



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 3, 2019

The Licensees of Operating Power Reactors  
on the Enclosed List

SUBJECT: TREATMENT OF REEVALUATED SEISMIC HAZARD INFORMATION  
PROVIDED UNDER TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS*  
50.54(f) REGARDING RECOMMENDATION 2.1 OF THE NEAR-TERM TASK  
FORCE REVIEW OF INSIGHTS FROM THE FUKUSHIMA DAI-ICHI ACCIDENT

This document describes the U.S. Nuclear Regulatory Commission (NRC) staff's treatment of reevaluated seismic hazard information. The treatment of seismic hazard information reflects the Commission's direction in the Affirmation Notice and Staff Requirements Memorandum (SRM) dated January 24, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19023A038), associated with SECY-16-0142, "Draft Final Rule – Mitigation of Beyond-Design-Basis Events [MBDBE] (RIN 3150-AJ49)," (ADAMS Accession No. ML16291A186). Based on the reevaluated seismic hazard information that has been provided to date, only seismic probabilistic risk assessment (SPRA) report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending or revoking a license. The staff has evaluated the status of each site and placed sites into one of four categories: category 1 (no additional regulatory action is warranted); category 2 (additional insights needed); category 3 (ongoing review); and category 4 (deferred). Enclosure 1, Table 1 provides the status of sites based on the staff's review of the reevaluated seismic hazard information and backfit determinations to date. The NRC staff has suspended its review of seismic mitigation strategies assessments (MSAs).

### Summary

By letter dated March 12, 2012 (ADAMS Accession No. ML12053A340), the NRC issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, under Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) (hereafter referred to as the "50.54(f) letter"). The request was issued in connection with implementing lessons learned from the 2011 accident at the Fukushima Dai-ichi nuclear power plant, as documented in the NRC's Near-Term Task Force (NTTF) report (ADAMS Accession No. ML111861807). Enclosure 1 of the 50.54(f) letter requested that licensees reevaluate seismic hazards for their sites using present-day methods and regulatory guidance used by the NRC staff when reviewing applications for early site permits and combined licenses.

The 50.54(f) letter describes a two-phase process for providing and assessing this information. Phase 1 of the process is defined in the 50.54(f) letter as licensees reevaluating the seismic hazards at their sites using updated seismic hazard information and present-day regulatory guidance and methodologies, and, if necessary, to request they perform a risk evaluation. Phase 2 of the process is outlined by the 50.54(f) letter and is defined as the NRC staff determining whether additional regulatory actions are necessary (e.g., update the design basis and structures, systems, and components (SSCs) important to safety) to provide additional

protection against the updated hazards. In implementing the NRC's Phase 2 process, the staff will follow the guidance provided in a memorandum dated September 21, 2016 (ADAMS Accession No. ML16237A103), which remains in accordance with the most recent Commission direction provided in SRM-SECY-18-0049, "Management of Facility-Specific Backfitting, Issue Finality, and Information Collection," (ADAMS Accession No. ML19149A294).

The staff's treatment of the reevaluated hazard information outlined in this document used information provided in response to the 50.54(f) letter and describes how the staff is using this information for its Phase 2 decisionmaking. Highlights of the staff's progress in this area are as follows:

- Only SPRA report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending or revoking a license in accordance with the Phase 2 process. The staff will continue its assessment of SPRA reports and will use these results in the Phase 2 process described in the 50.54(f) letter and by the memorandum dated September 21, 2016.
- The staff has suspended its review of seismic MSAs. The majority of these MSAs have previously been evaluated by the staff. For the reviews not yet completed, or not yet submitted, the staff will evaluate the mitigation strategies, as appropriate, as part of its review of SPRA reports. Licensees are no longer expected to submit MSAs associated with their reevaluated seismic hazard.
- To provide clarity regarding the status of each site's response to the 50.54(f) letter, this letter bins sites in one of the following four categories:
  - Category 1 – No additional regulatory action is warranted. This Category groups the sites where licensees and NRC staff are done with the seismic reevaluation assessments and backfit decisions. There are 47 sites in this category.
  - Category 2 – Additional insights are needed before a backfit decision is made. There are no sites in this category.
  - Category 3 – Corresponds to sites that have reevaluated seismic information that will be reviewed by the staff. This Category includes sites that have active SPRA report reviews or that will submit an SPRA report before the end of 2019. The NRC staff has not make a final backfit determination on these sites. There are 9 sites in this category.
  - Category 4 – Corresponds to sites that have had, or requested that, reevaluated hazard information submittals be deferred to a date after the licensee's proposed date to shut down its reactor(s). There are three sites in this category.

