

FINAL SUPPORTING STATEMENT
FOR
10 CFR PART 100, REACTOR SITE CRITERIA

(3150-0093)

EXTENSION

Description of the Information Collection

The U.S. Nuclear Regulatory Commission (NRC) regulations, Title 10 of the *Code of Federal 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. Subpart B, "Evaluation Factors for Stationary Power Reactor Site Applications on or After January 10, 1997," requirements apply to applicants who apply for an early site permit (ESP), combined license or a construction permit (CP) or operating license (OL) on or after January 10, 1997.¹

Prospective applicants must provide information regarding the physical characteristics of the site in addition to the potential for natural phenomena and man-made hazards consistent with Part 100. This includes information on meteorological hazards (such as hurricanes, tornadoes, snowfall, and extreme temperatures), hydrologic hazards (such as floods, tsunamis, and seiches) geologic hazards (such as faulting, seismic hazards, and the maximum credible earthquake) and factors such as population density, the proximity of man-related hazards (e.g., airports, dams, transportation routes, military, and chemical facilities), and site hydrological and atmospheric dispersion characteristics.

For the purposes of licensing under 10 CFR Part 50 ("Domestic Licensing of Production and Utilization Facilities"), the NRC staff anticipates performing 19 regulatory reviews of various types during this clearance cycle. The types of regulatory reviews anticipated include evaluations of ESPs, CPs, and OLs. The types of facilities for which a Part 100 siting review is to take place are large light water reactors (LWR), advanced non-LWRs², and non-power production and utilization facilities. Table 1 summarizes the type of regulatory reviews anticipated for the types of facilities proposed for siting, construction, or operation.

For the purposes of licensing under 10 CFR Part 52 ("Licenses, Certifications, and Approvals for Nuclear Power Plants"), the NRC staff anticipates performing 20 regulatory reviews during this clearance cycle. The types of regulatory reviews that are anticipated and that include consideration of the Part 100 siting requirements are for both ESPs (7) and combined operating license (COL) applications (13). See Table 2.

Overall, the staff anticipates performing 39 Part 100 reviews during this clearance cycle.

¹ Regulation 10 CFR Part 100, Subpart A reflect evaluation factors for site applications before January 10, 1997. Appendix A to 10 CFR Part 100, however, serves as the criteria for the seismic and geologic siting and earthquake engineering for plants licenses or granted their CP before January 10, 1997.

² This would include small modular reactors (SMRs) and test reactors.

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 CP, OL, ESP, or a COL for a nuclear power plant and/or other type of nuclear facility subject to the requirements of 10 CFR Parts 50 and 52.

A detailed description of Part 100 information collection requirements can be found at the end of this supporting statement.

2. Agency Use of Information

The NRC independently reviews the physical characteristics of the proposed site in addition to the potential for natural phenomena and man-made hazards consistent with Part 100 to determine the suitability of the site for a nuclear power plant and/or another type of nuclear facility and the suitability of the design bases proposed for the site. A CP, OL, ESP, or a COL cannot be issued until these data have been independently reviewed and approved by the NRC staff.

New information regarding the potential for natural phenomena and man-made hazards that becomes known during the operating life of a nuclear power plant and/or another type of nuclear facility is also evaluated on the basis of the Part 100 siting 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.

The NRC has issued [Guidance for Electronic Submissions to the NRC](#) which provides direction for the electronic transmission and submittal of documents to the NRC. Electronic transmission and submittal of documents can be accomplished via the following avenues: the Electronic Information Exchange (EIE) process, which is available from the NRC's "Electronic Submittals" Web page, by Optical Storage Media (OSM) (e.g., CD-ROM, DVD), or by e-mail. It is estimated that approximately 100 percent of the potential responses are filed electronically.

4. Effort to Identify Duplication and Use Similar Information

No sources of similar information are available. There is no duplication of requirements.

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

An applicant is only required to report the required Part 100 information if it seeks to obtain approval for a proposed site for the purpose of constructing and operating a stationary power or testing reactor. Lack of collection of information will result in the inability to complete the licensing processes of nuclear power plants and/or another type of nuclear facility.

7. Circumstances Which Justify Variation from the Office of Management and Budget Guidelines

There is no variation from the guidelines.

8. Consultations Outside the NRC

Opportunity for public comment on the information collection requirements for this clearance package was published in the Federal Register on April 5, 2024, (89 FR 24044). Additionally, NRC staff contacted six stakeholders via email. The stakeholders were operating reactor owner/operator licensee's and industry representatives from Dominion Generation, Holtec, Shine Technologies, Tennessee Valley Authority, TerraPower, and X-Energy.

No responses or comments were received as a result of the FRN or the staff's direct solicitation of comments.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of the Information

Confidential and proprietary information is protected in accordance with NRC regulations at 10 CFR 9.17(a) and 10 CFR 2.390(b).

No Personally Identifiable Information is collected as part of this information collection.

11. Justification for Sensitive Questions

Not applicable.

