

THE EIS BOOK

Managing and Preparing
Environmental Impact Statements

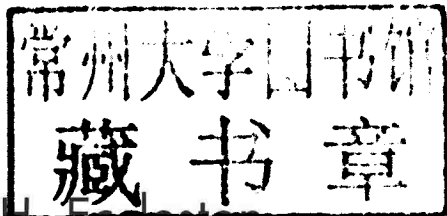
Charles H. Eccleston



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Summary: "The National Environmental Policy Act (NEPA) requires that ALL federal agencies prepare Environmental Impact Statements (EIS) for any proposal that may significantly affect the quality of the human environment. They generally take more than a year to prepare, have an extensive public participation component, and require substantial collection of original data. An Assessment can generally be completed in a few months. A company, institution, dedicated environmental professional, or federal agency generally is involved with preparation of both assessments and impact statements. This book helps agencies prepare EISs by providing step-by-step direction for navigating the EIS process"-- Provided by publisher.

Includes bibliographical references and index.

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Preface

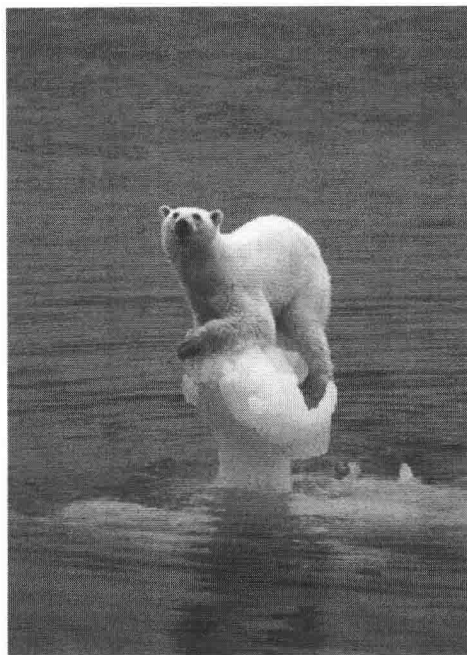


Figure 0.1 NEPA involves timely environmental issues. (Courtesy images.google.com.)

The US National Environmental Policy Act (NEPA) provides a systematic and comprehensive planning process for considering the consequences and alternatives of federal actions before a final decision is made to pursue a course of action (Figure 0.1). NEPA's most notable planning provision undoubtedly involves the preparation of an environmental impact statement (EIS). An EIS must be prepared for all federal actions that may significantly affect environment quality. Unfortunately, one can easily find

examples where an EIS has been prepared in excruciating detail, sometimes *ad nauseam*, investigating the most trivial and remote issues in detail. Such EISs may examine every conceivable impact, significant or not, yet blatantly ignore the very purpose of preparing the EIS; the EIS is the federal government's planning and decision-making tool. Poor EIS practice leads to poorly planned projects, and ultimately poor environmental protection. Some poorly planned projects not only jeopardize environmental quality but pose severe risks to society as well. Perhaps no example better illustrates this problem than the case study described in Chapter 1 in which the Nuclear Regulatory Commission has prepared deficient EISs to justify its mission of relicensing the nation's fleet of antiquated nuclear reactors.

This book is not about preparing bigger EISs—but better ones. It focuses on the EIS process from a planning perspective. Rather than describing an EIS as a document preparation procedure, this book describes it from the context of a comprehensive framework for *planning* future actions. It presents a step-by-step guide to the management and preparation of EISs.

Objectives of this book

Emphasis is placed on providing direction for preparing defensible analyses that facilitate well-planned projects and improved decision making. Beginning with fundamental topics and advancing into successively more advanced subjects, this book can be used by beginners and experts alike. The reader is presented with a single compendium synthesizing and describing all relevant requirements and guidance for preparing a legally sufficient EIS.

