



U.S. NUCLEAR REGULATORY COMMISSION
**ENVIRONMENTAL STANDARD
REVIEW PLAN**

**STANDARD REVIEW PLANS FOR
ENVIRONMENTAL REVIEWS FOR
NUCLEAR POWER PLANTS**

July 2007

U.S. NUCLEAR REGULATORY COMMISSION

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USNRC ENVIRONMENTAL STANDARD REVIEW PLAN

This Environmental Standard Review Plan has been prepared to establish guidance for the U.S. Nuclear Regulatory Commission staff responsible for environmental reviews for nuclear power plants. The Environmental Standard Review Plan is not a substitute for the NRC's regulations, and compliance with it is not required.

These documents are made available to the public as part of the Commission's policy to inform the nuclear industry and the general public of regulatory procedures and policies. Individual sections of NUREG-1555 will be revised periodically, as appropriate, to accommodate comments and to reflect new information and experience. Comments and suggestions for improvement will be considered and should be sent to the U.S. Nuclear Regulatory Commission, Office of New Reactors, Washington, D.C. 20555-0001.

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ABSTRACT

This document provides guidance to the Nuclear Regulatory Commission (NRC) staff in implementing provisions of 10 CFR 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” related to nuclear power plants . It supersedes “Environmental Standard Review Plan” NUREG-1555, Vol. 1 & 2 issued in 2000. The document reflects new regulatory requirements and guidance that have appeared since 2000 and also the NRC’s experience with applications for early site permits. Supplement 1 to this document should be used by the staff for review of environmental reports related to applications for renewal of nuclear power plant operating licenses.

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ABBREVIATIONS AND ACRONYMS

| | |
|-----------------|--|
| AEA | Atomic Energy Act |
| AEC | Atomic Energy Commission |
| AEP | Archaeology and Ethnography Program |
| ALARA | as low as is reasonably achievable |
| ALI | annual limit on intake |
| ANS | American Nuclear Society |
| ANSI | American National Standards Institute |
| AWWA | American Water Works Association |
| BEIR | Biological Effects of Ionizing Radiation |
| BMP | best management practice |
| BOD | biological oxygen demand |
| BWR | boiling-water reactor |
| CDC | Centers for Disease Control and Prevention |
| CEQ | Council on Environmental Quality |
| CFC | chlorinated fluorocarbons |
| CFR | Code of Federal Regulations |
| CH | Central Hudson Gas & Electric Corporation |
| CO ₂ | carbon dioxide |
| COD | chemical oxygen demand |
| COL | combined license |

| | |
|------|--------------------------------------|
| CP | construction permit |
| CWA | Clean Water Act |
| DAC | derived air concentration |
| DBA | design basis accident |
| DBF | design basis flood |
| DEIS | Draft Environmental Impact Statement |
| DOI | Department of the Interior |
| D/Q | relative deposition |
| EA | environmental assessment |
| EIA | Energy Information Administration |
| EIS | environmental impact statement |
| EPA | Environmental Protection Agency |
| EPM | Environmental Project Manager |
| EPRI | Electric Power Research Institute |
| ER | environmental report |
| ES | environmental standard |
| ESP | early site permit |
| ESRP | environmental standard review plan |
| FAA | Federal Aviation Administration |
| FDA | Food and Drug Administration |
| FEIS | Final Environmental Impact Statement |
| FERC | Federal Energy Regulatory Commission |

| | |
|---------|--|
| FES | Final Environmental Statement |
| FGD | flue-gas-desulfurization |
| FSAR | Final Safety Analysis Report |
| FWCA | Fish and Wildlife Coordination Act |
| FWPCA | Federal Water Pollution Control Act |
| FWS | Fish and Wildlife Service |
| GEIS | generic environmental impact statement |
| Gen&SIS | <u>G</u> eographical, <u>E</u> nvironmental, & <u>S</u> iting <u>I</u> nformation <u>S</u> ystem |
| GIS | Geographic Information System |
| HASL | Health and Safety Laboratory |
| HM | heavy metal |
| HTGR | high-temperature gas-cooled reactor |
| HUD | Department of Housing and Urban Development |
| IAEA | International Atomic Energy Agency |
| IASD | Interagency Archeological Service Division |
| ICRP | International Commission on Radiological Protection |
| IEEE | Institute of Electrical and Electronic Engineers, Inc. |
| IPE | Individual Plant Examination |
| IPEEE | Individual Plant Examination of External Events |
| ISO | Independent System Operator |
| kWh | kilowatt-hour |
| LR | license renewal |

| | |
|-----------------|---|
| LWR | light-water-cooled reactor |
| MACCS | MELCOR Accident Consequence Code System |
| MOX | mixed oxide fuel |
| MWe | megawatts electrical |
| MWt | megawatts thermal |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NCDC | National Climatic Data Center |
| NCRP | National Council on Radiation Protection and Measurements |
| NEPA | National Environmental Policy Act of 1969 |
| NESC | National Electrical Safety Code |
| NHPA | National Historical Preservation Act |
| NM | Niagara Mohawk Power Corporation |
| NOAA | National Oceanic and Atmospheric Administration |
| NO _x | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NRC | Nuclear Regulatory Commission |
| NRCS | Natural Resources Conservation Service |
| NRO | Office of New Reactors |
| NRR | Office of Nuclear Reactor Regulation |
| NWS | National Weather Service |
| OAHP | Office of Archaeology and Historic Preservation |

| | |
|-----------------|---|
| O&R | Orange and Rockland Utilities, Inc. |
| OL | operating license |
| OSHA | Occupational Safety and Health Administration |
| PAM | primary amoebic meningoencephalitis |
| PRA | probabilistic risk assessment |
| PSAR | Preliminary Safety Analysis Report |
| PSDAR | post-shutdown decommissioning activities report |
| PUD | Public Utility District |
| PWR | pressurized-water reactor |
| RAI | request for additional information |
| RCRA | Resource Conservation and Recovery Act |
| RG&E | Rochester Gas and Electric Corporation |
| ROI | region of interest |
| RRY | reference reactor year |
| SAMA | severe accident mitigation alternatives |
| SAMDA | severe accident mitigation design alternatives |
| SAR | safety analysis report |
| SEIS | supplemental environmental impact statement |
| SER | safety evaluation report |
| SF | sinking fund |
| SHPO | State Historic Preservation Officer |
| SO _x | sulfur oxides |

| | |
|----------|--|
| SPP | Sterling Power Plant |
| SRP | Standard Review Plan |
| SSER | Supplemental Site Safety Evaluation Report |
| STORET | STOrage and RETrieval System for Water and Biological Data |
| TEDE | total effective dose equivalent |
| TLD | thermoluminescent dosimeter |
| TSP | total suspended particulates |
| TVA | Tennessee Valley Authority |
| USGS | U.S. Geological Survey |
| UTM | Universal Transverse Mercator |
| VOC | volatile organic compounds |
| χ/Q | normalized concentration |

INTRODUCTION

This document contains environmental standard review plans (ESRPs) that constitute a series of instructions developed for Nuclear Regulatory Commission (NRC) staff to use when conducting environmental reviews of applications related to nuclear power plants.

