



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

## 5.11 CUMULATIVE IMPACTS RELATED TO STATION OPERATION

### REVIEW RESPONSIBILITIES

Primary— Organization responsible for review of cumulative impacts

Secondary— None

### I. AREAS OF REVIEW

This environmental standard review plan (ESRP) directs the staff's summarization of potential cumulative environmental impacts associated with operational activities for the proposed project. The term *cumulative impact* is defined as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The preceding definition appears in the regulations of the Council on Environmental Quality (CEQ) implementing the National Environmental Policy Act (NEPA) (40 CFR 1508.7). NRC regulations state that 40 CFR 1508.7 will be used by NRC in implementing NEPA [10 CFR 51.14(b)].

### 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 cumulative impact information, including new and significant information, from the reviewers of ESRPs 5.1 through 5.9. The information should include a

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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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characterization of cumulative impacts using NRC's SMALL, MODERATE, LARGE terminology (see the Introduction).

- ESRPs 10.1 through 10.4. Provide cumulative impact information and impact characterizations to the reviewers of ESRPs 10.1 through 10.4.
- Interface with Environmental Project Manager (EPM). Consult with the EPM on any cumulative impacts characterized as MODERATE or LARGE. Potential mitigation measures and their merits should be identified as the EPM directs.

### 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 cumulative impacts. The following data or information should be obtained:

- Identification of past, present, and future Federal, non-Federal, and private actions that could have meaningful cumulative impacts with the proposed action.
- Identification of the geographic area to be considered in evaluating cumulative impacts.
- Information on cumulative impacts of relevant actions within the identified geographic area (from the reviewers of ESRPs 5.1 through 5.9).

## II. ACCEPTANCE CRITERIA

Acceptance criteria for the summary of cumulative impacts associated with proposed operational activities are the following:

- 10 CFR 51.10(a) with respect to NRC policy to voluntarily take account, subject to certain conditions, of the regulations of CEQ implementing NEPA. The CEQ regulations specify that an EIS discuss cumulative impacts [40 CFR 1508.25(c)(3)].

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 in an application of an assessment of (1) cumulative and projected long-term effects from the point of view that each generation is trustee of the environment for each succeeding generation, and (2) any cumulative buildup of radionuclides in the environment.

### Technical Rationale

The technical rationale for evaluating cumulative impacts associated with the applicant's proposed operational activities is discussed in the following paragraph:

Evaluation of the proposed action includes identification and evaluation of potential cumulative impacts associated with plant operation. This review results in a summary of the potentially cumulative impacts and the staff's characterization of the impacts using the NRC's SMALL, MODERATE, LARGE terminology.

### III. REVIEW PROCEDURES

The reviewer's analysis should include identification and tabulation of potentially adverse cumulative impacts associated with operation of the proposed plant. The reviewer should take the following steps:

- (1) Identify past, present, and known future Federal, non-Federal, and private actions that could have meaningful cumulative impacts with the proposed action. Review of the aggregate effects of past actions is needed to the extent that the review provides information regarding the proposed action (CEQ 2005).
- (2) Identify the geographic area to be considered in evaluating cumulative impacts. CEQ guidance is to use natural ecological or sociocultural boundaries (CEQ 1997). Possible geographic areas that could be used to determine the appropriate geographic area for a cumulative impact analysis are in Table 2-2 of CEQ (1997).
- (3) Identify and tabulate the cumulative impacts associated with operation of the proposed plant. Input should be obtained from the reviewers for ESRPs 4.1 through 4.5. CEQ guidance is that agencies should focus on cumulative impact information that is relevant to reasonably foreseeable significant adverse impacts, is essential to a reasoned choice among alternatives, and can be obtained without exorbitant cost (CEQ 2005). Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects (CEQ 1997).

### IV. EVALUATION FINDINGS

The reviewer should prepare a summary of the cumulative impacts associated with operation of the proposed project. The summary should include an impact characterization for each category of impacts using the NRC's SMALL, MODERATE, LARGE terminology.

### 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 51.10, "Purpose and scope of subpart; application of regulations of Council on Environmental Quality."

40 CFR 1508, "Terminology and Index."

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

Council on Environmental Quality (CEQ). 1997. *Considering Cumulative Effects under the National Environmental Policy Act*.

Council on Environmental Quality (CEQ). 2005. Memorandum from James L. Connaughton, Chairman CEQ, to Heads of Federal Agencies regarding "Guidance on the Consideration of Past Actions in Cumulative Effects Analysis."

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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.

**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.

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