Specific objectives

In this book

- All EIS document requirements (documentation requirements) are detailed, including the Council on Environmental Quality's NEPA regulations and related guidelines; Environmental Protection Agency (EPA) guidance and requirements; presidential executive orders; and case law. Emphasis is placed on addressing timely and controversial issues such as how to perform a legally sufficient cumulative impact assessment and how to evaluate greenhouse emissions and climate change.
- The EIS process (process requirements) for preparing the statement is detailed. A step-by-step approach for navigating the entire EIS process is described. All pertinent process requirements from issuing the notice of intent, through public scoping, to issuing the final record of decision (ROD) are detailed.

- Analytical requirements (analysis requirements) for preparing the EIS analysis are detailed. Guidance for performing various types of analyses is also described.
- Tools, techniques, and best professional practices for preparing the EIS and performing the analysis are detailed. Lessons learned from case law are integrated with the relevant requirements.
- To reinforce key EIS regulatory requirements, a case study is presented in Chapter 1. Lessons learned from this case study are integrated with appropriate regulatory requirements throughout this text.

Annotated outline

Chapters 1 and 2: The book begins with a case study of a faulty EIS process. The purpose is to show the types of problems that can be encountered and how to avoid repeating similar errors. Chapter 2 provides a brief introduction to the NEPA process.

Chapters 3 and 4: The first two chapters set the stage for presenting a step-by-step approach for navigating the complexities of the EIS process. To this end, Chapters 3 and 4 present the reader with all pertinent EIS procedural requirements (process requirements) from issuing the notice of intent, through public scoping, to preparing the EIS, and cumulating with the issuance of the record of decision (ROD).

Chapter 5: Chapter 5 presents the analytical requirements (analysis requirements), including guidance and direction for preparing an accurate, objective, rigorous, and legally sufficient analysis of impacts; tools, techniques, and best professional practices for performing a systematic and rigorous analysis are also introduced.

Chapter 6: Chapter 6 details all key EIS documentation requirements (document requirements). This chapter synthesizes and integrates a large, complex, and diverse body of guidance, direction, and requirements for preparing a legally sufficient EIS document.

On completing this book, the reader should have a firm grasp of the step-by-step process for preparing an EIS, including all key regulatory requirements that a legally sufficient EIS document must satisfy. No other book synthesizes all such requirements and guidance into a single source for easy and rapid access. This book is therefore unique in that it provides readers with all essential requirements as well as practical guidance for preparing an EIS.

Audience

Although this book is aimed toward NEPA professionals in government, consulting, and the private sector, the organization lends itself equally to individuals who desire only an introduction to certain selected aspects of the EIS planning process. Skilled practitioners may use the book as a resource for quickly reviewing complex issues. Individuals, professionals, and groups who will find this book of interest include

- NEPA practitioners
- Educators and students
- Project managers
- Scientists
- Planners
- Analysts
- Regulators
- Decision makers
- Environmental lawyers
- Public advocacy and watchdog organizations

Because it starts with elementary topics and progressively advances into more intricate subject matter, it is also an ideal book for undergraduate/graduate students in environmental, planning, and engineering curricula. Each chapter begins with a set of learning objectives and ends with a list of questions designed to test comprehension. Three capstone projects are also presented at the end of the book.

If you have technical questions or issues, or need assistance, the author can be contacted at NEPAServices@msn.com.

Author



Charles H. Eccleston is a NEPA consultant, environmental trainer, and author. His responsibilities include assisting contractors and agencies in preparing EISs that are legally sufficient and meet all key regulatory requirements; his expertise includes providing assistance on NEPA lawsuits, including identification of regulatory and legal flaws. He is currently developing a series of NEPA and environmental training videos.

With 30 years of experience, he has managed and prepared a diverse array of NEPA, environmental, energy, and planning assessments. He has served on two US White House-sponsored taskforces for resolving environmental policy problems. Eccleston is recognized in *Marquis' Who's Who in Science and Engineering*, *Who's Who in America*, and *Who's Who in the World* as a leading international expert for his NEPA and environmental impact assessment (EIA) achievements. He is the author of more than 75 professional papers and eight books on the NEPA process, EIA, and environmental and energy policy.