The ESRPs are companions to regulatory guides that address siting and environmental issues, for example,

- Regulatory Guide 4.2, Rev. 2. *Preparation of Environmental Reports for Nuclear Power Stations* (NRC 1976), and its Supplement 1, *Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses* (NRC 1999)
- Regulatory Guide 4.7, Rev. 2. *General Site Suitability Criteria for Nuclear Power Stations* (NRC 1998).

The ESRPs are also companions to NRC's Review Standard (RS)-002 (NRC 2004a). RS-002 contains detailed guidance for NRC staff for reviewing applications for early site permits (ESPs).

ESRPs were initially developed by NRC staff and NRC contractors who were intimately involved in the preparation of environmental impact statements (EISs) in the early and mid 1970s. Following an extensive review process and public comment period, those ESRPs were published in 1978 as NUREG-0555. A revised document was published in 2000 as NUREG-1555, Vol. 1 & 2, *Environmental Standard Review Plan: Standard Review Plans for Environmental Reviews for Nuclear Power Plants* (NRC 2000a). The present ESRPs supersede the ESRPs published in 2000. Changes in the ESRPs reflect changes in NRC policy, regulations, or guidance; new regulations issued by other Federal agencies; executive orders issued by the President; NRC experience gained from prior applications; and judicial or administrative hearing board decisions. Other changes reflect changes in the U.S. electric power industry.

Any questions regarding the content of any plan in this document may be directed to the responsible organization within NRC, at the following address:

Environmental Projects Branch B
Attn: NUREG-1555, Rev. 1 Comments
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Additional copies of these plans may be obtained as indicated on the inside front cover of this document.

NRC's Implementation of the NEPA Process

The National Environmental Policy Act of 1969 (NEPA), as amended, directs that all agencies of the Federal Government comply with the procedures in Section 102(2) of NEPA to the fullest extent possible. NRC regulations in 10 CFR Part 51 implement NEPA Section 102(2) in a manner that is consistent with NRC's domestic licensing and related regulatory authority under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended, and reflect the Commission's policy to voluntarily take account of the regulations of the Council on Environmental Quality (CEQ) at 40 CFR 1500 - 1508, subject to certain conditions (10 CFR 51.10). The Commission recognizes a continuing obligation to conduct its domestic licensing and related regulatory functions in a manner that is both receptive to environmental concerns and consistent with the Commission's responsibility as an independent regulatory agency for protecting the radiological health and safety of the public.

Accordingly, the Commission has listed in 10 CFR 51.20(b) the types of actions that require an EIS or a supplement to an EIS. Similarly, the Commission has listed in 10 CFR 51.22(c) and (d) licensing and regulatory actions that have been given categorical exclusions from the requirement for preparation of an EIS or environmental assessment (EA). All other licensing and regulatory actions subject to 10 CFR 51, Subpart A, require preparation of an EA (10 CFR 51.21).

The level of environmental review associated with proposed actions is determined by the appropriate NRC Office Director. If the proposed action is not of the type listed in 10 CFR 51.22(c) as a categorical exclusion or 10 CFR 51.20(b) as requiring preparation of an EIS, the NRC Office Director determines whether an EIS or an EA should be prepared. Whenever the appropriate NRC Office Director determines that an EIS should be prepared by the NRC in connection with a proposed action, a notice of intent is published in the *Federal Register*, and an appropriate scoping process is conducted.

The contents of the notice of intent and the participants in and covered by the scoping process are outlined in 10 CFR 51.27, 10 CFR 51.28, and 10 CFR 51.29, respectively. In general, the scoping process is open to anyone who requests an opportunity to participate. However, participation in the scoping process for an EIS does not entitle the participant to become a party to the proceeding to which the EIS relates (10 CFR 51.28(c)). Areas covered in the scoping process include (10 CFR 51.29(a))

- defining the proposed action
- determining the scope of the EIS and identifying significant issues
- identifying, and eliminating from detailed study, issues that are peripheral, not significant, or that have been covered by prior environmental reviews
- identifying other EAs or EISs related to, but not part of, the scope of the EIS under consideration
- identifying other environmental reviews and consultations that are required

- indicating the relationship of EIS preparation timing to the Commission's planning and decisionmaking schedule
- identifying cooperating agencies
- describing the means by which the EIS will be prepared.

At the conclusion of the scoping process, the appropriate NRC division director will prepare a concise summary of the determinations made by the NRC, including the significant issues identified, and send a paper or electronic copy of the summary to each participant in the scoping process.

Responsibility for environmental reviews and preparation of EISs rests with the NRC Environmental Project Manager (EPM). The EPM interacts with the applicant's technical and supervisory personnel, other external stakeholders, as well as with NRC management. In addition, the EPM coordinates the efforts of numerous staff personnel in many complex disciplines within both formal requirements and management-approved guidance. With assistance from review personnel and NRC contractors, the EPM develops the overall recommendations for action to be taken by the Director of the Office of New Reactors (NRO) or the Director of the Office of Nuclear Reactor Regulation (NRR) with respect to the many aspects of siting and nuclear-facility design and operation.

The EPM responsibilities related to environmental reviews include managing the acceptance review of the applicant's environmental report (ER) and managing the environmental reviews performed by the staff and NRC contractors. The acceptance review determines whether the information included in the ER is sufficient to satisfy Commission requirements . **If directed by senior management, the acceptance review may be extended and expanded to include the technical sufficiency of the information in the ER. General requirements for ERs are set out at 10 CFR 51.45. Additional ER requirements are in 10 CFR 51.50 - 51.68. Technical sufficiency would be based on a comparison of the contents of the ER to the guidance in Regulatory Guides 4.2 and 4.7, and in the applicable ESRPs.** If the application is not sufficiently complete, the staff specifically requests additional information through the EPM. When the application is reasonably complete, it is docketed, and the detailed review process begins.

After NRC acceptance of an applicant's ER, the ER is reviewed technically by the functional review branches in the NRO or NRR divisions and by the EPM. Details of the responsibility of each branch in carrying out review functions, including criteria for acceptability, are contained in the ESRPs. During the course of the staff's review, it is usually necessary to request additional information from the applicant about a number of issues. Reviewers formulate questions to elicit this additional information . Requests for additional information (RAIs) are transmitted to the applicant by the EPM. RAIs also serve as a public record of the staff's concerns about the application at the review stage.