12. Estimate of Industry Burden and Burden Hour Cost

12.a Part 50-Based Reviews

The NRC expects to review 19 Part 50 applications related to the licensing of an LWR, an advanced non-LWR, and/or a non-power production and utilization facility during the clearance cycle that would include information bearing on the Part 100 requirements. During this three-year clearance cycle, staff expects to receive 19 applications and review 6.3 annually. The current revised estimates are based pre-licensing planning statements and other information provided by prospective applicants (vendors and the utilities) to the NRC.

For each application, the estimated burden for 10 CFR Section 100.21 (Non-seismic siting criteria) reviews is 22,000 hours and for 10 CFR Section 100.23 (Geologic and seismic siting criteria) reviews is 51,000 hours. The total burden for collecting and reporting information concerning the potential for natural phenomena and man-made hazards at a proposed facility site is estimated to be about 73,000 hours per application. For these estimates about 30 percent of the total estimated burden hours are for the non-seismic siting criteria reviews and about 70 percent are for the geologic and seismic siting criteria reviews.

Annually, the total estimated review burden is 459,900 hours in any year (73,000 hours per application x 6.3 applications) at a total estimated cost of about \$137,970,000 (459,900 hours x \$300). See Table 3.

12.b Part 52-Based Reviews

The NRC expects to review 20 applications during the clearance cycle for either an ESP or and COL for the siting and or construction of an advanced reactor over the next three years or an average of 6.7 applications in any year. The current revised estimates are based pre-licensing planning statements and other information provided by prospective applicants (vendors and the utilities) to the NRC.

For each application, the estimated burden for 10 CFR Section 100.21 (Non-seismic siting criteria) reviews is 2,190 hours and for 10 CFR Section 100.23 (Geologic and seismic siting criteria) reviews is 1,170 hours. Thus, the total burden for collecting and reporting information concerning the potential for natural phenomena and man-made hazards at a proposed advanced reactor site sites is estimated to be about 3,360 hours per application. For these estimates about 65 percent of the total estimated burden hours are for the non-seismic siting criteria reviews whereas about 35 percent are for the geologic and seismic siting criteria reviews.

Annually, the total estimated review burden is 22,512 hours in any year (3,360 hours per application x 6.7 applications) at a total estimated cost of about \$6,753,000 (22,512 hours x \$300). See Table 4.

12.c NRC Fees

The \$300 hourly rate used in the burden estimates is based on NRC's fee for hourly rates as noted in 10 CFR 170.20 "Average cost per professional staff-hour." For more information on the basis for this rate, see the "Revision of Fee Schedules, Fee Recovery for Fiscal Year 2023" (88 FR 39120, dated June 15, 2023).

The recordkeeping burden associated with the applications discussed above are captured in approved OMB Control Numbers 3150-0011 and 3150-0151.

13. Estimate of Other Additional Costs

There are no additional costs.

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 or at site intended for a non-power production and utilization facilities is estimated at approximately 73,000 hours per application, for an estimated annual cost of \$21,900,000 (73,000 hours/application x \$300/hour).

Staff review of information concerning potential natural phenomena and man-made hazards for advanced reactors is estimated at approximately 3,360 hours per application, for an estimated annual cost of \$1,008,000 (3,360 hours/application x \$300/hour).

15. Reasons for Change in Burden

The estimated number of hours to complete an Part 50 application review is unchanged (at an estimated 73,000 hours per application). The overall burden has increased from 48,180 hours to 482,412 hours due to the increase number of Part 50 rules and the inclusion of the Part 52 reviews for the first time (estimated at 22, 512 hours). The previous estimate of 7 applications during the last clearance cycle (or 2.3 reviews annually) is projected to grow to 39 applications or 13 Part 100-based reviews annually. The significant increases are due to several factors. They include the projected expansion in the number of new operating reactors and anticipated applications new power reactor sites (including non-LWRs) as depicted in Tables 1 and 2.

16. Publication for Statistical Use

This information will not be published for statistical use.

17. Reason for Not Displaying the Expiration Date

The recordkeeping and reporting requirements for this information collection are associated with regulations and are not submitted on instruments such as forms or surveys. For this reason, there are no data instruments on which to display an OMB expiration date. Further, amending the regulatory text of the CFR 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

Not applicable.