## Background

The seismic reevaluated hazard information provided in response to the 50.54(f) letter was the focus of the seismic hazard screening reports. Depending on the site-specific reevaluated seismic hazard, other necessary licensee submittals may have included: 1) an expedited seismic evaluation process (ESEP) report, 2) seismic MSA; 3) spent-fuel pool (SFP) seismic integrity evaluation; 4) seismic high frequency confirmation; and/or 5) SPRA report.

The staff's discussion of the reevaluated hazard information that has been provided by licensees in response to the 50.54(f) letter is found in Enclosure 1 of this document.

The draft final MBD BE rule, provided in SECY-16-0142, contained provisions that would have required mitigation strategies to address the reevaluated seismic hazard information on a generic basis. As reflected in the Affirmation Notice and SRM dated January 24, 2019, the Commission determined that addressing the reevaluated hazards in their mitigation strategies

on a generic basis was not needed for adequate protection of public health and safety but would instead be assessed on a plant-specific, case-by-case basis under the requirements of 10 CFR § 50.109, "Backfitting," and § 52.98, "Finality of combined licenses; information requests."

The January 24, 2019, SRM directs the staff to use the 50.54(f) process to ensure that the NRC and its licensees will take the needed actions, if any, to ensure there is no undue risk to public health and safety due to the potential effects of the reevaluated seismic hazards. The SRM further directs that the staff should continue these efforts, utilizing existing agency processes to determine whether an operating power reactor license should be modified, suspended, or revoked in light of the reevaluated hazard.

#### Determination

As described in Enclosure 1, the staff has reviewed the reevaluated seismic hazard information that has been provided to date and issued corresponding staff assessments for many sites. The conclusions documented in those assessments remain valid based on the demonstrated inherent capacity of SSCs and portable equipment. Furthermore, the staff has determined that only SPRA report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending or revoking a license in accordance with the Phase 2 process.

#### Stakeholder Interactions

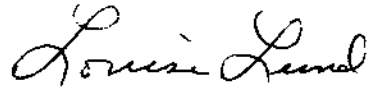
Treatment of the reevaluated hazard information was discussed in a February 28, 2019 (ADAMS Accession No. ML19052A511), public meeting. During this meeting, the staff provided an overview of the preliminary determination process (ADAMS Accession No. ML19037A443) and sought questions and comments from interested stakeholders. The NRC meeting materials are available under ADAMS Accession No. ML19042A683. The staff's treatment of reevaluated seismic hazards reflected in this letter considers the comments received at the February 28, 2019, public meeting, as well as comments submitted to the staff by letter dated March 27, 2019 (ADAMS Accession No. ML19095B537) from the Nuclear Energy Institute.

#### Conclusion

Based on the staff's evaluation provided in Enclosure 1, the staff has determined that the conclusions documented in each of the reevaluated seismic hazard staff assessments issued to date remain valid and additional regulatory actions are not warranted for those sites. Reviews will continue to be performed for SPRA reports that have been received by the staff and are currently under review. Additionally, the staff will continue to use the same process to review SPRA reports that are scheduled to be submitted through the end of 2019. A small number of sites have received SPRA report deferral approvals corresponding to planned plant closures. Enclosure 1, Table 1 provides a status of the staff's review of the reevaluated seismic hazard information and the seismic binning for each site.

If you have any questions, please contact Milton Valentin-Olmeda at 301-415-2864, or by e-mail at [Milton.Valentin-Olmeda@nrc.gov](mailto:Milton.Valentin-Olmeda@nrc.gov).

Sincerely,

A handwritten signature in cursive script that reads "Louise Lund".

Louise Lund, Director  
Division of Licensing Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Treatment of Reevaluated Seismic Hazard Information
2. List of Licensees

cc w/encls: Distribution via list serv

**Treatment of Reevaluated  
Seismic Hazard Information**

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## 1.0 Introduction and Summary

This document describes the U.S. Nuclear Regulatory Commission (NRC) staff's process for reviewing the reevaluated seismic hazard information in backfit determinations. The process reflects the Commission's direction in the Affirmation Notice and Staff Requirements Memorandum (SRM) dated January 24, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19023A038), associated with SECY-16-0142, "Draft Final Rule – Mitigation of Beyond-Design-Basis Events [MBDBE] (RIN 3150-AJ49)," (ADAMS Accession No. ML16291A186). The preliminary process was first described in a discussion paper (ADAMS Accession No. ML19037A443), which was the subject of a public meeting held on February 28, 2019 (ADAMS Accession No. ML19052A511). Stakeholder feedback from that meeting submitted in a letter dated March 27, 2019 (ADAMS Accession No. ML19095B537) has been considered in the development of this process for reviewing reevaluated seismic hazard information.