When the staff's independent review and evaluation of the applicant's ER, the evaluation of other information, and the staff's confirmatory analysis have progressed to the point at which the EPM and reviewers have completed their review and evaluation, sections of the draft environmental impact statement (DEIS) are prepared; depending on the type of application, the DEIS may be a stand alone

document or a supplement to an existing EIS or generic environmental impact statement (GEIS). Material for the DEIS is provided to the EPM, who is responsible for critically reviewing each submittal from the reviewers and ensuring that the conclusions of the DEIS are representative of the review team analysis and reflect NRC policy.

It is expected that each EIS prepared using the guidance in these ESRPs will

- stand on its own as an analytical document that fully informs decisionmakers and the public of the projected environmental effects of the proposed action and those of reasonable alternatives
- emphasize the issues that are significant with scaled emphasis on less significant issues and background material
- be written in clear, concise, and plain language.

Tiering will be used when appropriate to reduce EIS length. Staff may elect to justify information that can be incorporated by reference or justify that information contained in other EISs can be applied. However, it should not be carried to the point where it is necessary to refer to other documents to obtain information essential to a basic understanding of the issues addressed in the EIS. Rather, tiering should be used to direct interested readers to more detailed discussions of specific issues. Tiering is discussed in 10 CFR 51, Appendix A.

When an acceptable DEIS has been assembled, the DEIS is submitted for review and comment to the management in the affected NRC office, the Office of the General Counsel, and the division directors of the participating review groups. Final approval is obtained from the EPM's division director before publication of the DEIS.

The DEIS issued to the public is a summary of the staff's initial conclusions regarding an application. The DEIS is not a draft in that it is incomplete. Rather, it is a draft discussion of the proposed action and alternatives and the staff's assessment of potential environmental impacts. The DEIS provides the public with an opportunity to comment, request clarification, recommend changes, or provide additional information to the staff for consideration in assessing potential environmental impacts and potential benefits if benefits are considered in the DEIS. **DEISs prepared in conjunction with an ESP application will not include an assessment of benefits (10 CFR 51.50(b)) unless addressed by the ESP applicant.**

If no comments on the DEIS are received, the DEIS can be published as a final environmental impact statement (FEIS). If comments on the DEIS are received, they are considered by the staff. Staff responses to comments on the DEIS are included in the FEIS. The staff may take one of several possible actions in response to comments on the DEIS: a portion of the DEIS may be changed, new material may be added to the appropriate section identified in the discussion of comments, or no change may ensue.

The FEIS is a summary of the staff's evaluation of the environmental portion of the application relative to the anticipated impact of the proposed action on the environment. It is provided to the public and is

used as the main body of environmental evidence at the public hearing to support the Commission's decision that the proposed action should be approved or rejected.

Scope of the Environmental Standard Review Plans

The original ESRPs issued in 1978 were prepared specifically for the environmental review of applications for construction permits (CPs) for nuclear power plants under 10 CFR 50 and for the initial operating license (OL). Since the initial set of ESRPs was published, the range of applications for which environmental reviews are conducted has been expanded with the addition of 10 CFR 52 and 54.

The updated and revised ESRPs in this document will guide the staff's environmental reviews for the range of applications including "green field" reviews of CP and OL applications in 10 CFR 50, reviews of applications for ESPs in 10 CFR 52, Subpart A, and reviews of applications for combined licenses (COLs) in 10 CFR 52, Subpart C. Reviews of ESP applications are limited in the sense that (1) the reviews focus on the environmental effects of construction and operation of a reactor, or reactors, that have characteristics that fall within the postulated site parameters, and (2) the reviews need not include an assessment of benefits (for example, need for power). The environmental reviews of COL applications that reference an ESP are limited to consideration of (1) information to demonstrate that the design of the facility falls within the parameters specified in the ESP, (2) any significant environmental issue not considered in any previous proceeding on the site or design, and (3) any new and significant information for issues related to the impacts of construction and operation of the facility that were resolved in the ESP proceeding. Appendix A provides guidance on the ESRPs that are appropriate for evaluating various types of applications.

The NRC has prepared a GEIS that covers applications for operating license renewal (LR) under 10 CFR 54 (NRC 1996). When a LR application is received, the NRC staff prepares a site-specific supplement to the GEIS. The supplement addresses a set of environmental issues listed in 10 CFR 51, Appendix B. Because of the special relationship between 10 CFR 51, Appendix B, the GEIS, and a site specific LR EIS, a set of ESRPs has been prepared specifically to assist the staff in environmental reviews related to license renewal. These ESRPs are in NUREG-1555, Supplement 1. **Information in the GEIS for license renewal, for example, the impact categorization approach (i.e., SMALL, MODERATE, and LARGE) may also be used in the preparation of NEPA documents prepared in conjunction with other types of applications such as ESPs and COLs when it is appropriate to do so.**

A number of other NRC actions require environmental reviews, including issuance of limited work authorizations (10 CFR 50.10(e)(1) to (e)(3), 10 CFR 52.24(c), and 10 CFR 52.91), early partial decisions (10 CFR 2, Subpart F; 10 CFR 100.10; and 10 CFR 100.20), and pre-application early reviews of site suitability issues (10 CFR 50, Appendix Q; and 10 CFR 100.10). The staff may refer to the appropriate ESRPs in this document for guidance in performing these reviews. NRC's Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-203, Revision 1, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues" (NRC 2004b), also guides staff in performing environmental reviews associated with applications involving nuclear reactors .

The ESRPs (1) provide specific instructions to the NRC staff responsible for conducting environmental reviews, (2) provide detailed descriptions of the manner in which the NRC reaches judgments on the kinds of environmental impacts caused by construction and operation of nuclear power plants, and (3) specify the means for determining the significance of these impacts. Use of ESRPs by the NRC staff in the environmental review process will ensure the following:

- Data essential to a specific environmental review and subsequent decisionmaking process are reviewed.
- Appropriate consideration, including coordination and consultation, is given to requirements of other Federal, State, regional, local, and affected Native American tribal agencies applicable to a particular environmental review.
- The analysis and evaluation procedures for review of a given technical area are standardized, thus achieving uniformity of approach.
- Each impact assessment concentrates on review of the potential environmental impacts of significance, and analysis of irrelevant data or of insignificant impacts is minimized.
- The methods to be used for analysis and staff judgments are objective and based on sound analytical procedures.

The ESRPs have been prepared for an EIS outline that embraces the range of environmental factors and site-specific environmental conditions expected for the majority of nuclear power plant applications. Conditions will occur from time to time that do not fall within the ESRP outline. The ESRPs permit the inclusion of such conditions in the environmental review.

