PREDECISIONAL
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SUPPORTING STATEMENT FOR

INFORMATION COLLECTIONS CONTAINED IN

MITIGATION OF BEYOND-DESIGN-BASIS EVENTS
FINAL RULE

10 CFR PART 50 AND PART 52

(OMB CLEARANCE NO. 3150-0011)

DESCRIPTION OF THE INFORMATION COLLECTION

The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to establish regulatory requirements to mitigate beyond-design-basis events. The Mitigation of Beyond-Design-Basis Events (MBDBE) rule is to achieve the following regulatory objectives:

(1) Make the requirements of Order EA-12-049, *Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events*,[1] and Order EA-12-051, *Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,*[2] generically applicable.

(2) Establish regulatory requirements for an integrated response capability, including supporting requirements for staffing, command and control, drills, training and documentation of changes.

(3) Address a number of petitions for rulemaking (PRMs) submitted in the aftermath of the March 2011 Fukushima Dai-ichi event.

This analysis addresses only the information collections associated with the MBDBE rule requirements that contain an incremental change in burden relative to existing rules, Orders, and industry initiatives. The MBDBE rule encompasses provisions that are currently being implemented by Order EA-12-049, Order EA-12-051, and related industry initiatives. The paperwork burden associated with the MBDBE rule largely results from licensee's review of the rule to confirm compliance with the Order requirements (i.e., a comparison of the MBDBE rule requirements with the Orders and related industry initiatives and updates to procedures, programs, or plans).

This paperwork burden analysis does not estimate the recordkeeping and reporting burden associated with the Orders. Upon renewal of the Office of Management and Budget (OMB) clearance for Part 50, the NRC anticipates accounting for additional paperwork burden associated with the Orders and implementation of specific rule provisions (e.g., drills or exercises).

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1 Available at ADAMS ML12054A735
2 Available at ADAMS ML12056A044

Affected Entities

The MBDBE rule requirements would impact nuclear power plants (NPPs) at the site level. Therefore, the incremental burdens associated with the MBDBE rule are expressed in terms of NPP sites. The NRC estimates the burdens incurred by 55 operating sites, based on the announced decommissioning intentions (i.e., Fort Calhoun has entered decommissioning, Clinton, FitzPatrick, Oyster Creek Pilgrim and Quad Cities have announced plans to decommission). Two of the operating sites (i.e., V.C. Summer and Vogtle) are constructing new AP1000 reactor units on existing operating sites. Because information collections are estimated at the site-level, the new reactors are accounted for as part of the operating site on which they are co-located.

A. JUSTIFICATION

1. Need for and Practical Utility of the Information

The NRC has developed the MBDBE rulemaking, in large measure, to make generically applicable the regulatory actions taken following the events at the Fukushima Dai-ichi nuclear power plant resulting from the March 11, 2011 Great Tōhoku Earthquake and subsequent tsunami. Current NRC regulations do not incorporate requirements to implement strategies and guidelines for the mitigation of beyond-design-basis external events (referred to, in the nuclear industry, as the diverse and flexible coping strategies (FLEX)). These strategies are implemented by FLEX support guidelines or FSGs, and provide additional capability to address the uncertainties associated with beyond-design-basis external events (e.g., events arising from severe natural phenomena). The MBDBE rulemaking makes generically applicable requirements similar to those imposed by Order EA-12-049, Order EA 12-051, and other post-Fukushima industry initiatives.

The NRC has determined that the information collections associated with the MBDBE rule are necessary in order to place the requirements in Order EA-12-049 and Order EA-12-051 into the NRC's regulations to provide regulatory clarity to operating reactors and to ensure that they apply to all current and future power reactor applicants. Operating reactor licensees and a number of combined license (COL) holder reactor sites currently are subject to the Order requirements. Any future licensees would not be covered by the Order requirements. In making the requirements of Order EA-12-049 generically applicable, this rule also ensures that the seismic and flooding reevaluated hazard information stemming from the March 12, 2012, NRC letter issued under 10 CFR 50.54(f) [3] is addressed within the mitigation strategies consistent with the Commission direction provided in SRM-COMSECY-14-0037. In the absence of a rule, these requirements would need to be implemented for new reactor sites through additional Orders or license conditions (as was done for the Enrico Fermi Nuclear Plant Unit 3, Virgil C. Summer Nuclear Station Units 2 and 3, and Vogtle Electric Generating Plant Units 3 and 4 COLs), which would impose additional costs on the NRC.

