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 (COL) or a construction permit (CP) or operating license (OL) on or after January 10, 1997.[1]

The NRC is expecting approximately two COL applications over the next 3 years. The applicants must provide information regarding the physical characteristics of the site in addition to the potential for natural phenomena and man-made hazards. This includes information on meteorological hazards (such as hurricanes, tornadoes, snowfall, and extreme temperatures), hydrologic hazards (such as floods, tsunami, 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.

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 COL for a nuclear power plant.

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 reviews the physical characteristics of the site in addition to the

[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.

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 CP, ESP, COL, or OL 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.

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), by facsimile 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 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.

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 December 10, 2020, (85 FR 79532). Additionally, NRC staff contacted seven stakeholders via email. The stakeholders were new and operating reactor owner licensee representatives from Dominion Generation, Duke Energy Carolinas, LLC, Entergy Nuclear Operations, Inc., Kairos Power, Oklo Power, LLC, Southern Nuclear Operations, Inc., and X-energy.

The NRC specifically sought input on the following questions by February 8, 2021, the NRC received two submissions as a result of the published FRN; Submitter 1, private citizen, Submitter 2, industry stakeholder:

1. Is the proposed collection of information necessary for the NRC to properly perform its functions? Does the information have practical utility?

Submitter 1 agreed with the NRC.

Submitter 2 provided the following comment: The collection of meteorological and seismic data by an onsite meteorological tower and onsite seismic sensors for three to five years of data may not be necessary in some cases. When sites are have well known seismic information from other sources, i.e. United States Geologic Service (USGS) and/or when the size of the nuclear powerplant is smaller and able to be seismically stabilized then this collection significantly extends the time and cost to prepare a site for licensing. When sites are appropriately closely located to meteorological stations where data can be extrapolated and/or triangulated to accurately evaluate the site and/or when the size of the nuclear powerplant is smaller and source terms are low enough to only require the Emergency Planning Zone (EPZ) to be located at the site boundary then this collection significantly extends the time and cost to prepare a site for licensing.

NRC staff's response:

10 CFR Part 100 "Reactor Site Criteria," (OMB 3150-0093), establishes the approval requirements for proposed sites for stationary power and testing reactors subject to 10 CFR, Part 50 and Part 52. The information in 10 CFR, Part 100 does not include requirements to collect onsite meteorological and seismic data for three to five years, or for any specified period. The NRC staff acknowledges that NRC Regulatory Guides provide more detailed guidance to applicants for meeting the NRC regulations and there are regulatory guides available to assist applicants in meeting 10 CFR, Part 100 requirements. Applicants can adopt alternative approaches suitable for a proposed site that

differ from the regulatory guides in order to meet the NRC requirements in 10 CFR Part 100.

2. Is the burden estimate accurate?

Submitter 1 agreed with the NRC.

Submitter 2 provided the following comment: We feel it takes about 600,000 hours project hours to complete an ESP and 71 months from start to ESP approval.

NRC staff's response:

It appears that the commenter's estimated 600,000 hours, as the burden of the information collection relevant to 10 CFR Part 100, Reactor Site Criteria, are related to a specific type of license application, i.e. Early Site Permit (ESP) applications. This burden of ESP application is covered under approved OMB Clearance (3150-0151). NRC staff estimates the project hours without considering any specific license applications or any site-specific conditions. Instead, the NRC staff estimates the project hours to be 73,000 hours per application in completing or complying with the requirements in 10 CFR Part 100 only, which is based on NRC's data analysis results, as well as staff's continuous interaction with industry, for an average on various types of license application**s** and multiple site conditions.

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

Submitter 2 agreed with the NRC.