Organization of the Environmental Standard Review Plans

The ESRPs are numbered as sections of 10 chapters. These chapters form a general outline for an EIS or supplement. The chapters are

- 1 Introduction
- 2 Environmental Description
- 3 Plant Description
- 4 Plant Construction Impacts
- 5 Plant Operation Impacts
- 6 Environmental Monitoring
- 7 Impacts of Postulated Accidents
- 8 Need for Power
- 9 Alternatives
- 10 Environmental Consequences

These chapters may be logically considered in three groups. Chapters 1 through 3 are descriptive in nature. They guide the staff's review of (1) the regional setting for the proposed action, (2) the detailed description of the site and its environment, and (3) the plant and the detailed description of those features of the plant that are most likely to affect the environment. Chapters 4 through 7 are related to the technical analyses of impacts. They guide the staff's review of potential environmental impacts associated with construction and operation of the plant. Finally, Chapters 8 through 10 are related to the overall evaluation of the proposed action. They guide the staff's review of the need for power, compare the proposed action with alternatives, and summarize the conclusions related to the proposed action.

In-text references to ESRPs, such as "ESRP Chapter 3," refer to the entire chapter (all sections), while "ESRP 3.0," for example, refers only to the specific ESRP 3.0.

The format of the ESRPs in this document conforms to the format of NUREG-0800, the NRC's *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants* (NRC 1987) and subsequent updates. The ESRP format consists of the following six sections:

- I. Areas of Review
- II. Acceptance Criteria
- III. Review Procedures
- IV. Evaluation Findings
- V. Implementation
- VI. References

Areas of Review describes the purpose and scope of the review for which the ESRP provides guidance. It includes a list of review interfaces. These interfaces define the expected flow of information in the review process. **Acceptance Criteria** provides guidance on determining the acceptability of the applicant's submission with respect to the topic under review. **Review Procedures** describes the methods that the staff should use in conducting the review. The level of detail in the description of methods varies among ESRPs. **Evaluation Findings** provides guidance on how to summarize the conclusions of the review. This guidance frequently includes samples of the types of statements that should be included in an EIS. **Implementation** contains a standard statement that describes how the ESRP is expected to be used. Finally, the **References** section contains the bibliographic information related to material cited in the ESRP.

Each ESRP contains a list of data and information needs under **Areas of Review**. In many cases, a likely source of an item is indicated in parentheses or brackets at the end of the item identified in the list. Reviewers may need to search for items when the item is not found in the likely source, or when a likely

source is not listed. In these cases the following sources of information should be considered, as appropriate:

- applicant's ER
- previous NRC final environmental impact statements (FEISs)
- applicant's safety analysis report (SAR) or updated final SAR
- NRC Safety Evaluation Reports (SERs)
- generic NRC EISs, especially NUREG-1437 and NUREG-0586, Supp. 1
- other Federal agencies, including other Federal agency EISs
- State agencies.

Information in databases maintained by other Federal agencies may be accessible through the NRC Geographical Environmental & Siting Information System (GEN&SIS).

Information that is general to all ESRPs is included in this Introduction and should be regarded as though it were in each ESRP. Although the intent of the ESRPs is that they be used collectively in reviewing ERs submitted with applications, they may also be used individually. The information in this Introduction must be considered when an ESRP is used individually.

Changes in the Environmental Standard Review Plans

Each ESRP has been prepared with regard for the NRC's obligations under NEPA and applicable interpretations of the Act, including, for example, the Calvert Cliffs decision (1971) regarding consideration of nonradiological environmental impacts. The contents of Regulatory Guide 4.2, Rev. 2, *Preparation of Environmental Reports for Nuclear Power Stations* (NRC 1976) and Regulatory Guide 4.7, Rev. 2, *General Site Suitability Criteria for Nuclear Power Stations* (NRC 1998) were considered in preparing each ESRP, but were not a constraint in developing the data or information requirements. Thus, the overall scope of data and information considered in these ESRPs is generally consistent with the guidelines of Regulatory Guides 4.2 and 4.7.

Since 2000, there have been many changes to the regulatory environment in which the NRC and its licensees operate. New environmental laws and regulations have been established, policies and procedures resulting from decisions of courts and administrative hearing boards have been changed, and the types of authorizations, permits, and licenses issued by the NRC have been changed. Some of these changes and their impacts on the ESRPs are highlighted in the paragraphs that follow.

- **Early Site Permits, Standard Design Certifications, and Combined Licenses**

The original ESRPs were prepared to guide staff in their review of ERs prepared by applicants for CPs for nuclear power plants and in preparing the NRC EISs related to the proposed actions. At that time, CPs and OLs for nuclear power plants were issued under 10 CFR 50. Although CPs and OLs may still be issued under 10 CFR 50, other licensing options have been made available through 10 CFR 52. These options include

- (1) **Subpart A, Early Site Permits**, which provides for approval of a site for one or more nuclear power facilities separate from an application for a standard design certification or COL for such a facility. Information on ESP Generic Issues is posted on the NRC web site.
- (2) **Subpart B, Standard Design Certifications**, which provides for certification of a standard reactor design for nuclear power facilities separate from an application for an ESP or COL for such a facility.
- (3) **Subpart C, Combined Licenses**, which provides for issuance of a COL for construction and operation of a nuclear power facility at a specific site. Information on COL applications is posted on the NRC web site.

Environmental reviews of ESP and COL applications are covered by the procedures contained in this document. A benefits assessment is required for a COL, but not for an ESP. An ESP applicant who is submitting a benefits assessment in the ESP application only needs to reference the ESP assessment rather than resubmitting a benefits assessment when preparing a COL application. Appendix A provides guidance related to the scope of environmental reviews for these types of applications.

- **Environmental Justice**

The guidance in **NRC's 2004 environmental justice policy statement (69 FR 52040)** is reflected in this document. ESRP 2.5.4 contains procedures for identifying and describing minority and low-income populations that could be impacted by a proposed action. ESRPs 4.4.3 and 5.8.3 cover the subsequent staff assessment and evaluation of specific impacts for plant construction and operation, respectively. In addition, wording changes in other ESRPs reflect NRC's commitment to address environmental justice issues **in the context of its NEPA responsibilities**.