By letter dated March 12, 2012 (ADAMS Accession No. ML12053A340), the NRC issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, under Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) (hereafter referred to as the "50.54(f) letter"). The request was issued in connection with implementing lessons learned from the 2011 accident at the Fukushima Dai-ichi nuclear power plant, as documented in the NRC's Near-Term Task Force (NTTF) report (ADAMS Accession No. ML111861807). Enclosure 1 of the 50.54(f) letter requested that licensees reevaluate seismic hazards for their sites using present-day methods and regulatory guidance used by the NRC staff when reviewing applications for early site permits and combined licenses.

The 50.54(f) letter describes a two-phase process for providing and assessing this information. Phase 1 of the process is defined in the 50.54(f) letter as licensees reevaluating the seismic hazards at their sites using updated seismic hazard information and present-day regulatory guidance and methodologies, and, if necessary, perform a risk evaluation. These evaluations associated with the requested information do not revise the design basis of the plant. Phase 2 of the process is outlined by the 50.54(f) letter and is defined as the NRC staff determining whether additional regulatory actions are necessary (e.g., update the design basis and structures, systems, and components (SSCs) important to safety) to provide additional protection against the updated hazards. In implementing the NRC's Phase 2 process, the staff will follow the guidance provided in a memorandum dated September 21, 2016 (ADAMS Accession No. ML16237A103), which remains in accordance with the most recent Commission direction provided in SRM-SECY-18-0049, "Management of Facility-Specific Backfitting, Issue Finality, and Information Collection," (ADAMS Accession No. ML19149A294).

The process outlined in this letter used information provided in response to the 50.54(f) letter and describes how the staff used this information for its Phase 2 decisionmaking. Highlights of the staff's progress in this area are as follows:

- Based on the reevaluated seismic hazard information that has been provided to date, only SPRA report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending or revoking a license in accordance with the Phase 2 process. The staff will continue its assessment of SPRA reports and will use the results of these assessments in the Phase 2 process described in the 50.54(f) letter and by the memorandum dated September 21, 2016.
- The staff has suspended its review of seismic mitigation strategies assessments (MSAs). The majority of these MSAs have previously been evaluated by the staff. For the reviews not yet completed, or not yet submitted, the staff will evaluate the

mitigation strategies, as appropriate, as part of its review of SPRA reports. Licensees are no longer expected to submit MSAs associated with their reevaluated seismic hazard.

- To provide clarity regarding the status of each site's response to the 50.54(f) letter, the NRC staff is binning sites in one of four categories as described in the section 3 of this Enclosure. Table 1 provides the site binning described in section 3.

## 2.0 Background

The seismic reevaluated hazard information provided in response to the 50.54(f) letter was the focus of the seismic hazard screening reports. Depending on the site-specific reevaluated seismic hazard, other necessary licensee submittals may have included: 1) an expedited seismic evaluation process (ESEP) report, 2) seismic MSA; 3) spent-fuel pool (SFP) seismic integrity evaluation; 4) seismic high frequency confirmation; and/or 5) SPRA report.

The staff's detailed assessment of the reevaluated seismic hazard information that has been provided in response to the 50.54(f) letter can be found in Section 4 of this Enclosure. A key guidance document that was used by the staff to evaluate seismic MSAs was Appendix H, of Nuclear Energy Institute (NEI) 12-06, Revision 4, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" (ADAMS Accession No. ML16354B421). The NRC's endorsement of NEI 12-06, Revision 4, is described in Japan Lessons-Learned Division (JLD) Interim Staff Guidance (ISG) JLD-ISG-2012-01, Revision 2, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML17005A182).<sup>1</sup>

Section 6 of JLD-ISG-2012-01, Revision 2, provides guidance regarding the treatment of reevaluated seismic hazard information in mitigation strategies developed in response to Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12054A735). The draft final MBD BE rule, provided in SECY-16-0142, contained provisions that would have required mitigation strategies to address the reevaluated seismic hazard information on a generic basis. As reflected in the Affirmation Notice and SRM dated January 24, 2019, the Commission determined that addressing the reevaluated hazards in licensees' mitigation strategies on a generic basis was not needed for adequate protection of public health and safety but would instead be assessed on a plant-specific, case-by-case basis under the requirements of 10 CFR § 50.109, "Backfitting," and § 52.98, "Finality of combined licenses; information requests."

