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REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 4.11

TERRESTRIAL ENVIRONMENTAL STUDIES FOR NUCLEAR POWER STATIONS

A. INTRODUCTION

The Nuclear Regulatory Commission's policy and procedures for preparing and processing environmental impact statements and related documents pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969 (Public Law 91-190, 83 Stat. 852) are set forth in 10 CFR Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection." Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," identifies the information needed by the NRC staff in its assessment of the potential environmental effects of a proposed nuclear facility. This regulatory guide provides technical information for the design and execution of terrestrial environmental studies for nuclear power stations. The information resulting from these studies, as they relate to ecological aspects of site selection, assessment of terrestrial effects of station construction and operation, and formulation of related monitoring activities, may be appropriate for inclusion in the applicant's environmental report.

Although there is a need for a thorough evaluation of environmental impacts, it is important that resources not be needlessly dissipated on programs of limited value. The need for accurate evaluation and timely review of the environmental report makes it essential to focus quickly on meaningful issues and to avoid exhaustive analyses not directly related to station impacts. This guide recommends site selection assessments, resource management, source control, and control of effects as means for protecting the terrestrial ecology. The approach recommended for terrestrial surveys begins with broadly based land-use and biotic inventories and then focuses on a limited number of significant environmental issues.

B. DISCUSSION

It is important that environmental assessments provide the information needed to estimate and limit potential environmental costs, including hidden or externalized costs, of nuclear power station construction and operation. By identifying important environmental costs prior to site preparation and station construction, the costs can be reduced to acceptable levels by selecting an appropriate site, revising the station design, or modifying operating procedures.

In this guide, environmental studies are divided into four phases: site selection, baseline studies, construction monitoring, and operational monitoring. Table 1 shows the organization for terrestrial studies identifying major tasks and their approximate time schedules.

Adverse impacts on terrestrial organisms or ecological systems have historically resulted from loss or modification of habitat, release of minerals or toxic chemicals into the environment, and direct destruction of biota. A biological effect may be expressed at the level of the individual organisms or through the collective response of organisms at the system level. Examples of effects on individual organisms include death, reduction of health or vitality, accumulation of toxic substances, and alteration of reproductive success. Examples of ecological system effects include changes in birth or death rates, changes of toxic element concentrations throughout entire food webs, and changes in population size or community structure.

Most plant and animal populations have sufficient reproductive capacity to make up for losses of a few individuals without changes in average population sizes or community structure. When the loss of individuals becomes sufficiently great, however, the population as a whole may cease to function as a self-sustaining, renewable resource. The population may then be overstressed, and species extinction or undesirable shifts in community structure may become possible.

Excessive population stresses have resulted from natural phenomena, hunting, trapping, draining of wetlands, harvesting forests, plowing prairies, widespread

TABLE 1

TERRESTRIAL ENVIRONMENTAL STUDIES RELATED TO THE CONSTRUCTION AND OPERATION OF NUCLEAR POWER STATIONS

Phase	Major Task	Time When Task Performed*
Site selection	Regional land-use analysis	Prior to application for CP when candidate areas are being selected
	Local land-use analysis	Prior to application for CP when preferred site is being selected
Baseline studies at the proposed site	Biological inventories	Prior to application for CP when ER is being prepared; may continue into period after CP issuance (but before OL issuance)
Construction monitoring at the approved site	Monitoring of construction practice	During period between CP issuance and OL issuance
Operational monitoring at the approved site	Problem-oriented monitoring (short-term and continuing programs)	After OL is issued

* CP = construction permit
ER = environmental report
OL = operating license

dispersion of toxic substances, and other activities. This does not imply that these activities are always incompatible with the well-being of natural systems. Experience has shown that good management often permits the coexistence of desired ecological systems with various enterprises.

Site Selection

The results of site selection surveys are useful in identifying potential impacts of station siting, construction, and operation on terrestrial ecological systems and permit evaluation of alternatives that could reduce adverse effects. In this guide, the suggested site selection procedures* are limited to terrestrial ecology.

Site selection surveys may be descriptive in nature. In describing biota, emphasis is generally placed on ecologically significant groupings of organisms and management of resources rather than on ecological detail. It is important, however, that the investigations rapidly focus on matters of special sensitivity, rather than retaining a broad and diffuse approach.