- **Yellow Creek Decision**

In October 1978, the Atomic Safety and Licensing Board, in a partial initial decision on environmental and site suitability matters, sanctioned a Limited Work Authorization (see 10 CFR 50.10(e)) for the Tennessee Valley Authority's Yellow Creek facility (7 NRC 215 [1978]). In that partial initial decision, subsequently upheld by the Atomic Safety and Licensing Appeal Board (8 NRC 702 [1978]), the Licensing Board held that the NRC authority does not extend to matters within the jurisdiction of the U.S. Environmental Protection Agency (EPA). More specifically, the NRC authority is limited for those matters expressly assigned to the EPA by the Federal Water Pollution Control Act Amendments (FWPCA) of 1972. According to the Appeal Board, "The role of the NRC is one of factoring anticipated water pollution into its NEPA benefit-cost balance analyses on proposed nuclear plants."

The rulings of the Licensing and Appeal Boards have been factored into the ESRPs that are related to water issues. The ESRPs that are in this document related to water quality contain procedures to

identify and evaluate potentially adverse impacts associated with nuclear power plant construction and operation. The text reflects the NRC's limited role in this area.

- **Open Access to Transmission Lines and Economic Deregulation**

Recent changes in the economic regulation of utilities have expanded the options to be addressed in consideration of the need for power in EISs required by 10 CFR 51, Appendix A. Regulatory agencies in some States have initiated the process of economic deregulation. The effects of these changes on environmental review procedures are likely to be significant, especially with respect to the definitions of demand, service areas, and benefits. They are also likely to be significant with respect to selecting and considering alternatives.

The ESRPs related to the need for power (ESRPs 8.1 through 8.4), consideration of alternatives (ESRPs 9.1 through 9.4), and benefit-cost balance (ESRPs 10.1 through 10.4.3) have been modified to facilitate environmental reviews of applications that fall outside the bounds of the traditional structure of regulated utilities. However, economic deregulation is likely to continue to evolve; standard procedures for environmental reviews in an unregulated, open access regulatory arena have neither been developed nor stood the test of time. The ESRPs in this document provide guidance, but may not be appropriate for all reviews. If the NRC is faced with an application of this sort, the reviewers should review the current Commission policy before starting the review.

- **Severe Accident Mitigation Alternatives**

At the time the original ESRPs were published in 1978, the NRC staff EISs did not consider alternatives to mitigate the consequences of severe accidents. Current NRC policy developed after the Limerick decision (Limerick Ecology Action vs. NRC, 869 F.2d 719 [3rd Cir. 1989]) requires consideration of design alternatives to mitigate the consequences of severe accidents in EISs prepared at the OL stage. Consideration of severe accident mitigation alternatives (SAMAs) is required at the LR stage for the plants for which a site-specific SAMA has not been included in an EIS or supplemental EIS.

In SECY-91-229, "Severe Accident Mitigation Design Alternatives for Certified Standard Designs," identifies the treatment of the design-related SAMAs or SAMDAs. Should a COL application reference a certified design, then the staff's design-related SAMA review is focused on whether the site characteristics are within the site parameters specified in the SAMDA evaluation. SAMDA evaluations were included in an Environmental Assessment for each design certification rule.

Design alternatives to mitigate the consequences of severe accidents were included in the Watts Bar Supplemental Final EIS (NRC 1995). ESRP 7.3 has been prepared to guide staff in the consideration of SAMAs.

- **License Renewal**

Consideration of the operating license renewal process is discussed separately in Supplement 1 to this document.

New and Significant Information

The staff may use the information and conclusions from a previous environmental review under the appropriate circumstances. Before using such information, the staff must determine that the information is applicable to the current review and that it is still valid. In some cases, the earlier information may have been developed with the intent of supporting the current review. Examples include early site permits (ESPs), limited work authorizations, and Early Partial Decisions on Site Suitability Issues under 10 CFR 2, Appendix F. If previously developed environmental information will be used in an environmental review, the staff must explain in the EIS how, and to what extent, the information is applicable to the current review.

In order to use information and conclusions from a previous environmental review without modification, the staff must determine that there is no significant new information regarding the subject evaluation and impacts. When significant new information is not found in an area, a statement should be included in the EIS that (1) briefly describes the search for and evaluation of new information and states that no new information was identified or none of the new information was determined to be significant and (2) briefly summarizes the conclusion from the previous environmental review that the staff is adopting. If the staff finds that there is significant new information regarding the previous evaluation of the impacts to a resource, then it must integrate this information with the conclusions from the previous review. This section describes the search for new information, evaluation of the significance of new information, and the treatment of significant new information when found.

It is incumbent on the staff to initiate a process to become aware of new information that could have a bearing on the environmental aspects of the application before asserting that there is no new information. The process should consider

- the applicant's environmental report (ER). Applicants are required by 10 CFR 51.45(c) to provide sufficient data to aid the Commission in its development of an independent analysis. In reviewing the applicant's ER, consider the applicant's process for discovering new information and for evaluating the significance of new information that is found. Is the process adequate to ensure a reasonable likelihood that the applicant would be aware of new information, if it existed? In addition, see below for a further discussion of the particular case of a combined license (COL) application referencing an ESP.
- records of public meetings and correspondence related to the application. Compare information presented by the public in conjunction with the current review with information considered in the previous environmental review. Is the information "new" in the sense that it was not available when the staff reached its earlier conclusions?

- environmental quality standards and regulations. Have the applicable environmental quality standards and regulations changed since the analysis leading to the earlier conclusions? If so, do the changes affect the NRC evaluation of the current application?
- technical literature. Does recent technical literature contain information that would alter the earlier conclusions? Does the recent literature indicate that there may be environmental impacts related to nuclear power plant construction or operation that were not considered in the earlier evaluation?

When significant new information is identified for a previously evaluated issue, reconsideration of conclusions regarding the impacts for that issue is limited in scope to assessment of the relevant new information. The scope of the assessment does not include review of other facets of the issue that are not affected by the new information. Rather, the new information should be used to develop the scope of precisely defined environmental issues. After the issues have been defined, the significance level of each issue should be determined using the significance level definitions in 10 CFR Part 51, Subpart B, Table B-1. Mitigation measures should be identified and considered for each issue for which there is an environmental impact. The consideration of mitigation measures should be proportionate to potential impacts.

If the significance level of the environmental issue affected by significant new information is MODERATE or LARGE, the reviewer should prepare a statement for inclusion in the appropriate section of the SEIS that includes a concise description of the new information (including the source(s) of the information) and how the information applies to the applicant's proposed plant. The statement should give the significance level of the potential impacts, and it should list those mitigation measures that are considered appropriate. The reviewer should also provide the environmental project manager with a summary statement and a list of references cited in the review.

Significant New Information for a COL That References an ESP

A COL applicant may reference an ESP. In this situation, the NRC has established a unique relationship between two major Federal actions - the ESP and COL. The conclusions from the ESP EIS may be used in the COL application and considered by the NRC staff. The discussion that follows is applicable only to the special circumstances involving the referencing of an ESP in a COL application. However, it provides insights that can be useful in other situations in which the applicant or the staff intends to use information from a previous environmental review.

