DRAFT OMB SUPPORTING STATEMENT
FOR
10 CFR PART 100

REACTOR SITE CRITERIA
(OMB Clearance No. 3150-0093)

Clearance Revision

DESCRIPTION OF THE INFORMATION COLLECTION

The Nuclear Regulatory Commission's (NRC's) regulations, 10 CFR Part 100, "Reactor Site Criteria," establish approval requirements for proposed sites for the purpose of constructing and operating stationary power and testing reactors pursuant to the provisions of 10 CFR Parts 50 or 52. The information collection requirements of Part 100 are contained in Sections 100.21 and 100.23 and Appendix A and are described below. Section 100.23 and Appendix S to Part 50 apply to applicants who apply for an early site permit, design certification, or combined license pursuant to Part 52 or a construction permit or operating license pursuant to Part 50 on or after January 10, 1997. If the construction permit were issued prior to January 10, 1997, the operating license applicant must comply with the seismic and geologic siting and earthquake engineering criteria in Appendix A to Part 100. Appendix A to Part 100 continues to serve as the criteria for the seismic and geologic siting and earthquake engineering for plants licensed or granted their construction permit before January 10, 1997.

Section 100.21, "Non-seismic siting criteria," set forth the criteria that applicants must demonstrate in the license application the need for operating commercial power reactors.

(a) Requires that the site must have an exclusion area and a low population zone.
(b) Requires that the population center distance must be one and one-third times the distance from the reactor to the outer boundary of the low population zone.
(c) Requires site atmospheric dispersion characteristics must be evaluated as set forth in 10 CFR Part 50.34(a)(1) to include radiological effluent release limits and radiological doses.
(d) Requires that the physical characteristics of the site must be evaluated and site parameters established.
(e) Requires that transportation routes, and industrial and military facilities establish site parameters that must be evaluated.
(f) Requires adequate security plans and measures that can be developed.
(g) Requires that Impediments to emergency plans must be identified.
(h) Requires sites to be located away from very densely populated centers.

Section 100.23, "Geologic and seismic siting criteria," set forth the principle geologic and seismic considerations that guide the Commission in its evaluation of the suitability of a proposed site and the adequacy of the design bases established in consideration of the geologic and seismic characteristics of the site.

(a) Requires paragraphs (c) and (d) be applied to applicants for an early site permit or combined license pursuant to Part 52.

(b) Requires that paragraph (c) be within the scope of section 50.10.

(c) Requires the applicant for early site permit or combined license under part 52 to provide an adequate evaluation of geological, seismological, and engineering characteristics of a site and it environs to support the evaluation.

(d) Requires the geologic and seismic siting factors considered for design must include a determination of the Safe Shutdown Earthquake Ground Motion for the site, the potential for surface tectonic and nontectonic deformations, the design bases for seismically induced floods and water waves, and other design conditions as stated in paragraph (d)(4).

Appendix A, "Seismic and Geologic Siting Criteria for Nuclear Power Plants" set forth the criteria for the principal seismic and geologic considerations which guide the Commission in its evaluation of the suitability of proposed sites for nuclear power plants and the suitability of the plant design bases established in consideration of the seismic and geologic characteristics of the proposed sites.

(IV) Require geologic, seismic and engineering characteristics of site and its environs shall be investigated in sufficient scope and detail to provide reasonable assurance that they are sufficiently well understood to permit an adequate evaluation of the proposed site, and to provide sufficient information to support the determinations required by these criteria and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site.

(a) Requires information needed to describe the vibratory ground motion produced by the Safe Shutdown Earthquake.
(b) Requires a determination of the lithologic, stratigraphic, hydrologic, and structural geologic conditions of the site and the region surrounding the site, including its geologic history.
(c) Requires identification and evaluation of tectonic structures underlying the site and the region surrounding the site.
(d) Requires an evaluation of physical evidence concerning the behavior during prior earthquakes.
(e) Requires determination of the static and dynamic engineering properties of the materials underlying the site.
(f) Listing of all historically reported earthquakes which have affected or which could reasonably be expected to have affected the site, including the date of occurrence and the following measured or estimated data.
(g) Requires correlation of epicenters or locations of highest intensity of historically reported earthquakes located within 200 miles of the site.
(h) Requires for faults with any part of which is within 200 miles of the site and which may be significance in establishing the Safe Shutdown Earthquake, and the determination of whether these faults are to be considered as capable faults.

(I) Requires for capable faults, any part of which in within 200 miles of the site and which may be of significance in establishing the Safe Shutdown Earthquake determination of length of the fault, relationship of the fault to regional tectonic structures, nature, amount, and geologic history of displacements along with faults.

(j) Requires information to determine whether and to what extent the nuclear power plant need be designed for surface faulting.

(k) Requires a determination of the lithologic, stratigraphic, hydrologic and structural geologic conditions of the site and the area surrounding the site.

