MECHANICAL SCIENCE. The Mechanical Science Handbook includes information on diesel engines, heat exchangers, pumps, valves, and miscellaneous mechanical components. * Diesel Engines * Fundamentals Of The Diesel Cycle * Diesel Engine Speed, Fuel Controls, And Protection * Types Of Heat Exchangers * Heat Exchanger Applications * Centrifugal Pumps * Centrifugal Pump Operation * Positive Displacement Pumps * Valve Functions And Basic Parts * Types Of Valves * Valve Actuators * Air Compressors * Hydraulics * Boilers * Cooling Towers * Demineralizers * Pressurizers * Steam Traps * Filters And Strainers NUCLEAR PHYSICS AND REACTOR THEORY. The Nuclear Physics and Reactor Theory Handbook includes information on atomic and nuclear physics; neutron characteristics; reactor theory and nuclear parameters; and the theory of reactor operation. * Atomic Nature Of Matter * Chart Of The Nuclides * Mass Defect And Binding Energy * Modes Of Radioactive Decay * Radioactivity * Neutron Interactions * Nuclear Fission * Energy Release From Fission * Interaction Of Radiation With Matter * Neutron Sources * Nuclear Cross Sections And Neutron Flux * Reaction Rates * Neutron Moderation * Prompt And Delayed Neutrons * Neutron Flux Spectrum * Neutron Life Cycle * Reactivity * Reactivity Coefficients * Neutron Poisons * Xenon * Samarium And Other Fission Product Poisons * Control Rods * Subcritical Multiplication * Reactor Kinetics * Reactor **Nuclear Criticality Safety** National Academies Press This edition builds on earlier traditions in providing broad subject-area coverage, application of theory to practical aspects of commercial nuclear power, and use of instructional objectives. Like the first edition, it focuses on what distinguishes nuclear engineering from the other engineering disciplines. However, this edition includes reorganization and overall update of descriptions of reactor designs and fuel-cycle steps, and more emphasis on reactor safety, especially related to technical and management lessons learned from the TMI-2 and Chernobyl - 4 accidents.