Site selection surveys can be conducted in two phases, regional land-use and local land-use analysis. Regional land-use analysis is used in conjunction with engineering surveys to select candidate sites for the nuclear station. Local land-use analysis is directed to candidate sites and is used in conjunction with engineering considerations to select a preferred site. Site selection surveys of terrestrial ecology are coordinated with preliminary engineering studies. The information needed could be obtained from such sources as aerial photographs, topographic maps, reconnaissance, literature, and regional or local zoning and planning data. Site selection surveys are performed with the objective of providing data for resource management analysis, rather than for detailed functional analysis of ecosystems.

Terrestrial criteria at the regional level that are needed in the selection of candidate sites include the extent of valuable farmland in the region and the alternatives available for siting on land of lower utility, the extent of valuable wildlife habitat in the region and alternatives to its use, and the extent of valuable forests in the region and alternatives to their use. Also needed is information on the current status of land use and zoning plans within the region. This includes an accounting of all land within the region in major categories such as agricultural land, forest land, urban areas, highways, and airports.

The selection process examines reasonable opportunities for utilizing sites that have minimal impact on the diversity of regional land use, present and future. Preservation of a range of options for land use is important for the consideration of biologically rare or

*See also Regulatory Guide 4.7, "General Site Suitability Criteria for Nuclear Power Stations."

unique areas. A unique wildlife habitat may be undesirable for a site since to use it could foreclose opportunities for propagation of wildlife, scientific study, natural history study, recreation, and public enjoyment of wildlife.

Federal, State, regional, and local planning authorities may be consulted to determine the existence and location of areas within the region that have been dedicated to the public interest or areas in which siting would be in conflict with preexisting zoning plans. Examples of such areas include dedicated parks and forests, especially productive farmland, places where specialty crops are produced, rare but as yet undedicated forests and wildlife habitats, scenic areas, and wetlands.

More specific land-use classes are needed in the local surveys than in the regional surveys, but they should be based on information obtained by reconnaissance rather than detailed biological inventory. Land-use categories may include farms, fields, secondary succession (indicating dominant species), forests, and residential, industrial, and commercial areas. If aerial photographs are used for local land-use analysis, it is important that their scale is sufficient to present views of the candidate sites and their immediate environs.

Major soil data for each site being considered may be obtained from existing literature or through reconnaissance if not otherwise available. Soil Conservation Service offices are usually able to supply sufficient information. Information may be supplied as a soil association map that is keyed to a table of descriptive information.

The selection of a cooling method for the proposed plant is an important consideration in site selection. Cooling reservoirs may require loss of land, which may be unacceptable compared to the use of cooling towers in some regions. However, cooling towers could be objectionable in scenic areas where a cooling lake could be an asset. Visible plumes from cooling towers could be more objectionable environmentally at some sites than at others because of ground fogs or icing. Table 2 is an example matrix that could be used in balancing the above factors.

For the local studies, increasing detail is needed in the tabulation of plant and animal species begun during the regional surveys. The species list may be enlarged from knowledge of principal habitats of the sites, reconnaissance, the literature, and local specialists. At this stage it is important to establish whether there are obvious differences among sites with respect to endangered species, game animals, or other important species or habitats. The assessment for each site should include consideration of the areas of preferred habitat of important species (see Section 2.2 of Regulatory Guide 4.2) that would be adversely affected.

Information required for transmission corridors is similar in nature to that for candidate site selection. Detailed corridor routes will not normally be known at this stage. Nevertheless, consideration needs to be given to probable corridor length, natural barriers, impact on land use, opportunities for combining new transmission lines with preexisting routes, and aesthetic effects in the selection of candidate sites.