The MBDBE rulemaking, both the regulation and its supporting guidance, also enhances regulatory efficiency by reflecting stakeholder feedback provided in response to the proposed rule (issued for comment on November 13, 2015, 80 FR 70609), as a result of lessons learned

[3] Information collections contained in the March 12, 2012 NRC letter issued under 10 CFR 50.54(f) were approved by OMB under clearance 3150-0211.

from the implementation of the Orders, including any challenges or unintended consequences associated with implementation.

The specific information collections associated with the MBDBE revisions and amendments to Part 50 are identified below.

Section 50.34(i) requires applicants for power reactor operating licenses to include plans for implementing the requirements in 50.155, "Mitigation of Beyond-Design-Basis Events," including a schedule for achieving full compliance, a description of the integrated response capability, and the equipment and location of the equipment upon which the strategies rely.

Section 50.155 causes licensees to review their previous compliance under Orders EA-12-049 and EA-12-051 against the MBDBE rule requirements to both confirm their compliance with the MBDBE rule, as well as, to make changes to procedures, program, and plans to reference the new MBDBE rule requirements (rather than the Order requirements). Sites would incur a one-time recordkeeping burden to review procedures, programs, and plans to confirm that they are consistent with the rule requirements. The incremental one-time recordkeeping burden associated with this requirement is included in Table 1.

Section 50.155(b)(1) requires licensees to develop strategies and guidelines to mitigate beyond-design-basis external events from natural phenomena that are developed assuming a loss of all ac power concurrent with either a loss of normal access to the ultimate heat sink or loss of normal access to the normal heat sink. These requirements were established under Order EA-12-049 and licensees have already completed this requirement. Any ongoing burden for this requirement will be captured in the burden estimates for the renewal of 10 CFR Part 50 (3150-0011).

Section 50.155(b)(2) causes licensees to address the seismic and flooding reevaluated hazard information within the mitigation strategies and guidelines. Addressing the reevaluated hazard information in accordance with § 50.155(b)(2) results in licensees having to make changes to FLEX programs, implementing procedures and program plans, and to respond to requests for additional information. Additionally, the NRC expects that there will be a continuing recordkeeping burden to maintain the analyses and FLEX program that stems from the consideration of the reevaluated hazard information. This burden is included in Table 2.

Section 50.155(b)(3) requires licensees to develop strategies and guidelines to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant impacted by the event, due to explosions or fire. These requirements were established under Order EA-12-049 and licensees have already completed this requirement. Any ongoing burden for this requirement will be captured in the burden estimates for the renewal of 10 CFR Part 50 (3150-0011).

Section 50.155(g) requires licensees to maintain documentation of changes in the implementation of the requirements of section 50.155. This burden is included in Table 2.

Section 50.155 (h)(2) provides licensees with a flexible schedule option. This provision is to allow flexibility for licensees, that are required to address the reevaluated hazard information under 10 CFR 50.155(b)(2), and who determine that the compliance date of 2 years is not feasible. Licensees, at their option, may submit to the NRC a request to revise the compliance date, provided they show good cause to support their request for a revised compliance date.

Licensees who use this option will incur a one-time recordkeeping burden, and this information collection is included in Table 1.