In reviewing an ESP application, the NRC staff prepares an EIS to inform the Commission's decision, determine whether there is an obviously superior alternative site, and, to the extent addressed by the applicant, disclose the environmental impacts associated with constructing and operating one or more nuclear units. Consequently, when a COL applicant references an ESP for the proposed site, the ESP EIS is an important starting point for preparing the COL applicant's ER. Note that it is the EIS (and not the applicant's ER) that provides the basis for issuing the ESP. As such, the EIS prepared for an ESP would resolve issues within certain bounding conditions, and such issues are afforded finality at the COL stage, provided that no "new and significant" information has become available on the issue. By

contrast, if a given environmental issue was not resolved at the ESP stage, either because sufficient information was not available to permit resolution or because the ESP applicant was permitted to defer the issue (e.g., the benefits assessment), the COL applicant must address the issue in its COL ER. A COL ER must also demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP. In addition, the COL ER must demonstrate that all environmental terms and conditions of the ESP will be satisfied by the date of issuance of the COL. Terms or conditions that cannot be satisfied before issuance of the COL must be included as terms or conditions in the COL.

The NRC is ultimately responsible for completing any review required to fulfill its responsibilities under the National Environmental Policy Act, for example, activities undertaken by the NRC staff to ensure that an issue that was resolved for the ESP remains resolved. However, the COL applicant (the proponent for the action) is expected to initially identify whether new and significant information has become available for such an issue. Thus, a COL applicant must have a reasonable process to ensure that it becomes aware of new and significant information that may bear on the NRC conclusion for the ESP, and should document the results of this process in an auditable form for issues for which the COL applicant does not identify new and significant information. Issues for which the COL applicant does identify new and significant information must be addressed in the COL ER. Under 10 CFR 51.70(b), the NRC is required to independently evaluate and be responsible for the reliability of all information used in the EIS, including an EIS prepared in conjunction with a COL application. Toward that end, the NRC staff may (1) inquire about changes to information disclosed in an EIS for an ESP that is referenced in a COL application, and (2) identify new information that may affect the assumptions, analyses, or conclusions in the ESP EIS.

In the context of a COL application that references an ESP, the NRC staff defines “new” (in new and significant information) as information that was both (1) not considered in preparing the ESP ER or EIS (as may be evidenced by references in these documents, applicant responses to NRC requests for additional information, comment letters, etc.) and (2) not generally known or publicly available during the preparation of the EIS (such as information in reports, studies, and treatises). This new information may include (but is not limited to) specific design information that was not available at the time of the ESP application (especially where the design interacts with the environment), or information that was in the ESP application, but has changed by the time of the COL application [e.g., a change in the regional socioeconomic profile resulting from a natural event (e.g., Hurricane Katrina)]. New information may or may not also be “significant.”

The NRC expects the COL applicant referencing an ESP to have a reasonable, auditable process to ensure that the applicant becomes aware of new and significant information, and to describe the process in its COL ER. This process description should include (1) the methods that the COL applicant uses to ensure that it is cognizant of new information, if it exists, and (2) the process for evaluating the significance of new information, if found. Methods to ensure cognizance of new information include the following examples:

- reviewing environmental monitoring results
- reviewing related scientific literature
- surveying environmental professionals familiar with the site environs (for example, the environmental and operations staff of a nearby nuclear or other industrial facility)
- exchanging information within the industry through peer groups and industry organizations
- consultations with academicians knowledgeable of the local environment
- consultations with Federal, State, Tribal, and local environmental, natural resource, permitting, and land use agencies
- verifying that the assumptions and representations made in the ESP ER are still valid
- verifying that the NRC staff's assumptions in the ESP EIS are still valid
- reviewing information needs in the Environmental Standard Review Plan

The description of the process for evaluating the significance of new information should also include the organizational procedures for handling reports of new information and the criteria used to determine the applicability of such information. Detailed supporting information need not be included in the ER, but should be available in auditable form for review by the NRC staff. Such supporting information may include the following:

- qualifications of participants involved in the process, their organizational affiliations, how they interact among themselves, and the role they serve in the process
- consultations with academicians and Federal, State, Tribal, and local environmental, natural resource, permitting, and land use agencies
- new information identified and the assessment of its significance (with information that the applicant determines to be both new and significant submitted in the ER, as required by 10 CFR 51.50(c)(1)(iii)).

If the staff determines that new information that was not submitted in a COL application is significant, it may send a request to the applicant to submit the information.

The relationship between the environmental review of an ESP application and that of a COL application referencing the ESP may be explained by analogy to the environmental review process for license renewal. In fact, the process described above for a COL applicant referencing an ESP is consistent with the well-established process for reviewing operating license renewal applications. In particular, the GEIS is similar to the ESP EIS in that both were prepared prior to the submission of license renewal and COL applications, respectively. Likewise, an EIS prepared in connection with the environmental review of a COL application is analogous to a site-specific supplement to the GEIS prepared for a license renewal application. For additional information, the attributes of the process to identify new and significant information for license renewal applications are described in Regulatory Guide 4.2, Supplement 1, "Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses," dated September 2000.

For matters resolved at the ESP stage, if there is no new and significant information for issues that were resolved in the ESP proceeding, the NRC staff will rely upon ("tier off") the ESP EIS, and will disclose

its conclusion for matters covered in the environmental review for the ESP EIS. Toward that end, the COL EIS will provide a summary discussion of the NRC staff's conclusion from the ESP EIS. This approach will ensure that the COL EIS is complete.

General Instructions

The following instructions, applicable to most of the ESRPs, are provided here to avoid repetition in each plan:

- **Project Overview.** As an initial step in each individual environmental review, the reviewer is expected to develop an understanding of the entire project proposed by the applicant. The purpose of this instruction is to ensure that reviewers put their individual reviews in perspective with the overall project and concentrate their efforts on issues of substance. This general project review is to be conducted as the first step (acceptance review phase) of the overall environmental review process and is to be completed before developing requests for additional information.
- **Internal Review Coordination.** The EPM is the central point of contact for all reviewers. Although each ESRP represents a discrete segment of the NRC's overall environmental review, no review can be completed without coordination with related reviews. For example, the technical analysis ESRPs (Chapters 4 through 7) rely on the descriptive chapters (1 through 3) for background information. All reviewers are instructed to maintain close communication with other reviewers throughout the review procedure. With very few exceptions, the reviews on a given project are conducted in parallel; thus, completed "output" of related reviews may not be available to reviewers before their own environmental review is initiated. A safety analysis review leading to a safety evaluation report is conducted concurrently with the environmental review.
- **External Review Coordination.** The EPM usually initiates contacts with outside groups and must be informed of all such contacts. Each reviewer is expected to seek out and be aware of any related technical analyses and assessments in areas of concurrent jurisdiction, such as endangered species and air and water quality impacts. Particular attention should be given to those analyses and assessments prepared under provisions of memoranda of understanding or agreement between the NRC and other Federal, State, regional, local, and affected Native American tribal agencies. When so directed by the specifics of the memoranda of understanding, the reviewer participates with officials in developing the impact assessments directed by these ESRPs. Working through the EPM, the reviewer is responsible for resolving any differences of opinion between staff analyses and analyses of other agencies. When resolution of differences is not possible, the reviewer ensures that all viewpoints are addressed in the EIS or that the specific provisions of the memoranda of understanding for this contingency are followed.
- **Consultation with Other Agencies.** The environmental reviews leading to preparation of EISs involve interactions with other Federal, State, local, regional, and affected Native American tribal agencies. The agencies that may be consulted include, but are not limited to, the U.S. Fish and Wildlife Service and NOAA Fisheries Service with respect to threatened and endangered species,

NOAA Fisheries Service with respect to essential fish habitat, the State Historic Preservation Officer (SHPO) and local and affected Native American tribal agencies related to historic and archeological resources that are eligible for listing on the National Register of Historic Places, relevant State agencies relative to consistency determinations under the Coastal Zone Management Act, and relevant State agencies relative to determination that the proposed action conforms to applicable State Implementation Plans under the Clean Air Act. These consultations should be started as soon as possible in the review process and should be made through the EPM.

- **Consultation With the Applicant.** The analysis procedures for many of the ESRPs direct the reviewer to “consult with the applicant” in certain specified circumstances. All consultations of this nature are made through the EPM.
- **Site Visit.** In most environmental reviews, reviewers benefit from one or more visits to the site of the applicant’s proposed action and to alternative sites. These visits give the reviewer first-hand knowledge of the location and position of the applicant’s proposed facilities within the site. It also gives the reviewer an opportunity to observe the environment in the vicinity of the site.
- **Assignment of Level of Impact.** To guide its assessment of environmental impacts of a proposed action or alternative actions, NRC has established a standard for quantifying environmental impacts using CEQ guidance (40 CFR 1508.27). Using this approach, the NRC established three significance levels: SMALL, MODERATE, or LARGE. The significance levels are used to characterize environmental impacts in NRC EISs. The definitions of the significance levels are as follows:

SMALL – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.
- **Depth of Review.** Where an analysis procedure, as outlined in an ESRP, has been conducted by an applicant and reported in the applicant’s ER, the applicant’s work is evaluated in sufficient depth to permit independent verification of the analysis and its results. The reviewer may conduct independent analyses, if necessary.
- **Consideration of Mitigation.** Mitigation measures should be considered in proportion to the level of the impact when a potentially adverse impact is identified. Statements related to mitigation should describe the potential effectiveness of the mitigation measures considered and state whether mitigation measures are warranted or not.

- **Best Management Practices.** The analysis procedures in ESRPs often direct the reviewer to evaluate the applicant's commitments to use construction or maintenance practices that limit adverse impacts. These practices, often referred to as best management practices (BMPs), are construction activities that tend to mitigate adverse environmental impacts. For example, BMPs are chosen to prevent or control water pollution and minimize soil erosion resulting from land disturbance or other land-management activities. Examples of construction activities recognized as BMPs can be found in a number of sources. BMPs are also generally acceptable when they have been used by another Federal agency.
- **Findings.** The sections of an EIS that summarize findings for the NRC decisionmakers should reflect the results of a "consensus" agreement among the reviewers. This requires input from the reviewer, the EPM, and any other reviewers who would be affected by the findings.
- **Documentation.** Each reviewer maintains documentation, logs, and other records to ensure that records of contacts with outside agencies and organizations are maintained.
- **Definitions.** Use of the following terminology applies only to the environmental review process. Terms such as plant and station as used in an EIS continue to reflect an applicant's choice of terms to identify the proposed project (e.g., Calvert Cliffs Nuclear Power Plant, Oconee Nuclear Station, Unit 1).

STATION: All facilities (reactors, control buildings, intakes, discharges, etc.) that are located or are proposed to be located on the applicant's site. Generally, the station includes everything located on the applicant's property that surrounds the proposed or existing reactors. In some cases, intakes and discharges may be beyond this property line, but are considered part of the station. Transmission lines and their associated facilities are not considered part of the station. Existing or proposed facilities not associated with the production of electricity (e.g., a visitor center or a fish hatchery) are considered part of the station.

PLANT: The proposed nuclear reactors, steam-electric systems, intakes, discharges, and all other on-station facilities involved with the production of electricity. Plant can be more than one reactor steam-electric system, but does not include existing units already in operation. Transmission lines and other off-station facilities are not part of the plant.

UNIT: One reactor steam-electric system. Generally, unit is used only when the applicant is proposing a multi-unit plant.

FACILITY: Any identifiable part of the station or associated portions of the applicant's system, both existing and proposed. Examples: The visitor center is a facility. A substation is a facility. An intake system could be a facility (if separated from the remainder of the plant).

PROJECT: Everything the applicant is proposing. This includes transmission lines, access roads, communications stations, etc.

As used in these ESRPs, mitigation and avoidance have the following meanings:

MITIGATION: Impact mitigation is the process of modifying a design or practice (either a construction practice or an operating procedure) to lessen its environmental impact. Successful mitigation may reduce the impact level characterization under NRC's SMALL/MODERATE/LARGE impact characterization approach. Mitigation measures should be considered even for impacts considered to be SMALL.

AVOIDANCE: Impact avoidance is the process of using an alternative design or practice that avoids the identified adverse impact. Note that alternatives may have adverse impacts of their own and must be evaluated to ensure that any such impacts can be successfully mitigated.

Related Documents

These ESRPs are only one of several sets of procedures used by the NRC to meet its responsibilities under NEPA. Other documents that provide guidance relevant to environmental reviews include

- Office of Nuclear Reactor Regulation Office Instruction No. LIC-203, Revision 1, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues" (NRC 2004b)
- Regulatory Guide 4.2, *Preparation of Environmental Reports for Nuclear Power Stations* (NRC 1976) and its Supplement 1, *Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses* (NRC 1999)
- Regulatory Guide 4.7, *General Site Suitability for Nuclear Power Stations* (NRC 1998)
- NUREG-1555, Supplement 1, *Standard Review Plans for Environmental Reviews for Nuclear Power Plants Supplement 1: Operating License Renewal* (NRC 2000b)
- NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants* (NRC 1987).
- RS-002, "Processing Applications for Early Site Permits" (NRC 2004a).