Table 3 is an example matrix that could be used in weighing and balancing alternative sites. Site selection is dependent on a wide range of factors other than those relating to terrestrial ecology. In some cases the weighing and balancing of all factors may result in a selection that is less than optimum by terrestrial ecological criteria. In these cases the need for subsequent monitoring programs may be greater in the case of more nearly optimum choices. However, none of the candidate sites should be

TABLE 2

FACTORS CONSIDERED IN THE SELECTION OF SITES AND COOLING METHODS

Environmental Variable	Once-Through Cooling	Cooling Lake	Cooling Tower	Spray Canals
Farmland				
Woodland				
Wasteland				
Coastland				
Wetland				
Special Wildlife Habitats				
Preserves and Parks				
Aesthetic Impacts				

TABLE 3

SELECTION OF SITES: TERRESTRIAL FACTORS*

Factor	Site A	Site B	Site C	Site D
Land use				
Farmland				
Woodland				
Wildlife Habitat				
Unique or Rare Habitats				
Area of Site				
Transmission Corridors				
Terrestrial Ecology				
Important Species Present				
Endangered and Threatened Species Present				

*Units should be quantitative whenever appropriate; however, judgmental entries are acceptable if needed.

located in critical, unique, or highly valuable habitat areas.

The goal of the regional and local land-use surveys is the selection of a preferred site that does not have critical habitats or habitats in short local supply. Any site selected, of course, will result in the loss of some habitat and its associated residents. This loss is assessed through an inventory of species present.

Baseline Studies

Baseline studies of the preferred site, including transmission corridors, are needed to fully describe the site and to establish a basis for predicting the impact of construction or operation. Baseline studies may be used for comparison with later construction or operational studies.

Biological studies of the proposed site are made in advance of plant construction or operation. The qualitative notations of station and animal abundance included in the baseline inventory are normally sufficient. Quantitative measurement of population density is not usually needed as part of the species inventory unless professional judgment based on field study leads to a reasonable conclusion that one or more populations of important species could be adversely affected by construction or operation. This judgment should be based on examination of each species using the criteria cited here and on professional biological interpretation. Considerations include the biological reason for importance and the link between the nuclear station and the organism. The species considered important are those that meet the definition in Regulatory Guide 4.2 and that are linked adversely to the station in some reasonable way. These may require further quantitative effort in the baseline studies and operational monitoring surveys.

It is important that judgment be exercised in selecting the time for initiating quantitative population studies if they are needed. Where construction effects are anticipated, quantitative studies should begin in the baseline phase. Where an effect of station operation is expected, it would be best to defer quantitative baseline studies until some time prior to operation to ensure reasonable compatibility with the operational studies. It will usually be adequate to bracket the period of anticipated impact with 1 or 2 years of prior studies and an appropriate term of following studies.

Properly designed studies will avoid placing undue emphasis on certain easily accessible groups of organisms. Most species of insects, for example, are ecologically important in local food webs. However, species that cannot reasonably be judged threatened by the nuclear station or that are not likely to become of

economic or public health significance because of construction or operation need not be studied quantitatively beyond the initial inventories. Rodents are also ecologically important food web organisms. However, quantitative population measurements are not needed as long as there is no reason to believe that station construction or operation will have an effect on their populations beyond that caused by the loss of habitat.

Certain station sites and designs have required special environmental assessment effort. These include sites with large cooling lakes or reservoirs and plants having cooling towers, particularly if the water source is seawater or brackish water. These are discussed in more detail in the following sections.

It is important that the baseline studies of power stations having proposed man-made cooling lakes consider physical and chemical relationships between the water shed and lake; use of a new habitat by birds, insects, and other animals in both beneficial and adverse aspects; and the potential for successful rehabilitation of the lake basin if the station is decommissioned. Both beneficial and adverse effects of the lake on the environment should be considered.

Water quality of the artificial lake may be influenced not only by source water quality but also by relationships with soils and the surrounding landscape. Development of a watershed management plan is needed as well as an estimate of the amount of runoff of dissolved substances and soil into the lake from the surrounding landscape.

A new reservoir forms a new habitat for plants and animals. Waterfowl may be attracted in substantial numbers during their normal migration and their migration habits may be altered, e.g., by overwintering in a northern climate on a warm-water lake. Waterfowl attracted to a lake may cause economic loss to agriculture by their feeding activities and may cause degradation of the lake water quality from their metabolic wastes.

Evaporative cooling towers affect ecosystems by deposition of drift containing dissolved minerals on the landscape or by production of fog. Drift may be beneficial or adverse depending on the chemical compounds and elements being deposited and the amounts of deposition. The baseline program is designed to evaluate the potential effects of drift and to establish reference measurements for comparison with later operational monitoring observations by determining the amounts and kinds of airborne chemicals being deposited on site prior to cooling tower operation. Acceptable data could be obtained from existing sources of information or from monthly sampling of collectors that collect both dry and wet fallout. If a sampling program is used, it is normally continued for at least 1 year. Table 4 suggests chemicals that are usually considered in planning the program.