Submitter 1 provided the following comment: Third, the NRC Staff and the industry gained significant experience with the dozens of applications filed subsequent to the promulgation of the Energy Policy Act of 2005. Complementary to the safety review for new applications, the NRC Staff must conduct a review under Part 51 that addresses impacts of certain environmental factors that require the participation of similar technical specialists as those involved in the Site Safety review; similarly, information collected for the safety review may also be used for the environmental review. Unlike the safety review, where the Applicant's Safety Analysis Report becomes part of the licensing basis, it is the NRC Staff's Environmental Impact Statement (and not the applicant's Environmental Report) that becomes part of the licensing basis. Consequently, the NRC initiated opportunities for the Applicant to have a series of pre-application interactions with the Staff to ensure that there is a clear understanding of the NRC requirements (Applicants often rely upon consultants with varying degrees of understanding of regulatory requirements and guidance) and to describe the activities that it is undertaking or planning to undertake to meet such requirements. Invariably, applicants that took full advantage of such pre-application interactions delivered high quality, thorough and complete applications with useful and clearly described analyses and conclusions. Such

interactions resulted in fewer needs for Requests for Additional Information and fewer resources to conduct the review; this opportunity for pre-application interactions gained traction with design reviews and should be encouraged for the Site Safety Review as well to enhance the quality, usefulness and thoroughness of Applicants' submittals.

NRC staff's response:

The NRC staff agrees with the public comments. NRC has always provided applicants, public pre-application meetings and continues to strive for open collaborative interactions with our stakeholders and the public.

4. How can the burden of the information collection be minimized, including the use of automated collection techniques or other forms of information technology?

Submitter 1 provided the following comment: Fourth, advancements in information technology can assist prospective Applicants in assembling and filing the reactor site information included in its Safety Analysis Report. Consequently, the NRC should periodically reconsider the number of copies that need to be provided by the Applicant for NRC Staff use. Nevertheless, there is a need for such information to be available for the public in close proximity to the proposed site and, even with the advanced stage of digital information that is commonly available, some members of the public still do not have access to computers or high-speed internet to ensure that they can participate effectively in NRC licensing activities. For this reason, I still encourage a local reading room for information to made available in paper form.

NRC staff's response:

In 2000, the NRC discontinued supplying documents to the existing Local Public Document Rooms when the Agency-wide Documents Access and Management System (ADAMS) was made publicly available. At that time, the NRC also declared that ADAMS was the official agency repository for its documents, and the agency would no longer be releasing information in printed form. For the last two decades of the twentieth century, the agency supplied microfiche copies of agency documents, both to the Local Public Document Rooms and through the Depository Library System across the country. The agency still receives questions from the public through the existing agency Public Document Room, where there are librarians to search ADAMS in response to public questions, as we have done since 2000. Public users can submit their questions and/or requests to the PDR.Resource@NRC.gov, or by telephone to the Public Document Room for help obtaining information. Both the mailbox and the voicemail box are monitored by the librarians, who provide prompt responses, search guidance for users, ADAMS training, or ADAMS search results, as needed. This transformation from print to electronic resources is in accord with federal records policy, from the National Archives and Records Administration (NARA); as a policy, the government has moved to providing information through electronic resources rather than printed material. Public users can also obtain

assistance from the local libraries in the Depository Library System. There is at least one such library in every state.

Submitter 2 provided the following comment: Consider the ability to use data for USGS and National Weather Service (NWS) to generate seismic and meteorological information rather than requiring on site physical equipment. The data from these systems today is very accurate and used in the current operation of the site (i.e., NWS for storms along with USGS for flooding models). The NWS data is trusted as the backup and used as a comparison for emergency drills or actual events when issues with the meteorological tower is non-functioning.

NRC staff's response:

NRC staff considers the information and data available from the U.S. Geological Survey (USGS), and the National Weather Service (NWS) to be useful for site evaluation and plant operation. The data provided by the USGS, the NWS, as well as other federal, state, and local entities provide useful supplemental data in characterizing a proposed site and determining necessary site and engineering parameters to meet the reactor site criteria in 10 CFR Part 100. An applicant must also rely on details of its site-specific investigations, including the collection of onsite geophysical borehole data to determine both seismic and structural engineering parameters, and the collection of onsite wind data used to determine atmospheric dispersion parameters.

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

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

Over the next 3 years, the NRC expects two applications for an average of 0.66 application per year, which is consistent with the current estimates. This data is based on estimates received from applicants surveyed to determine the forecast of future applications.