(l) Requires an evaluation of tectonic structures underlying the site, whether buried or expressed at the surface, with regard to their potential for causing surface displacement at or near the site.

(m) Requires determination of geologic evidence of fault offset at or near the ground surface at or near the site.

(n) Requires fault greater than 1000 feet long or any part of which is within 5 miles of the site to be considered as capable faults.

(o) Requires a listing of all historically reported earthquakes which can reasonable be associated with capable faults greater than 1000 feet long and within 5 miles of the site.

(p) Requires correlation of epicenters or locations of highest intensity of historically reported earthquakes located within 200 miles of the site.

(q) Requires for capable faults greater than 1000 feet long and which in within 5 miles of the site for the determination of the length of the fault, relationship of the fault to regional tectonic structures, nature, amount and geologic history of displacements along the fault, and the outer limits of the fault established by mapping Quaternary fault traces for 10 miles along its trend in both directions from the point of its nearest approach to the site.

(r) Requires investigation for Seismically Induced Floods and Water Waves to include information regarding distantly and locally generated waves or tsunami which have affected or could have affected the site and local features of coastal topography which might tend to modify tsunami runup and drawdown, also to provide appropriate geologic and seismic evidence to provide information for establishing the design basis for seismically induced floods or water waves from a local offshore earthquake, from local offshore effects of an onshore earthquake, or from coastal subsidence.

(V) Seismic and Geologic Design Bases

(a) Requires a determination of design basis for vibratory ground motion.

(b) Requires the determination of safe shutdown earthquake.

(c) Requires the determination of operating basis earthquake.

(d) Requires the determination of need to design for surface faulting.

(e) Requires the determination of zone which requires detailed faulting investigation.

(f) Requires the determination of design bases for seismically induced floods and water waves.

(g) Requires the determination of other design conditions.

(h) Requires the slope stability of both natural and artificial.

(I) Requires the assurance of adequate cooling water supply for emergency and long-term shutdown.

(j) Requires distant structures which are not located in the immediate vicinity of the site but which are safety related .

(VI) Application to Engineering Design

(a) Requires the engineering method used to insure that the required safety functions are maintained during and after the vibratory ground motion associated with the safe shutdown earthquake.
(b) Requires operating basis earthquake.
(c) Requires seismic instrumentation.
(d) Requires surface faulting in the design of nuclear power plants.
(e) Requires seismically induced floods and water waves and other design conditions from either locally or distantly generated seismic activity.

This clearance is necessary since the NRC is currently evaluating three early site permit applications and expects as many as three early site permit applications over the next three years. The NRC review process for a construction permit, operating license, early site permit, design certification, or combined license as it applies to Part 100 would range from one to several years. The NRC staff reviews the Safety Analysis Report for 6 to 24 months and, if necessary, generates a request for additional information. The applicant usually responds within 1 to 6 months, depending on the complexity of the issues. The average time is usually about 3 months. The responses are reviewed and a draft Safety Evaluation Report is written by the NRC staff. This document summarizes conclusions and highlights any outstanding issues. The NRC staff arranges for a meeting and site visit to resolve any open issues. When the open issues have been resolved, the staff writes the final Safety Evaluation Report which is published and used as a basis for the remainder of the NRC licensing process which consists of meeting with the Advisory Committee on Reactor Safeguards (ACRS) and hearing, as necessary, before the Atomic Safety and Licensing Board Panel. This process usually takes about 1½ years.

A. JUSTIFICATION

1. Need for and Practical Utility of the Information Collection

In support of the agency's mission regarding adequate protection of the health and safety of the public from natural phenomena and man-made hazards, the NRC needs the requested information to assess the adequacy of proposed design bases for natural phenomena and man-made hazards for nuclear power plants. It is submitted to the NRC as part of the application and supporting documentation for a construction permit, operating license, early site permit, design certification, or combined license for a nuclear power plant.

Moreover, Sections 100.21, 100.23, and Appendix A, supplemented by Regulatory Guide 1.138, "Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants," Regulatory Guide 1.132, "Site Investigations for Foundations of Nuclear Power Plants," Regulatory Guide 1.165, "Identification and Characterization of Seismic Sources and Determination Safe Shutdown Earthquake Ground Motion," Regulatory 1.59, "Design Basis Floods for Nuclear Power Plants," Regulatory Guide 1.91, "Evaluations of Explosions Postulated to Occur on Transportation Routes Near Nuclear Power Stations," Regulatory Guide 1.198, "Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites, Regulatory

Guide 4.2, “Preparation of Environmental Reports for Nuclear Power Stations,” Regulatory Guide 4.7, “General Site Suitability Criteria for Nuclear Power Stations,” and NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants” are used by applicants as general guidance in planning investigations of nuclear power plant sites.