Drift from saltwater or brackish water cooling towers contains NaCl and other salts. The baseline chemical measurements establish the Na and Cl content of soils and plants in the expected drift field of cooling towers that use seawater or brackish water. Baseline soil measurements normally include the conductivity of saturated extracts and pH of samples obtained from the expected drift field.

If the drift from either freshwater or saltwater towers is likely to contain toxic substances, their concentrations are measured unless it is clear that the amounts and concentrations are sufficiently low to preclude both short-term and cumulative adverse effects. Adverse biological effects can usually be ruled out with reasonable certainty for most elements and compounds found in nature when the expected additions combined with preexisting levels would not raise the concentration of the toxic substance outside the range of variation normally found in the biota or soils of the region.

Chemical analyses of soils, plants, and animals in the drift field of freshwater cooling towers are not usually needed when all of the following apply: (1) the dominant salts are harmless mixtures of biological nutrients as shown in Table 4, (2) the expected deposition beyond the nearest site boundary is less than 20 kg/ha-yr of mixed salts, and (3) the drift does not contain toxic elements or compounds in amounts that could be hazardous to plants or animals either by direct or indirect exposure over the expected lifetime of the facility.

Usually, reference specimens of soils, plants, and animals for possible future analysis are retained in cases where it is determined that drift presents a chemical hazard to the environment. The specimens may consist of subsamples of material that were collected prior to tower operation and analyzed for baseline data. The stored samples are adequately protected for analytical purposes.

Construction Monitoring

Biological monitoring of important species is necessary if unavoidable construction practice causes a threat to some natural population or ecosystem that could extend beyond the bounds of the area actually dedicated to construction or associated activities. In such cases, studies may be designed to document the impact and develop possible corrective actions.

TABLE 4

ELEMENTS AND COMPOUNDS OF POSSIBLE CONCERN
IN CHEMICAL MONITORING PROGRAMS
FOR TERRESTRIAL SYSTEMS

Group	Chemical Substances	Relative Biological Hazard
Macronutrient	NH_4^{+1}, NO_3^{-1}, PO_4^{-3}, SO_4^{-2}; Ca, Mg, K, Mn	Minor or no risk except in extremely large quantities.
Micronutrient	Cu, Zn, Co, B, Mo, V, Fe, I^{-1}	No hazards within the range of concentrations found in nature. Toxicity possible if concentrations are moderate to high.
Chemical compounds commonly found in environment, some required by animals	Na, Cl, F, HCO_3, CO_3^{-2}	Minor risk at ordinary concentration. Risk from halogens dependent on chemical form. Carbonates usually innocuous. Sodium salts have high risk osmotic effects on plants at high concentration.
Toxic	Pb, Hg, Cd, Cr, As	Presumed high biological risk at all concentrations above those normally found in nature.
Biocides added to cooling waters	All	Presumed high biological risk if present in cooling tower drift.

Operational Monitoring

Monitoring after commencement of station operations is intended to determine whether or not there are adverse biological effects attributable to station operations. This monitoring program is outlined in detail in the technical specifications that are issued in connection with the station operating license. The scope of these studies is determined by the degree of direct linkage between the proposed station and the terrestrial ecosystem. It is not necessary to hypothesize vague effects or to undertake a program to measure a phenomenon that has no reasonable relationship to station operation. However, when an adverse relationship between station operation and a terrestrial community is reasonably thought to exist, a thorough evaluation is necessary. This evaluation is usually started during site selection or baseline survey stages and continued after commencement of station operation.

There may be cases in which no important impact on the terrestrial ecological community is anticipated. When such cases are adequately supported, there may be no necessity for terrestrial monitoring during operation.

C. REGULATORY POSITION

1. It is important to coordinate all the programs discussed in Regulatory Guides 4.1, "Programs for Monitoring Radioactivity in the Environs of Nuclear Power Plants," and 4.2, "Preparation of Environmental Reports for Nuclear Power Stations." Since precise predictions and assessments of impacts on terrestrial ecological systems are not always possible, reasonable professional interpretations should be made when quantitative prediction is impossible.