He was elected three times to the board of directors of the National Association of Environmental Professionals (NAEP) and received its national award for Outstanding Environmental Leadership. Currently, he serves as an elected representative to the International Organization for Standardization's 242 working group, responsible for developing an ISO 50001 Energy Management System (EnMS) standard for the worldwide use and management of energy. Eccleston developed and published the original concept (adopted by a number of US agencies and around the world) for integrating NEPA or a similar process with an ISO 140001 Environmental Management System (EMS).

Eccleston is fluent on a wide range of environmental and energy policy issues such as assessment of ecological effects, sustainability, climate change, water and food scarcity, radioactive/hazardous waste, peak oil, population issues, and energy generation. His energy-related experience

includes investigating nuclear, gas-fired, and coal-fired plants, and renewable energy systems. His recent books include

- *Inside Energy: Developing and Managing an ISO 50001 Energy Management System* (CRC Press 2012)
- *Preparing NEPA Environmental Assessments: A Users Guide to Best Professional Practices* (CRC Press 2012)
- *Environmental Impact Assessment: A Guide to Best Professional Practices* (CRC Press 2011)
- *Global Environmental Policy: Principles, Concepts and Practice* (CRC Press 2011)
- *NEPA and Environmental Planning: Tools, Techniques, and Approaches for Practitioners* (CRC Press 2008)

Eccleston is currently developing a series of professional training videos on subjects ranging from NEPA and EISs, too environmental and regulatory requirements, and energy and EIA. This series includes an EIS video that encapsulates this book. The author's consulting services include assisting agencies and consulting companies on NEPA projects, resolving NEPA problems, reviewing EISs to ensure they meet regulatory and legal requirements, providing expert assistance in NEPA lawsuits, and conducting NEPA and environmental training. He can be contacted at NEPAservices@hotmail.com, or visit the NEPA website at <http://www.NEPAservices.com>. For advanced EIS and NEPA training, visit the author at <http://campus.education.com/NEPAcampus>. The NEPA website is being modified and <http://campus.education.com/NEPAcampus> is under construction. Both will be completed before the book is published.

List of acronyms

ACHP Advisory Council on Historic Preservation
ADREC administrative record
AEC Atomic Energy Commission
AIM action–impact model
AR associate reviewer
ARTS administrative record tracking system
BA biological assessment
BE biological evaluation
CEQ Council on Environmental Quality, also referred to as the “Council”
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR United States Code of Federal Regulations
CIA cumulative impact assessment
CO carbon monoxide
Commission US Nuclear Regulatory Commission
COMTRACK comment tracking
CZMA Coastal Zone Management Act
DBS decision-based scoping
DEIS draft environmental impact statement
DIT decision-identification tree
DLR Division of License Renewal, Nuclear Regulatory Commission
EA environmental assessment
EC environmental concerns
EIS environmental impact statement
EJ environmental justice
EMS environmental management systems
EO executive order; also refers to environmental objections
EPA US Environmental Protection Agency
EU environmental unsatisfactory
FEIS final environmental impact statement
FOIA US Freedom of Information Act
FONSI finding of no significant impact
FR *Federal Register*

FWS	US Fish and Wildlife Service
GEIS	generic environmental impact statement
GIS	geographic information system
HIA	health impact analysis
IAJM	interim action justification memorandum
IDT	interdisciplinary team
ISO	International Organization for Standardization
L-EIS	legislative EIS
LO	lack of objections
MAP	management action plan; also refers to mitigation action plan
MOA	Memorandum of Agreement
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	US National Historic Preservation Act
NMFS	US National Marine Fisheries Service
NOA	notice of availability
NOAA	US National Oceanic and Atmospheric Administration
NOI	notice of intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	US Nuclear Regulatory Commission
NRHP	US National Register of Historic Places
OFA	US Office of Federal Activities
PA	programmatic agreement
PERT	program evaluation review technique
PEIS	programmatic environmental impact statement
PM	project manager
PM_{2.5}	particulate matter 2.5 micrometers in diameter
PM₁₀	particulate matter 10 micrometers in diameter
PR	principal reviewer
PSD	prevention of significant deterioration
RCRA	US Resource Conservation and Recovery Act
Regulations	The NEPA Implementing Regulations (40 CFR Parts 1500–1508)
ROD	record of decision
RPB1	relicensing project branch 1
SAMA	severe accident mitigation alternatives
S-EIS	supplemental EIS
SEPA	state environmental policy acts
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SOW	statement of work
SO_x	sulfur oxides

