



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

4.6 MEASURES AND CONTROLS TO LIMIT ADVERSE IMPACTS DURING CONSTRUCTION

REVIEW RESPONSIBILITIES

Primary— Organization responsible for the review of environmental impact information

Secondary—None

I. AREAS OF REVIEW

This environmental standard review plan (ESRP) directs the staff's summarization of potential adverse environmental impacts of construction and measures and controls to limit adverse impacts committed to by the applicant, and the staff's evaluation of those measures and controls. The scope of the review directed by this plan includes evaluating measures and controls for feasibility and adequacy in limiting impacts. The result of this review should be a table listing the potentially adverse impacts, the applicant's commitments, the basis and need for an environmental protection plan, and the staff's evaluation.

Review Interfaces

The reviewer for this ESRP should obtain input from and provide input to the reviewers for the following ESRPs, as indicated:

- ESRPs 4.1 through 4.5. Obtain lists of adverse impacts and measures and controls to limit adverse impacts committed to by the applicant. Obtain any new and significant information, if applicable, related to ESRP 4.6.

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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- ESRP 6.7. Obtain a list of adverse impacts during construction so that monitoring plans may be designed to quantify and limit such impacts to the extent possible.
- ESRPs 9.4.1 through 9.4.3. Provide input to the process of evaluating measures and controls, including any environmental protection plan, to limit adverse impacts at the applicant's proposed site.
- ESRP 10.1. Provide a list of adverse environmental impacts at the applicant's proposed site that cannot be mitigated or for which mitigation is not practical.
- ESRPs 10.2 and 10.3. Provide a list of the irreversible and irretrievable resource commitments that would result from the proposed plant. These resource commitments and any unavoidable adverse construction impacts identified as input to ESRP 10.1 should be provided to the reviewer of ESRP 10.3 for the evaluation of short-term versus long-term uses and impacts of the proposed action.
- Interface with Environmental Project Manager (EPM). Consult with the EPM on any adverse impacts discovered in the reviews of ESRP Chapter 4.0 that are likely to result from construction of the proposed plant and that are identified through the analysis. Potential mitigation measures and their merits should be presented as they are identified.

Data and Information Needs

The type of data and information needed will be affected by site- and station-specific factors, and the degree of detail should be modified according to the anticipated magnitude of the potential impacts. The following data or information should be obtained:

- A staff listing of potentially adverse impacts should be developed in consultation with the reviewers of other ESRPs related to plant construction and with the reviewers of ESRPs related to consideration of alternatives.
- Data and information related to the applicant's commitments to measures and controls to limit potential impacts should consist of the following three elements: (1) identification of the impact, (2) the planned control program, including monitoring, and (3) the control procedures. The following elements may be found in the applicant's environmental report (ER):
 - noise
 - erosion
 - dust
 - traffic
 - effluents and wastes
 - surface-water impacts
 - groundwater impacts
 - land-use protection/restoration

- water-use protection/restoration
- terrestrial ecosystem impacts
- aquatic ecosystem impacts
- socioeconomic impacts
- radiation exposure to construction workers
- other site-specific impacts.

II. ACCEPTANCE CRITERIA

Acceptance criteria for the summary of measures to monitor and control adverse impacts during construction are based on the relevant requirements of the following:

- 10 CFR 50.36b with respect to environmental conditions in an NRC license or permit for the protection of the nonaquatic environment. Such conditions can cover reporting, recordkeeping, and monitoring.
- 10 CFR 51, Appendix A to Subpart A, with respect to discussion of alternatives and mitigating measures to avoid or minimize adverse impacts.
- 10 CFR 52.24 with respect to issuing early site permits containing the conditions and limitations as the Commission deems appropriate and necessary.

Regulatory positions and specific criteria to meet the regulations identified above are as follows:

- Regulatory Guide 4.2, Rev. 2, *Preparation of Environmental Reports for Nuclear Power Stations* (NRC 1976) with respect to the inclusion of a construction-impact control program in an application.

Technical Rationale

The technical rationale for evaluating the applicant's commitments to measure and control adverse impacts during construction is discussed in the following paragraph:

Evaluation of the proposed action includes identification and evaluation of the potentially adverse impacts of plant construction. This review results in a summary of the potentially adverse impacts and lists the applicant's commitments to measures and controls to limit adverse impacts during construction. The applicant's commitments must be compared with the list of potentially adverse impacts identified by the staff and evaluated for efficacy to determine those impacts that cannot be avoided or mitigated. A list of those adverse impacts that cannot be avoided or mitigated should be provided to the reviewer of ESRP 10.1. Information to be included in an environmental protection plan attached to any license or permit should be documented.