2. Adequate assessment of current land-use status should show (by a table, for example) major land-use categories and areas devoted to each category along with aerial photographs showing the same categories. When data are not available from existing records, an acceptable means of acquiring them would be through the use of aerial photographs in conjunction with ground reconnaissance. The scale of photographs should be appropriate to the degree of detail required.

3. Discussion of soils should include association names, capability classes,* and percentage of site coverage by each association. When numerous associations of minor extent are present, it is acceptable to account for 10 to 15% of the total area in a miscellaneous category, except for areas of unique value. Detailed consideration of soils and their production potential is necessary for sites located in areas that are especially productive of agricultural or forestry products.

4. Biological monitoring programs should be initially devised to be screening procedures to detect undesirable effects. If adverse biological effects are detected, detailed quantitative biological and ecological analyses may be required to determine causes and to devise remedies. If adverse effects are not detected, quantitative studies are not needed.

The species inventory of the site should include important habitats and normal seasonal variations. Locally prominent or important vascular plants, mammals, birds, reptiles, amphibians, insects, and other plants and animals should be included. The inventory should be reasonably complete but may be terminated when additional field effort no longer yields significant numbers of previously unobserved species.

The inventory of insects need not account for all species since it may be possible to find previously untabulated species for years after the beginning of the study. Insect surveys should provide information on important species such as disease vectors, pests, and pollinating insects. Interpretation of insect data should include whether or not populations could be altered, with adverse consequences to animals, vegetation, or humans, by construction or operation of the station.

Protection of terrestrial systems is usually adequate when it can be shown that (1) habitat losses or alterations are insignificant to populations of important species in the regional or local context, (2) chemical emissions from the station are sufficiently small to permit reasonable assurance that no adverse effect will occur, and (3) no mechanism exists for causing unintended destruction of organisms, or its occurrence is infrequent enough to give reasonable assurance that whole populations will not be adversely affected.

Environmental protection should be achieved by control of common sources of environmental effects. These include soil erosion, siltation, use of herbicides, dust and noise during construction, and others. Biological consequences can usually be prevented or reduced to acceptable levels through proper management.

*U.S. Department of Agriculture I-VIII System should be used.

If cooling towers are being considered, the mineral content of the cooling water supply should be determined in the baseline studies. An estimate should be made of the amounts and dispersion of salts expected to be deposited from the towers. The estimate should be based on cooling water quality, manufacturer's specifications for drift release from the towers, concentration factors, and prevailing meteorological conditions at the site. Meteorological dispersion models are useful to obtain estimates of drift deposition. Estimated drift deposition from cooling towers may be plotted on a base map or graph centered on the towers and showing isopleths of salt deposition. The maps should have a radius sufficient to show the points at which the amounts of drift from the tower fall within the normal range of annual variation of background deposition from other sources. They should also show the vegetation types that occur in the drift field.

Reconnaissance and inspection of biota in the drift field before and after cooling tower operation is a means recommended for detection of possible adverse effects of drift. The baseline inspection should be carried out by specialists in biology working systematically from checklists of possible adverse effects in the community. Seasonal aerial and ground-level photographs in color or infrared false color of permanent vegetation plots are often useful aids. Quantitative chemical analysis of plants, animals, and soils are needed if chemical deposits are expected to exceed toxic or injurious thresholds. Population monitoring of selected species could also be needed in such cases.

The assessment of cooling lakes should include a detailed consideration of the effects of land diversion on local, regional, and State agricultural production, forest production, or recreational uses. The assessment should include both adverse and beneficial aspects of cooling lake construction. Where a cooling lake is proposed, the baseline studies should include a preliminary assessment of the potential for reclamation of the lake bottom for agricultural, ecological, or forestry use after decommissioning. It is not necessary, however, to prejudge future use of the lake site. It is sufficient to establish whether the option exists to reclaim the site for other productive uses or whether the creation of the lake constitutes an irretrievable change in land use.

The assessment should also include a report of the number of hectares of the lake site that will remain undisturbed during construction, the number of hectares and vegetation that will be disturbed, the source of "borrow" material for dike construction, and the management of topsoil removed during construction. Use of topsoil stripped from the lake bottom for vegetative stabilization of dikes and for ultimate replacement on the lake bottom for rehabilitation should be considered.