Section 52.80(d) requires applicants for power reactor operating licenses under Part 52 to include in their applications information on the plan for implementing the requirements of 10 CFR 50.155(b) including a schedule for achieving compliance as well as a description of the integrated response capability required by 50.155(b) and the requirement and planned locations of the equipment on which the strategies and guidelines will rely. This is the same requirements as that contained in Section 50.34(i) for applicants for a new power reactor operating license under Part 50. The burden for applicants for power reactor combined licenses under Part 52 is accounted for under the burden for Part 50.34 and is included in Table 1. The NRC does not expect any new applicants under Part 50 for an operating license or under Part 52 for a combined license for the next three years.

2. Agency Use of the Information

The information identified will be used to determine licensee compliance with the requirements of the MBDBE rule and thus ensure that the power reactor licensees have developed additional capability to respond to events exceed the external design basis of the facility (e.g., events arising from severe natural phenomena), have implemented these capabilities with emergency operating procedures and their command and control structures for directing and performing strategies and guidelines when required, and have trained and qualified key personnel in these strategies through the use of drills. If not in compliance, the information will allow NRC to assess how and when compliance to the applicable requirements will be achieved.

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 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.

4. Effort to Identify Duplication and Use Similar Information

No sources of similar information are available. There is no duplication of requirements. The NRC has in place an ongoing program to examine all information collections with the goal of eliminating all duplicate and/or unnecessary information collections.

5. Effort to Reduce Small Business Burden

The NRC has determined that the affected entities are not small entities or businesses as those terms are used in the Regulatory Flexibility Act.

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

If the information were not collected, or collected less frequently, the NRC would be unaware for extended periods of time whether licensees have improperly implemented and complied with the MBDBE rule including proper integration of the new capabilities required under the MBDBE

rule; documented command and control structures; developed training materials as well as documented training; developed drill or exercise programs in accordance with the rule; or developed change control procedures, programs, or plans. Less frequent collection could adversely affect public health and safety.

7. Circumstances which Justify Variations from OMB Guidelines

This section identifies incremental recordkeeping and reporting burdens as a result of the rule that vary from OMB guidelines established in 5 CFR 1320.5(d)(2).

Operating reactors are required to comply with the information collections until the Commission terminates the license, which is initially issued for 40 years and may be subsequently renewed for an additional 20 years. Decommissioning reactors must comply with the information collection requirements until the spent fuel pools (SFPs) are empty of all irradiated fuel (or until an exemption is granted by the NRC). These requirements vary from the OMB guidelines in 5 CFR 1320.5(d)(2)(i) and (iv) by requiring licensees and other entities to report information to the NRC more often than quarterly and to retain records for more than 3 years, respectively. The specific provisions of the proposed rule that vary from OMB guidelines are Sections 50.155(a)(1) through (a)(2).

Per Section 50.155(a)(1), the requirements in Section 50.155 apply throughout the life of each site's operating license, until the requirements are removed in accordance with the provisions in Section 50.155(a)(2) as discussed below.

Section 50.155(a)(2) establishes when these requirement end for licensees of decommissioning power reactors. This section allows licensees to end compliance with the portions of this rule that apply to the reactor source term and associated fission product barriers when all fuel has been permanently removed from the reactor vessel and placed in the SFP (i.e., no further requirement to comply with provisions that are associated with maintaining or restoring core cooling or primary containment functional capabilities). This section maintains SFP cooling and secondary containment requirements (for reactor designs that employ this feature as a fission product barrier) for the SFP source term. This section allows licensees to end compliance with all the provisions in this rule once the SFP is empty of irradiated fuel.

These variations from the OMB guidelines are justified because the information collections are needed to ensure that the sites have the strategies and guidelines available to assist with the mitigation of beyond-design-basis events.

8. Consultations Outside the NRC

The information collection requirements were published for public comment in the *Federal Register* on November 13, 2015 (80 FR 70609). No comments were received on the proposed information collections as a result of public comment requests. However comments were received on the proposed MBDBE rule requirements that suggested the need for a flexible scheduling provision to be included in the final MBDBE rule. In response to these public comments, this provision was added to Section 50.155(h)(2). A full summary of comments and responses related to information collection are included in "NRC Response to Public Comments: Mitigation of Beyond-Design-Basis Events Rule," (ADAMS Accession No. ML16271A063). This flexible scheduling provision is now included in the final MBDBE rule, which results in a one-time recordkeeping burden provided in Table 1.