The January 24, 2019, SRM directs the staff to use the 50.54(f) process to ensure that the NRC and its licensees will take the needed actions, if any, to ensure there is no undue risk to public health and safety due to the effects of the reevaluated seismic hazards. The SRM further directs that the staff should continue these efforts, utilizing existing agency processes to determine whether an operating power reactor license should be modified, suspended, or revoked in light of the reevaluated hazard.

## 3.0 Process

As described in Section 4.0 of this Enclosure, the staff has reviewed the reevaluated seismic hazard information that has been provided to date and issued corresponding staff

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<sup>1</sup> Appendix H was first introduced in Revision 2 of NEI 12-06, endorsed by Revision 1 of the ISG.

assessments for many sites. The conclusions documented in those assessments remain valid based on the demonstrated inherent capacity of SSCs and portable equipment. Furthermore, the staff has determined that only SPRA report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending or revoking a license in accordance with the Phase 2 decisionmaking process.

In their submittals, some licensees stated that changes would be pursued to mitigate the impact that the reevaluated seismic hazard could have at their sites, and these changes were not identified as regulatory commitments. Other licensees identified such changes as regulatory commitments as defined in Section 4.2 of NEI 99-04, "Guidelines for Managing NRC Commitment Changes," Revision 0, dated July 1999 (ADAMS Accession No. ML003680088). Depending on the site-specific details, the staff appropriately credited changes that licensees have planned or implemented at the site such as:

- Physical modifications to the plant that have been planned or implemented that would address a reevaluated seismic hazard.
- Changes to procedures to ensure relay chatter due to a seismic event do not adversely impact a plant's capability to shut down, or its ability to ensure adequate core cooling, containment integrity or SFP cooling.

In an effort to provide clarity regarding the status of each site's response to the 50.54(f) letter, the staff has binned all sites into four different categories. The binning is based on existing and proposed plant capabilities, as reflected in the licensee submittals and staff assessments associated with the reevaluated seismic hazards. The NRC staff binned sites into one of the following four categories:

- Category 1: Corresponds to sites where no additional regulatory action is warranted. This category includes sites that where the reevaluated seismic hazard is bounded by the current design basis, or sites where the licensee has demonstrated that existing seismic capacity and plant procedures will address the unbounded reevaluated hazard. This means that both licensees and staff are finished with the 50.54(f) letter seismic reevaluation assessments and backfit decisions for these sites. There are currently 47 sites in this category.
- Category 2: Corresponds to sites where additional insights are needed before a backfit determination is made. This category includes sites where the NRC does not have all the information needed to make a Phase 2 determination for such a site. There are currently no reevaluated seismic hazard sites in this category.
- Category 3: Corresponds to sites where an SPRA report is under review or is expected to be submitted. Therefore, the staff's review is ongoing and will be conducted in accordance with the recent Commission direction and be documented in the corresponding SPRA report staff assessment. There currently are nine sites in this category.
- Category 4: Corresponds to sites that have requested a deferral from completing seismic work related to the 50.54(f) letter based on impending plant closure. The staff concluded that each site's corresponding deferral letter adequately addressed the site's plan to address the seismic hazard up to the period of plant closure. The NRC staff issued assessments for each deferral. In these assessments, the staff stated that if a deferred



site remains in operation longer than previously communicated, the licensee would be expected to respond to the 50.54(f) letter by completing the deferred seismic reevaluation report(s). There are currently three sites in this category.

Table 1 includes the binning of all nuclear power plant sites. The staff's binning is intended to confirm the completion of the 50.54(f) seismic activities for Category 1 sites and the proposed path forward for sites in Categories 3 and 4. Also, the binning process considers all reevaluated seismic hazard reports, the respective staff assessments, and the ongoing MBDBE rulemaking. Category 4 (deferred) sites will follow the process described in the site's corresponding deferral letter, and either provide a submittal by the deferred date that the 50.54(f) activities are no longer necessary based on the conditions of the plant (e.g., fuel being permanently removed from the reactor vessel in accordance with 10 CFR 50.82(a)(1)(ii), and SFP capabilities) or provide the remaining information should they decide to remain in operation past the planned shutdown date. At such a point, the staff would evaluate those sites based on the process described in this document.