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The assessment should also include a report of the number of hectares of the lake site that will remain undisturbed during construction, the number of hectares and vegetation that will be disturbed, the source of "borrow" material for dike construction, and the management of topsoil removed during construction. Use of topsoil stripped from the lake bottom for vegetative stabilization of dikes and for ultimate replacement on the lake bottom for rehabilitation should be considered.

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When a proposed lake is to be built on substrates having a potential for affecting water quality, chemical analyses of the substrates should be performed. The elements to be measured depend on the nature of the substrate. If the substrate is formerly fertilized farmland, analysis for elements common to chemical fertilizers is needed. If the substrate is land of some special history, such as strip-mine land, appropriate chemical assessment of the water-soluble and exchangeable components of the substrate should be made to obtain an estimate of chemical input to the lake. Special attention is given those elements that could reach toxic concentrations in water, accumulate to toxic levels in food webs, or affect the pH of the lake. The chemical analyses should be performed on appropriate chemical extracts of the soil material. The characterization of soil material should also include determination of exchange capacity, organic matter, pH, and textural class.

When a reservoir is proposed, the baseline studies should include reasonable predictions of the number of birds (especially waterfowl) expected to use the lake on an annual basis, their expected residence time, the expected impact on farmlands, and all other impacts either on the birds themselves or on the surrounding area due to their presence. The estimates should be the best obtainable based on known flyways, estimates of farm acreages nearby, literature, or local evidence of bird utilization of other reservoirs under similar conditions.

If significant numbers of waterfowl are expected to congregate at the lake for appreciable periods of time, a monitoring program should be started when the lake has been filled. The program should determine the number of waterfowl, the extent of crop damage in hectares, the value of crop lost on an annual basis due to bird feeding, and the numbers of dead or obviously diseased birds.

5. When adverse effects of construction or operation can be reasonably inferred from information obtained during the baseline phase, quantitative studies that can be compared with later studies during construction or operational phases should be initiated. Such studies could include measurements of population densities of endangered species or chemical measurements of soils and biota within the potential drift field of a cooling tower, for example.

The preferred method of biological protection on many construction sites is direct control of potentially injurious work practice. Systematic inspection during construction at the site along transmission corridors and in adjacent areas should be used to detect injurious or unauthorized activities. Examples of items that may be checked are:

a. *Traffic Control* – Vehicles should be confined to authorized roadways and stream crossings.

b. *Dust Control* – Dust should be controlled by watering, graveling, or paving. Areas subject to wind erosion should be controlled by mulching or seeding.

c. *Noise Control* – Noise should be monitored at site boundaries.

d. *Smoke Control* – Open slash burning of plant material should be conducted in accordance with local and State regulations.

e. *Chemical and Solid Waste Control* – Cement, chemicals, fuels, sanitary wastes, lubricants, bitumens, flushing solutions, or other potentially hazardous materials should be salvaged or discharged safely in accordance with existing regulations. Spills should be cleaned up before they become a hazard.

f. *Soil Erosion and Sediment Control* – Erosion should be controlled by piped drainage, diversion dikes, flumes, sediment control structures, ground covers, or other appropriate means.

g. *Dewatering* – Dewatering should be confined to the area needed for construction; test wells or pre-existing wells should be monitored for changes in the water table.

If, after analysis of the inventory of species and consideration of potential effects of the nuclear power station, a conclusion is warranted that there will be no adverse impact on biota, there may be no need to carry out biological monitoring programs at the construction and operational stages and, correspondingly, there may be no need to initiate such programs during the baseline stage.

Special studies could be necessary if adverse effects on biota are detected and there is no obvious explanation or remedy for the effect. In the usual case, however, if habitat loss or alteration, chemical emissions, or direct destruction of organisms do not constitute a threat to a population of an important species, the effect need not be studied further even though it is important in an ecological sense.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants regarding the NRC staff's plans for using this regulatory guide.

This guide reflects current NRC staff practice. Therefore, except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein is being and will continue to be used in the evaluation of submittals for operating license or construction permit applications until this guide is revised as a result of suggestions from the public or additional staff review.