The MBDBE rulemaking consolidates two previous rulemaking efforts: the Station Blackout Mitigation Strategies (SBOMS) rulemaking and the Onsite Emergency Response Capabilities rulemaking. Both regulatory efforts offered extensive external stakeholder involvement opportunities, including public meetings, Advance Notices of Proposed Rulemaking (ANPRs) issued for public comment, and draft regulatory basis documents issued for public comment. The following were the major opportunities for stakeholder involvement:

- Station Blackout ANPR (77 FR 16175; March 20, 2012);
- Onsite Emergency Response Capabilities ANPR (77 FR 23161; April 18, 2012);
- SBOMS draft regulatory basis and draft rule concepts (78 FR 21275; April 10, 2013). The final regulatory basis was subsequently issued on July 23, 2013 (78 FR 44035);
- Onsite Emergency Response Capabilities draft regulatory basis (78 FR 1154; January 8, 2013). The final Onsite Emergency Response Capabilities regulatory basis, with preliminary proposed rule language, was subsequently issued on October 25, 2013 (78 FR 63901); and
- Preliminary proposed rule language for Onsite Emergency Response Capabilities (78 FR 68774; November 15, 2013).

The public has had additional opportunities to engage in these regulatory efforts for the MBDBE rulemaking. Most noteworthy were the following:

- Consolidated rulemaking proof of concept language published on February 21, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14052A057);
- Preliminary proposed rule language for consolidated rulemaking published August 15, 2014 (ADAMS Accession No. ML14218A253);
- Preliminary proposed rule language for consolidated rulemaking published November 13, 2014 (ADAMS Accession No. ML14316A297), and December 8, 2014 (ADAMS Accession No. ML14336A641), to support public discussion with the Advisory Committee on Reactor Safeguards (ACRS).
- Proposed MBDBE rulemaking issued for a 90-day public comment period on November 13, 2015 (80 FR 70609).
- Public meeting held on January 21, 2016 to discuss the proposed rule with external stakeholders and thereby enable more informed feedback to be provided on the proposed rule.
- Public meeting held on November 10, 2016 to discuss the implementation schedule for the MBDBE rule and obtain feedback concerning cumulative effects of regulation, which could then be used to make appropriate adjustments to rule compliance dates.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of Information

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

11. Justification for Sensitive Questions

There are no sensitive questions included in these information collections.

12. Estimate of Industry Burden and Cost

During the clearance period, there are a total of 55 respondents to the information collection. All of these respondents are nuclear power reactor licensees. In the first three years after the effective date of the rule (the clearance period covered by this supporting statement):

- 55 respondents will review the rule requirements and update site procedures, programs, or plans
- No respondents are expected to use the optional provision to submit to the NRC a unit-specific implementation schedule with a request to use the flexible scheduling provision along with supporting evidence demonstrating good cause for using that provision and for making regulatory determinations regarding the seismic and flooding reevaluated hazard information.
- 55 respondents will submit documentation to the NRC with the results of their seismic and flooding reevaluated hazard assessments.

The burden associated with the information collections is given in Table 1. The one-time costs are annualized in this analysis by dividing by the number of years covered by the clearance (3 years). The annual fee rate of $265 is used for all costs. The total burden is 32,615 hours at a cost of $8,642,975 (32,615 x $265/hour). Annual burden begins the first year after the rule becomes effective with the licenses maintaining supporting analyses and program documentation. The burden associated with this annualized recordkeeping is given in Table 2. The total annual burden is estimated as 16,610 hours at a cost of $4,401,650 (16,610 x $265/hour). The cost per respondent and is expected to remain constant over the full term of the rule although the number of respondents will decrease as nuclear power plant licenses expire or are shut down.