#### 4.0 Seismic Reevaluated Hazards

The NRC staff has revisited previously completed reevaluated seismic hazard staff assessments, particularly those where licensee actions were identified to ensure that key safety functions (core cooling, containment, and SFP cooling) are maintained to determine the need for further regulatory actions. The seismic reevaluations in response to the 50.54(f) letter include interim actions associated with the ESEP, SFP integrity evaluations, HF confirmations, seismic MSAs, and SPRA reports. Except for the SFP integrity evaluations, these activities had the potential to propose actions to ensure that key safety functions are maintained. For sites where no SPRA reports were expected, activities identified during the ESEPs, HF confirmations, and seismic MSAs have been revisited to support the previous Phase 2 determination. For sites where SPRA reports will be, or have been, performed, the SPRA report will support the Phase 2 determination.

The staff has completed all seismic MSA staff reviews for plants not requiring an SPRA report. Additionally, the staff did complete seismic MSA staff reviews for three sites that submitted an SPRA report. However, as described in the seismic MSA section below, future seismic MSA submittals are not warranted, given the recent Commission decision on the MBDBE rule. Instead, appropriate backfit decisions can be made based on the information that licensees provide in their SPRA reports. If additional information relative to mitigation strategies capabilities associated with a seismic event are needed to support a staff backfit decision, the staff will pursue obtaining such information on an individual plant basis as part of its SPRA report reviews. Sites in Category 3 are those with SPRA reports currently under review or that are yet to be submitted.

#### 4.1 Expedited Seismic Evaluation Process

By letter dated April 12, 2013 (ADAMS Accession No. ML13102A142), the Electric Power Research Institute (EPRI) staff submitted EPRI Report 3002000704 "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force (NTTF) Recommendation 2.1: Seismic" (ADAMS Accession No. ML13102A142). The Augmented Approach proposed that licensees would use the ESEP to address the interim actions as requested by Information Item (6) in the 50.54(f) letter. The ESEP is a simplified seismic capacity evaluation with a focused scope of certain key installed mitigating strategies equipment that is used for core cooling and containment functions to cope with scenarios that involve a loss of all alternating current (ac) power and loss of access to the ultimate heat sink

to withstand the review level ground motion (RLGM), which is up to two times the safe shutdown earthquake (SSE). By letter dated May 7, 2013 (ADAMS Accession No. ML13106A331), the NRC staff endorsed the ESEP guidance.

The staff's reviews assessed whether the intent of the guidance was implemented. All sites to which the ESEP was applicable have received a corresponding staff assessment that concludes that licensees have demonstrated adequate implementation of the augmented approach. Part of the staff's assessment included checklist item VII, "Modifications to Plant Equipment." This section of the staff's assessment addressed whether licensees identified actions to resolve modifications to achieve high confidence of low probability of failure (HCLPF) values that bound the RLGM. In their docketed submittals, some sites identified actions and/or plant modifications needed to achieve HCLPF values. These actions and/or plant modifications resulting from the ESEP have either been completed or will be addressed as part of the SPRA. The staff credited (or will credit as appropriate) these actions and modifications as part of its Phase 2 determination and the conclusions documented in this letter.

#### 4.2 Seismic Spent Fuel Pool Evaluations

By letter dated January 31, 2017 (ADAMS Accession No. ML17031A171), NEI submitted the EPRI Report No. 3002009564 entitled, "Seismic Evaluation Guidance: Spent Fuel Pool Integrity Evaluation" (SFP Evaluation Guidance Report) (ADAMS Accession No. ML16055A017). The SFP Evaluation Guidance Report provides criteria for evaluating the seismic robustness of an SFP to the reevaluated ground motion response spectrum (GMRS) hazard levels. This report supplements the guidance in EPRI Report 1025287, "Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID)" (ADAMS Accession No. ML12333A170). The NRC endorsed the SFP Evaluation Guidance Report by letter dated February 28, 2017 (ADAMS Accession No. ML17034A408), as an acceptable method for licensees to use when responding to Item (9) in Enclosure 1 of the 50.54(f) letter.

The staff's guidance was developed to support completion of SFP evaluations for sites with a reevaluated seismic hazard exceedance in the 1-10 Hertz (Hz) frequency range (i.e., the frequency range of structural significance). The staff's evaluations of the 38 sites with an exceedance in this frequency range were grouped based on whether the reevaluated GMRS peak spectral accelerations were above or below 0.8 g. These 38 operating reactor sites have each received a staff SFP structural evaluation that concluded that licensees have demonstrated adequate seismic margin to preclude a potential drain-down of the SFP in the unlikely occurrence of a seismic event up to the magnitude of the reevaluated seismic hazard occurring at their respective sites. The staff has confirmed that conclusions reached in these assessments are not affected by the Commission's Affirmation Notice and SRM on the MBDBE rule.