TABLE 1
Estimated Licensing Actions for LWRs for under 10 CFR Part 50

Facility Type	Licensing Action		
	Early Site Permit	Construction Permit	Operating License
Light Water Reactor	1	1	1
Non-Light Water Reactor/Advanced Reactor		3	2
Non-Power Production and Utilization Facilities		4	7
TOTALS	1	8	10

TABLE 2
Estimated Licensing Actions for Reviews under 10 CFR Part 52

Status	Number
Early Site Permit	
Existing Permit Holder	6
New Applicant	1
Combined Operating License	
Existing COL Holder	5
New Applicant	8
TOTALS	20

TABLE 3
Estimated Annualized Reporting Burden for Part 50 Reviews

Section	Average No. of Respondents	Responses per Respondent	Total No. of Responses	Reporting Burden per Response (Hours)	Total Annual Reporting Burden (Hours)
Non-seismic siting criteria (10 CFR 100.21)	6.3	1	6.3	22,000	138,600
Geologic and seismic siting criteria (10 CFR 100.23)	6.3	1	6.3	51,000	321,300
TOTAL	---	2	---	73,000	459,900

TOTAL BURDEN HOURS: 459,900 hours
TOTAL BURDEN HOUR COST: \$137,970,000 (73,000 hours per respondent x 6.3 respondents x \$300/hour)
ANNUAL RESPONDENTS: 6.3 respondents

TABLE 4
Estimated Annualized Reporting Burden for Part 52 Reviews

Section	Average No. of Respondents	Responses per Respondent	Total No. of Responses	Reporting Burden per Response (Hours)	Total Annual Reporting Burden (Hours)
Non-seismic siting criteria (10 CFR 100.21)	6.7	1	6.7	2,190	14,673
Geologic and seismic siting criteria (10 CFR 100.23)	6.7	1	6.7	1,170	7,839
TOTAL	---	2	---	3,360	22,512

TOTAL BURDEN HOURS: 22,512 hours
TOTAL BURDEN HOUR COST: \$6,753,600 (3,360 hours per respondent x 6.7 respondents x \$300/hour)
ANNUAL RESPONDENTS: 6.7 respondents

**DESCRIPTION OF INFORMATION COLLECTION REQUIREMENTS CONTAINED IN
10 CFR PART 100
REACTOR SITE CRITERIA**

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10 CFR 100.21, "Non-seismic siting criteria," set forth the criteria that applicants must demonstrate in the license application 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 at least 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 to demonstrate that radiological effluent releases limits associated with normal operation and radiological dose consequences of postulated accidents can meet regulatory criteria.
- (d) Requires that the physical characteristics of the site, including meteorology, geology, seismology, and hydrology, must be evaluated and site characteristics established.
- (e) Requires that potential hazards associated with nearby transportation routes and industrial and military facilities be evaluated and site characteristics be established.
- (f) Requires site characteristics must be such that adequate security plans and measures that can be developed.
- (g) Requires that Impediments to emergency plans must be identified.
- (h) Indicates that sites should be located away from very densely populated centers.

10 CFR 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 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," or to applicants for a construction permit or operating license pursuant to 10 CFR Part 50, "Domestic Licensing of Production And Utilization Facilities."
- (b) Requires that the investigations required in paragraph (c) of 10 CFR 100.23 are not considered "construction" as defined in 10 CFR 50.10(a).

- (c) Requires the applicant for early site permit or combined license under 10 CFR Part 52, or construction permit or operating license under 10 CFR Part 50, investigate the geological, seismological, and engineering characteristics of a site and its environs in sufficient scope and detail to permit an adequate evaluation of the proposed site.
- (d) Requires the geologic and seismic siting factors considered for design must include a determination of the site-specific ground motion response spectrum 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 this section.

GUIDANCE DOCUMENTS FOR INFORMATION COLLECTION REQUIREMENTS
CONTAINED IN 10 CFR PART 100 REACTOR SITE CRITERIA
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Title	Accession Number
Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants (Rev. 1)"	ML070350028
Regulatory Guide 1.249, "Use of ARCON Methodology for Calculation of Accident-Related Offsite Atmospheric Dispersion Factors" (Rev. 0)	ML22024A241
Regulatory Guide 1.59, Design Basis Floods for Nuclear Power Plants (Rev. 2)	ML003740388
Regulatory Guide 1.91, Evaluations of Explosions Postulated to Occur on Transportation Routes Near Nuclear Power Plants (Rev. 3)	ML21260A242
Regulatory Guide 1.132, Site Investigations for Foundations of Nuclear Power Plants (Rev. 3)	ML21298A054
Regulatory Guide 1.138, Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants (Rev. 3)	ML14289A600
Regulatory Guide 1.198, Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites (Rev. 0)	ML033280143
Regulatory Guide 3.40, Design Basis Floods for Fuel Reprocessing Plants and for Plutonium Processing and Fuel Fabrication Plants (Rev. 1)	ML003739400
Regulatory Guide 4.2, Preparation of Environmental Reports for Nuclear Power Stations (Rev. 3)	ML18071A400
Regulatory Guide 4.7, "General Site Suitability Criteria for Nuclear Power Stations" (Rev. 3)	ML12188A053
NUREG-0800, SRP Section 2.0, "Site Characteristics and Site Parameters"	ML15279A105
NUREG-1537, Part 1, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors"	ML042430055
NUREG-1537, Part 2, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors. Standard Review Plan and Acceptance Criteria"	ML042430048
NSIR/DPR-ISG-02, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants" (interim Staff Guidance)	ML14106A057