NRR Office Instruction No. LIC-203, Revision 1, establishes procedures and provides guidance related to preparing environmental assessments and considering environmental issues for licensing actions. Procedures and guidance in the office instruction specifically relate to the Coastal Zone Management Act, the Endangered Species Act, the National Historical Preservation Act, environmental justice, and the Fish and Wildlife Coordination Act.

Regulatory Guide 4.2 provides guidance to applicants on the preparation of ERs for nuclear power stations. This guidance is specifically intended for CP and OL applications submitted under 10 CFR 50.

However, Regulatory Guide 4.2 should provide reasonable guidance for preparing ERs for ESP and COL applications. Supplement 1 provides guidance for preparing supplemental ERs for license-renewal applications.

NUREG-1555, Supplement 1 contains guidance to the NRC staff on environmental reviews related to renewal of nuclear power plant operating licenses. These supplemental ESRPs are keyed directly to the NUREG-1437, *Generic Impact Statement for License Renewal of Nuclear Plants* (NRC 1996) and Regulatory Guide 4.2, Supplement 1. The approach in the supplemental ESRPs concentrates on establishing that the conclusions in NUREG-1437 remain valid for environmental issues that are classified as Category 1 issues in Table B-1 of 10 CFR 51 Subpart A Appendix B, and resolving Category 2 issues in the table. The approach also provides for consideration of significant new information on the environmental impacts of license renewal.

Regulatory Guide 4.7 provides applicants with guidance in the initial stage of selecting potential sites for nuclear power stations. It discusses the major site characteristics related to public health and safety and the environmental issues considered in determining the suitability of sites for light-water-cooled reactors. Sites that appear to be compatible with the general criteria have to be examined in greater detail before they can be considered “candidate” sites (i.e., sites that are considered in selecting a “proposed” or “preferred” site).

NUREG-0800 deals primarily with issues related to safety. It contains several sections on the evaluation of the consequences of accidental releases of radioactive material. Although the emphasis of the analyses conducted under the standard review plans (SRPs) is somewhat different than that of the analyses conducted under the ESRPs, the results of the SRP analyses are relevant to environmental reviews. For example, the reviews conducted under ESRP Chapter 7 draw upon the results of reviews conducted under the SRP.

RS-002 describes the process for reviewing an ESP application and provides guidance for completing the steps in the process.

References

10 CFR 2, Subpart F, “Additional Procedures Applicable to Early Partial Decisions on Site Suitability Issues in Connection with an Application for a Permit to Construct Certain Utilization Facilities.”

10 CFR 50, “Domestic Licensing of Production and Utilization Facilities.”

10 CFR 50, Appendix Q, “Pre-application Early Review of Site Suitability Issues.”

10 CFR 50.10, “License required.”

10 CFR 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”

10 CFR 51, Appendix A, “Format for Presentation of Material in Environmental Impact Statements.”

10 CFR 51, Appendix B, “Environmental Effect of Renewing the Operating License of a Nuclear Power Plant.”

10 CFR 51.10, “Purpose and scope of subpart; application of regulations of Council on Environmental Quality.”

10 CFR 51.20, “Criteria for and identification of licensing and regulatory actions requiring environmental impact statements.”

10 CFR 51.21, “Criteria for and identification of licensing and regulatory actions requiring environmental assessments.”

10 CFR 51.22, “Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.”

10 CFR 51.27, “Notice of intent.”

10 CFR 51.28, “Scoping—participants.”

10 CFR 51.29, “Scoping—environmental impact statement and supplement to environmental impact statement.”

10 CFR 51.45, “Environmental report.”

10 CFR 51.50, “Environmental report—construction permit, early site permit, or combined license stage.”

10 CFR 51.70, “Draft environmental impact statement—general.”

10 CFR 52, “Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants.”

10 CFR 52.24, “Issuance of early site permits.”

10 CFR 52.91, “Authorization to conduct site activities.”

10 CFR 54, “Requirements for Renewal of Operating Licenses for Nuclear Power Plants.”

10 CFR 100.10, “Factors to be considered when evaluating sites.”

10 CFR 100.20, “Factors to be considered when evaluating sites.”

40 CFR Chapter V, “Council on Environmental Quality.”

69 FR 52040. August 24, 2004. “Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions.” *Federal Register*.

Atomic Energy Act of 1954, as amended, 42 USC 2011 et seq.

Calvert Cliffs’ Coordinating Committee, Inc. v. Atomic Energy Commission, 449 F. 2d 1109 (D.C. Cir. 1971).

Clean Air Act, as amended, 42 USC 7401, et seq.

Coastal Zone Management Act, as amended, 16 USC 1451 et seq.

Endangered Species Act, as amended, 16 USC 1531 et seq.

Energy Reorganization Act, as amended, 42 USC 5801 et seq. (1974).

Federal Water Pollution Control Act (FWPCA), as amended, 33 USC 1251 et seq. (also known as Clean Water Act).

Fish and Wildlife Coordination Act, as amended, 16 USC 661, et seq.

Limerick Ecology Action v. NRC, 869 F. 2d 719 [3rd Cir. 1989].

National Environmental Policy Act of 1969 (NEPA), as amended, 42 USC 4321 et seq.

National Historic Preservation Act, as amended, 16 USC 470 et seq.

Tennessee Valley Authority (Yellow Creek nuclear plant Units 1 and 2), LBP-78-7, 7 NRC 215 (1978).

Tennessee Valley Authority (Yellow Creek nuclear plant Units 1 and 2), ALAB-515, 8 NRC 702 (1978);

U.S. Nuclear Regulatory Commission (NRC). 1976. *Preparation of Environmental Reports for Nuclear Power Stations*. Regulatory Guide 4.2, Rev. 2, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1987. *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*. NUREG-0800, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 2002. *Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities*. NUREG-0586, Supplement 1, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1995. *Final Environmental Impact Statement Related to the Operation of Watts Bar Nuclear Plant, Units 1 and 2*. NUREG-0498, Supplement No. 1, U.S. Nuclear Regulatory Commission, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*. NUREG-1437, Volumes 1 and 2, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1998. *General Site Suitability for Nuclear Power Stations*. Regulatory Guide 4.7, Rev. 2, Washington, D.C.

U.S. Nuclear Regulatory Commission (NRC). 1999. *Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses*. Regulatory Guide 4.2, Supplement 1, Washington, D. C.

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PAPERWORK REDUCTION ACT STATEMENT

The information collections contained in the Environmental Standard Review Plan are covered by the requirements of 10 CFR Part 51, and were approved by the Office of Management and Budget, approval number 3150-0021.

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