



U.S. NUCLEAR REGULATORY COMMISSION

ENVIRONMENTAL STANDARD REVIEW PLAN

5.10 MEASURES AND CONTROLS TO LIMIT ADVERSE IMPACTS DURING OPERATION

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 potentially adverse environmental impacts of plant operation, measures and controls to limit adverse impacts of project operation 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 evaluation of those measures and controls proposed or committed to by the applicant 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 evaluations.

Review Interfaces

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

- ESRPs 5.1.1 through 5.8.3. Obtain lists of potentially adverse impacts of plant operation. Obtain any new and significant information, if applicable, related to ESRP 5.10.
- ESRP 5.2.1. Obtain a list of measures and controls to limit or minimize hydrologic alterations from the proposed action.
- ESRP 6.7. Obtain a list of those monitoring programs that will permit application of adequate measures and controls to limit adverse environmental impacts of plant operation.

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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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- ESRPs 9.4.1, 9.4.2, and 9.4.3. Provide a list of appropriate measures and controls, **including any environmental protection plan**, to limit adverse impacts so those measures and controls can be considered and evaluated.
- ESRP 10.1. Provide a list of those adverse environmental impacts 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 commitments of resources as determined by this point in the review process.
- Interface with Environmental Project Manager (EPM). Consult with the EPM on adverse impacts, as discovered in the reviews of ESRP Chapter 5.0, that are likely to result from operation of the proposed plant and are identified through the analysis. Present potential mitigation measures and their merits 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:

- staff listing of potentially adverse impacts
- the proposed control program
- the proposed control or operational procedures **including any environmental protection plan**
- the following impact information from the applicant's environmental report (ER):
 - noise
 - erosion
 - effluents and wastes
 - surface-water impacts
 - groundwater impacts
 - terrestrial ecosystem impacts
 - aquatic ecosystem impacts
 - socioeconomic impacts
 - cooling tower drift impacts
 - transmission corridor maintenance impacts
 - other site-specific impacts.

II. ACCEPTANCE CRITERIA

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

- 10 CFR 50.36b with respect to environmental conditions for 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 necessary 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 measures planned to reduce undesirable effects of station operation.

Technical Rationale

The technical rationale for evaluating the applicant's commitment to monitor and control adverse impacts during plant operation is discussed in the following paragraph:

Evaluation of the proposed action includes identification and evaluation of the potentially adverse impacts of plant operation. 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 operation. The applicant's commitments should 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 for 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 operational impacts requiring mitigation, identification of the applicant's commitments that limit and control these impacts, and comparison of the applicant's commitments with impacts requiring mitigation. The reviewer should take the following steps:

- (1) Identify and tabulate the operational impacts (see the reviewers for ESRPs 5.1 through 5.8) 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) Identify, based on consultation with appropriate staff reviewers, the applicant's commitments that will satisfy the staff's concerns for mitigation.
- (4) When it is determined that there are no appropriate applicant commitments to control or limit an adverse impact, the staff should consult with reviewers for the appropriate ESRPs 5.1.1 through 5.8.3, the reviewers for ESRPs 9.4.1 through 9.4.3, and the EPM to identify mitigation measures. Note those impacts for which no appropriate measures and controls to limit the impact can be identified.
- (5) Prepare a table similar to Table 5.10-1 to compare potentially adverse operational impacts with the applicant's commitments for measures and controls to limit the impacts. Identify adverse impacts that cannot be mitigated or for which mitigation is not practical.
- (6) Confirm that the operational 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 5.1.1 through 5.8.3.
 - Take into account experience gained from the review of operational data from other plants 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.
- (7) Confirm that the available measures and controls to limit each impact have been evaluated to verify that a practical level of mitigation can be achieved by these methods and controls.
 - 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 and unambiguous, and are structured so that their application and results can be verified through subsequent field reviews and inspections.
- (8) Confirm that environmental, economic, and social costs of the available measures and controls have been balanced against the benefits expected.
 - 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.

- 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.

(9) Document any operations-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

This review should summarize (1) adverse impacts of operation for which 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 potentially adverse impacts and the applicant's measures and controls to limit adverse impacts. The results of this review will also be used by the reviewer for ESRP 10.1 to describe the unavoidable adverse impacts of operation. The input to the EIS should include the following:

- a summary of the potentially adverse impacts of operation for which measures and controls to limit the impacts can be applied
- 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.

Table 5.10-1. Summary of Potentially Adverse Impacts of Operation

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.