III. REVIEW PROCEDURES

The reviewer's analysis should include identification and tabulation of potentially adverse construction impacts, identification of the applicant's commitments that limit and control these impacts, and comparison of applicant commitments with the staff's list of impacts needing mitigation. The reviewer should take the following steps:

- (1) Identify and tabulate the impacts of construction (see reviewers for ESRPs 4.1.1 through 4.5) that are of sufficient severity to need mitigation (i.e., measures and controls to limit the impact).
- (2) List the applicant's commitments for mitigating the impact.
- (3) Based on consultation with appropriate staff reviewers, identify the applicant commitments that will satisfy the staff's concerns for mitigation.
- (4) When it is determined that there are no applicant commitments to control or limit an adverse impact, consult with reviewers for the appropriate ESRPs 4.1 through 4.5, the reviewers for ESRPs 9.4.1 through 9.4.3, and the EPM to identify and evaluate available mitigation measure(s). Also note those impacts for which no appropriate measures and controls to limit the impact can be identified.
- (5) Prepare a table similar to that shown in Table 4.6-1 to compare potentially adverse impacts of construction with the applicant's commitments and identify those adverse impacts that cannot be mitigated or for which mitigation is not practical.

Table 4.6-1. Summary of Potentially Adverse Impacts of Construction

Impact	Impact Description	Applicant's Commitment	Staff Evaluation
Land-Use Impacts	impact 1	commitment a	evaluation α
	impact 2	commitment b	evaluation β
Hydrological and Water Use Impacts	impact 3	commitment c	evaluation γ
	impact 4		There are no practical measures for mitigation of this impact. The impact will be considered in the evaluation of unavoidable adverse environmental impacts.

Following the analysis above (Steps 1-5), the reviewer should seek confirmation that (1) the tabulated impacts are adverse and that measures and controls to limit the magnitude of the impact are required, (2) the measures and controls are reasonable and specific, and (3) benefits/costs have been considered. To do this, the reviewer should take the following steps:

- (1) Confirm that the construction impacts, when considered on a site-specific basis, are adverse and should be mitigated.
 - Make this determination through consultation with the appropriate reviewers for ESRPs 4.1 through 4.5, and take into account experience gained in the review of other projects having similar impacts.
 - Ensure that adequate documentation is available to support the staff conclusions with respect to the nature and severity of those impacts requiring mitigation.
- (2) Confirm that the selected measures and controls to limit each impact have been evaluated to verify that a practical level of mitigation can be achieved by the methods and controls to be applied.
 - Confirm that each measure and control is reasonable (i.e., involves methods and techniques that are appropriate and achievable on a site-specific basis).
 - Confirm that the measures and controls are specific, unambiguous, and are structured such that their application and results can be verified through subsequent field reviews and inspections.
- (3) Confirm that environmental, economic, and social costs of the available measures and controls to limit adverse impacts have been balanced against the expected benefits to be achieved.
 - Consult with the appropriate benefit-cost reviewers in conducting this portion of the evaluation. Benefit-cost reviews cannot be used as a basis for noncompliance with NRC regulations.
 - Note that when mitigation techniques do not lead to an improvement in the overall benefit-cost ratio and if mitigation is not required by law, the impact may be accepted without mitigation and considered in the overall project benefit-cost balancing.
- (6) Document any construction-related reporting, recordkeeping, and monitoring requirements that should be included in any environmental protection plan attached to the proposed license or permit.

IV. EVALUATION FINDINGS

The reviewer should prepare a summary of (1) adverse impacts of construction where measures and controls to limit the impacts can be applied, (2) the applicant's commitments to limit these impacts, and (3) the staff's evaluation of the potential adverse impacts and the applicant's measures and controls to limit adverse impacts. The results of this review will be used by the reviewer for ESRP 10.1 to describe the unavoidable adverse impacts of construction. The input to the environmental impact statement (EIS) should include:

- a summary of the potentially adverse impacts of construction
- a description of the applicant's commitments for measures and controls to limit adverse impacts
- the staff's evaluation of applicant's commitments related to each impact
- conditions that should be considered for inclusion in any environmental protection plan attached to the proposed license or permit.

V. IMPLEMENTATION

The method described in this ESRP should be used by the staff in evaluating conformance with NRC requirements, except in those cases in which the applicant proposes an acceptable alternative for complying with specified portions of the requirements.

VI. REFERENCES

10 CFR 50.36b, "Environmental conditions."

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

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

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.

PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.