SPN statement of purpose and need
THPO Tribal Historic Preservation Officer
US United States
U.S.C. United States Code
USFWS United States Fish and Wildlife Service
VOC volatile organic compounds
WBS work breakdown structure

Introduction

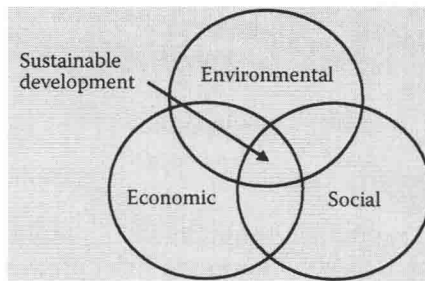


Figure 0.2 Economic and social goals need to be balanced with environmental concerns.

NEPA's history and precedent

To fully appreciate the forces that led to enactment of a national environmental policy, one must understand the context in which the National Environmental Policy Act (NEPA) was created. The American public and Congress were becoming increasingly troubled by the deterioration in environmental quality (Figure 0.2). Perhaps no event captured the public's imagination more than the nightly national news broadcasting scenes of the Cuyahoga River in Cleveland, Ohio (Figure 0.3). It was so polluted that it actually caught fire!



Figure 0.3 Cuyahoga River caught fire in 1969. (Courtesy images.google.com.)

Enactment of NEPA

Before NEPA's enactment, there was actually a precedent for preparing a study of possible environmental impacts from proposed projects. In the early 1960s, Congress required the Atomic Energy Commission, the predecessor to today's Nuclear Regulatory Commission, to prepare an "environmental report" on a disturbing proposal to blast a harbor along the Alaskan coastline using nuclear explosives (e.g., nuclear bombs). This project has since been criticized as potentially one of the most environmentally questionable proposals ever concocted. The project was ultimately canceled, in large measure because of the results of this environmental report. This report has been viewed as the world's first *de facto* environmental impact statement (EIS).¹ This trailblazing report would provide a model for NEPA's EIS requirement in the later 1960s.

The world's first environmental policy

By the late 1960s, Congress was increasingly hearing testimony from the scientific community regarding the alarming rate of environmental degradation and the potential for future calamity. Congress had many avenues available for addressing the nation's looming environmental problems. It chose to begin the long road to environmental recovery by adopting a national environmental policy regarding the nation's vision and commitment to a clean and healthy environment. As described below, NEPA would become the world's first national environmental policy. Many nations would follow suit with their own national policies.

THE NEPA STATUTE

The National Environmental Policy Act of 1969, as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982)

An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Environmental Policy Act of 1969."

PURPOSE

Sec. 2 [42 USC § 4321].

The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

TITLE I

CONGRESSIONAL DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

Sec. 101 [42 USC § 4331].

(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

NEPA's EIS provision

NEPA was a revolutionary statute and the subject of considerable debate. Because it is the single largest entity in the United States and as a result of the vast scope and nature of its actions, the federal government accounted for a disproportionately larger share of the nation's environmental degradation. Congressional leaders believed it was necessary for the US government to take a leadership role in protecting the environment. Congress began considering the need for a policy that would spell out a national commitment to environmental protection. They believed that passage of such a bill would demonstrate the seriousness with which Congress viewed environmental protection and set a precedent for stricter laws and standards that would follow in its wake.

NEPA'S EIS REQUIREMENT (SEC. 102, 42 USC § 4332)

All agencies of the Federal Government shall—

1. utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment;
2. identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;
3. include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—
 - i. the environmental impact of the proposed action,
 - ii. any adverse environmental effects which cannot be avoided should the proposal be implemented,
 - iii. alternatives to the proposed action,
 - iv. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
 - v. any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.