2. Agency Use of Information

The NRC reviews the physical characteristics of the site in addition to the potential for natural phenomena and man-made hazards to determine the suitability of the proposed site for a nuclear power plant and the suitability of the plant design bases established on the proposed site. A construction permit, early site permit, standard design certification, combined license, or operating license cannot be issued until these data have been reviewed and approved by the NRC.

New information regarding the potential for natural phenomena and man-made hazards that becomes known during the operating life of the plant is also evaluated on the basis of these criteria.

3. Reduction of Burden Through Information Technology

There are no legal obstacles to reducing the burden associated with this information collection. The NRC encourages respondents to use information technology when it would be beneficial to them. NRC issued a regulation on October 10, 2003 (68 FR 58791), consistent with the Government Paperwork Elimination Act, which allows its licensees, vendors, applicants, and members of the public the option to make submissions electronically via CD-ROM, e-mail, special Web-based interface, or other means. However, the infrequency of submissions does not readily allow the efficient use of information technology under this clearance.

4. Effort to Identify Duplication and Use Similar Information

NRC has in place an on-going program to examine all information collections with the goal of eliminating all duplication and/or unnecessary information collections.

All pertinent information concerning the nuclear site and the region around the site will be used in the analysis of that site, whether it is supplied by the applicant or not. The availability of information concerning the potential for natural phenomena and man-made hazards may reduce the applicant’s efforts related to site investigation.

5. Effort to Reduce Small Business Burden

Not applicable.

6. Consequences to the Federal Program or Policy Activities if the Collection is Not Conducted or is Conducted Less Frequently

Less frequent collection of information will result in serious delays in the licensing processes of nuclear power plants or potential additional risks to the health and safety of the public.

7. Circumstances Which Justify Variation from OMB Guidelines

There is no variation from the guidelines.

8. Consultations Outside the NRC

The NRC consulted with three licensees regarding the estimated burden relating to the information collections contained in this document. The NRC and the licensees are in agreement and these estimates are reflected in this package.

Opportunity to comment on the information collection has been published in the Federal Register.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of the Information

No confidential information is required, except for proprietary information which would be handled in accordance with 10 CFR 2.390 of NRC's regulations.

11. Justification for Sensitive Questions

Not applicable.

12. Estimate of Industry Burden and Burden Hour Cost

The total burden for collecting information concerning the potential for natural phenomena and man-made hazards at a proposed nuclear power plant site is estimated at 8,711 hours annually for 1 respondent. Section 100.21 - 1 response, 2,711 hours; and Section 100.23 - 1 response, 6,000 hours. Thus, the total estimated annual burden for industry is 8,711 hours at a cost of $1,367,627 (2,711 + 6,000 = 8,711 hours x $157 = $1,367,627).

The NRC consulted with three licensees regarding the estimated burden relating to the information collections contained in this document. The NRC and the licensees are in agreement and these estimates are reflected in this package.

ANNUALIZED REPORTING BURDEN						
Section	No. Of Respondents	Responses per Respondent	Total Responses	Burden per Response	Total Annual Burden Hours	Cost at $157/hour
100.21	1	.33	.33	8,133	2,711	$425,627
100.23	1	.33	.33	18,000	6,000	$942,000
Appendix A	Burden included in 100.23					
TOTAL	1		1		8,711	$1,367,627

TOTAL BURDEN HOURS: 8,711 hours
TOTAL BURDEN HOUR COST: $1,367,627 (8,711 hrs. X $157 hrs.)
TOTAL RESPONDENTS: 1

13. Estimate of Other Additional Costs

No additional cost.

14. Estimated Annual Cost to the Federal Government

Staff review of information concerning potential natural phenomena and man-made hazards for a proposed nuclear power plant site may result in approximately 5,000 hours per year at an estimated cost of $785,000 (5,000 x $157).

This cost is fully recovered through fee assessments to NRC licensees pursuant to 10 CFR Part 170 and/or 171.

15. Reasons for Change in Burden

The overall burden estimate for 10 CFR Part 100 is minimally reduced. Three licensees were asked to provide burden estimates for early site permit applications. The burden estimate ranged between 9,000 and 50,000 hours per application. Averaged over three years and based on the survey results, the average burden has been revised downward to 8,711 hours. NRC anticipates that one application will be filed for the use of non - seismic and seismic siting over the next three years.

There has been an increase in the overall cost as a result of an increase in the rate from $150 per hour to $157 per hour."

16. Publication for Statistical Use

This information will not be published for statistical use.

17. Reason for Not Displaying the Expiration Date

The requirement is contained in a regulation. Amending the Code of Federal Regulations to display information that, in an annual publication, could become obsolete would be unduly burdensome and too difficult to keep current.

18. Exceptions to the Certification Statement

Not applicable.

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

10 CFR Part 100 allows for the acquisition of statistical data and the use of statistical methods, but does not require them.