The total estimated burden for the final rule, including both implementation costs and annual burdens, is 49,225 hours at a cost of 13,044,625 (49,225 hrs x $265/hr).

13. Estimate of Other Additional Cost

The NRC has determined that the records storage cost is roughly proportional to the recordkeeping burden cost. Based on a typical clearance, the recordkeeping storage cost has been estimated to be equal to .0004 percent of the recordkeeping burden. Therefore, the additional recordkeeping storage cost for 10 CFR Part 50 is estimated to be $1,761 (16,610 recordkeeping hours x $265/hour x .0004).

14. Estimated Annualized Cost to the Federal Government

None.

15. Reasons for Changes in Burden or Cost

The estimated burden for the information collections associated with the MBDBE final rule is 49,225 hours. This estimate is composed of one-time and ongoing annual reporting and recordkeeping requirements.

The information collection requirements associated with the rule include reviewing the rule provisions to ensure that current practices satisfy the requirements of the rule; maintaining

records of the FLEX program, procedures, and program changes; and submitting voluntary requests for revised compliance schedules. The NRC anticipates that some changes may be needed to procedures, programs, or plans.

16. Publication for Statistical Use

The collected information is not 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

None.

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

Not applicable.

Table 1: Annualized One-Time Reporting Burden

Information Collection Section	Number of Respondents	Number of responses per respondent	Number of Responses	Burden Hours per Response	Total Annual Burden Hours	Cost @ $265/hr
10 CFR 50.34(i) Part 50 applicants provide plans for implementing rule requirements in application	0	1	0	300	0	$0
10 CFR 50.155(b)(1) Develop strategies and guidelines to mitigate beyond-design-basis external events from natural phenomena	0	1	0	500	0	$0
10 CFR 50.155(b)(2) Address the seismic and flooding reevaluated hazard information	55	1	55	593	32,615	$8,642,975
10 CFR 50.155(b)(3) Develop strategies and guidelines to mitigate beyond-design-basis external events resulting from the loss of large areas of the plant due to explosions or fire	0	1	0	500	0	$0
10 CFR 50.155 (h)(2) Licensee submittal to request a revised compliance data based on good cause	0	1	0	150	0	$0
10 CFR 52.80(d) Part 52 applicants provide plans for implementing rule requirements in application similar to the 10 CFR 50.34(i) requirement for new Part 50 applicants	0	1	0	300	0	$0
Totals:	55		55		32,615	$8,642,975

Note: The burden hours per recordkeeper are based on the estimates used in the regulatory analysis for the rule. The NRC burden hours in this supporting statement reflect the hours required for recordkeeping activities only, while the regulatory analysis includes hours for additional activities.

Table 2: Annualized Recurring Recordkeeping Burden

Information Collection Section	Number of Respondents	Number of responses per respondent	Number of Responses	Burden Hours per Response	Total Annual Burden Hours	Cost @ $265/hr
10 CFR 50.155(a)(1) Licensees review rule requirements and update procedures, programs, or plans	55	1	55	100	5,500	$1,457,500
10 CFR 50.155(b)(2) Maintain reevaluated hazard information within FLEX program, procedures, and program changes	55			101	5,555	$1,472,075
10 CFR 50.155(g) Maintain FLEX program, procedures, and program changes	55				11,055	$2,929,575
Totals:	110			101	16,610	$4,401,650

Total Burden Hours:	49,225
Total Burden Hour Cost:	$13,044,625
Annual Respondents:	55
Responses:	165

Table 3: Annualized One-Time NRC Review Burden

Information Collection Section	Number of Respondents	Number of responses per respondent	Number of Responses	Burden Hours per Response	Total Annual Burden Hours	Cost @ $265/hr
10 CFR 50.155(b)(2)						
NRC review of seismic and flooding reevaluated hazard assessments	55	1	55	150	8,250	$2,186,250
10 CFR 50.155(h)(2)						
NRC review of Licensee submittal to request a revised compliance data based on good cause	0	1	0	50	0	$0
Totals:	55				8,250	$2,186,250