For each application, the estimated burden for 10 CFR Section 100.21 (Non-seismic siting criteria) is 22,000 hours and for 10 CFR Section 100.23 (Geologic and seismic siting criteria) is 51,000 hours. Thus, the total burden for collecting and reporting information concerning the potential for natural phenomena and man-made hazards at a proposed nuclear power plant site is estimated at 73,000 hours per application. These estimates assume that 30 percent of the total burden hours are associated with non-seismic siting criteria and 70 percent are associated with geologic and seismic siting criteria.

Annually, the total estimated burden is 48,180 hours (73,000 hours per application x 0.66 application) and the total estimated cost is $13,442,220 (48,180 hours x $279). See Table 1.

The $279 hourly rate used in the burden estimates is based on the Nuclear Regulatory Commission's fee for hourly rates as noted in 10 CFR 170.20 "Average cost per professional staff-hour." For more information on the basis of this rate, see the Revision of Fee Schedules; Fee Recovery for Fiscal Year 2020 (85 FR 37252, June 20, 2020).

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 is estimated at approximately 5,000 hours per application, for an estimated annual cost of $920,700 (5,000 hours x 0.66 application x $279/hour).

15. Reasons for Change in Burden

The total burden estimate for this information collection has decreased by 46,720 hours from 94,900 to 48,180 hours annually.

This decrease is due to:

- The estimate for the number of hours to complete an application is unchanged at an estimated 73,000 hours per application (is based on estimates from applicants whose estimated burden ranged from 64,000 hours to 90,000 hours), and the anticipated number of applications has decreased from 1.3 to 0.66 annually.

- In addition, there has been a decrease in the overall cost as a result of a decrease in predicted applicants from 4 to 2 in the next 3 years. At this

time, staff has not received any indication from industry beyond the anticipated number of applications to be submitted during the clearance period.

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

Annualized Reporting Burden

Section	No. of Respondents	Responses per Respondent	Total No. of Responses	Burden Hours per Response	Total Annual Reporting Burden (Hours)
Non-seismic siting criteria (10 CFR 100.21)	0.66	1	0.66	22,000	14,520
Geologic and seismic siting criteria (10 CFR 100.23)	0.66	1	0.66	51,000	33,660
TOTAL	0.66	1	0.66	73,000	48,180

TOTAL BURDEN HOURS: 48,180 hours
TOTAL BURDEN HOUR COST: 13,442,220 (73,000 hours per respondent x 0.66 respondent x $279/hour)
ANNUAL RESPONDENTS: 0.66 respondent

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

(3150-0093)

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 met 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 CFR100.23, “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 it 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
(3150-0093)

Title	Accession Number
Regulatory Guide 1.23, Meteorological Monitoring Programs for Nuclear Power Plants	ML070350028
Regulatory Guide 1.59, Design Basis Floods for Nuclear Power Plants	ML003740388
Regulatory Guide 1.91, Evaluations of Explosions Postulated to Occur on Transportation Routes Near Nuclear Power Plants	ML12170A980
Regulatory Guide 1.132, Site Investigations for Foundations of Nuclear Power Plants	ML032800710
Regulatory Guide 1.138, Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants	ML14289A600
Regulatory Guide 1.198, Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites	ML033280143
Regulatory Guide 3.40, Design Basis Floods for Fuel Reprocessing Plants and for Plutonium Processing and Fuel Fabrication Plants	ML003739400
Regulatory Guide 4.2, Preparation of Environmental Reports for Nuclear Power Stations	ML18071A400
Regulatory Guide 4.7, General Site Suitability Criteria for Nuclear Power Stations	ML12188A053
NUREG-800, 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.	ML12156A069
NUREG-1537, Part 2, “Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors: Standard Review Plan and Acceptance Criteria	ML12156A075
JLD-ISG-12-04, Interim Staff Guidance on Performing a Seismic Margin Assessment in Response to the March 2012 Request for Information Letter	ML12286A029
JLD-ISG-12-05, Interim Staff Guidance on Performance of an Integrated Assessment for Flooding	ML12311A214

Title	Accession Number
JLD-ISG-12-06, Interim Staff Guidance for Performing a Tsunami, Surge, or Seiche Hazard Assessment	ML12314A412
JLD-ISG-13-01, Interim Staff Guidance for Assessment of Flooding Hazards Due to Dam Failure	ML13151A153
NSIR/DPR-ISG-02, Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants	ML14106A057