#### 4.3 Seismic High Frequency Confirmations

By letter dated July 30, 2015 (ADAMS Accession No. ML15223A095), NEI submitted EPRI Report 3002004396, "High Frequency Program: Application Guidance for Functional Confirmation and Fragility Evaluation" (hereafter referred to as the HF guidance) (ADAMS Accession No. ML15223A095). The HF guidance proposes methods for applying HF seismic testing results to support plant-specific analyses of potential HF effects. Specific guidance is given for plants performing a limited-scope HF confirmation to address the information requested in Item (4) in Enclosure 1 of the 50.54(f) letter.

The limited-scope HF confirmation is a simplified seismic capacity evaluation focusing on the potential impacts of HF ground motion on key plant functions following a seismic event. By letter dated September 17, 2015 (ADAMS Accession No. ML15218A569), the NRC staff endorsed the HF guidance. Licensees with a reevaluated seismic hazard exceeding the SSE above 10 Hz and not performing an SPRA submitted a HF confirmation report in accordance with the schedule in the NRC letter dated October 27, 2015 (ADAMS Accession No. ML15194A015).

Part of the staff’s assessment included checklist item VII, “Resolution Options and High Frequency Report Requirements (EPRI 3002004396 Sections 4.6 and 4.7).” This section of the staff’s assessment addressed whether licensees identified actions to resolve any relays not meeting the component capacity screening criteria. In their docketed submittals and consistent with the endorsed HF guidance resolution options, a number of sites identified actions needed to resolve relays not meeting the screening criteria. As such, the staff credited these actions in its Phase 2 determination such that additional actions are not warranted. The staff has confirmed that conclusions reached in the HF confirmation staff assessments are not affected by the Commission’s Affirmation Notice and SRM on the MBD BE rule. Therefore, such sites fall within the Category 1 bin described above and have no further activities to complete in response to the 50.54(f) letter.

#### 4.4 Mitigation Strategies Assessments

Guidance document NEI 12-06, Revision 4, Appendix H, contains 5 paths as shown in Figure 4.4-1 below.

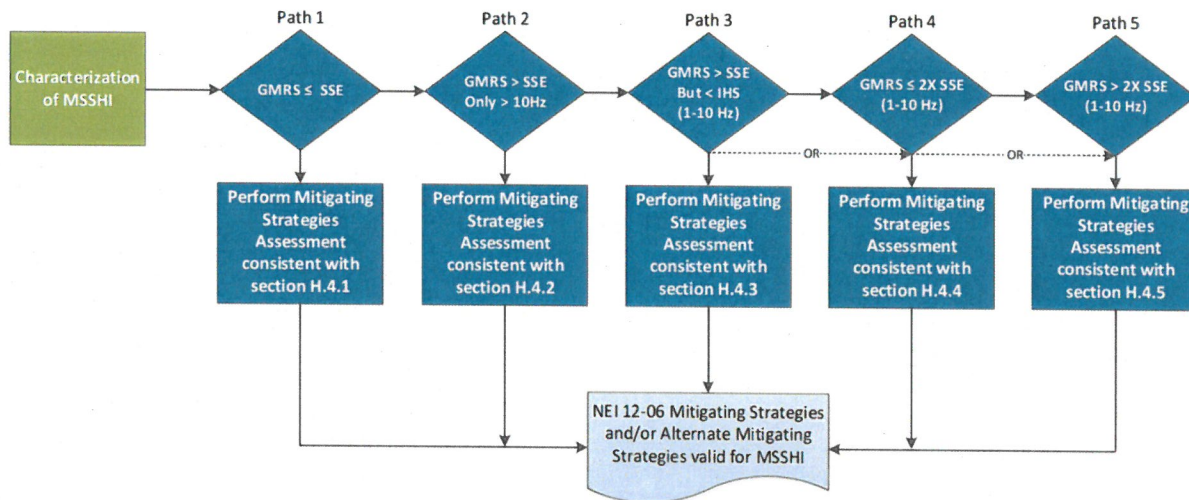


Figure 4.4-1 – Graded Approach for Seismic MSAs

Licensees submitted their MSAs and the corresponding staff assessments have been completed for Paths 1 through 4 that are shown in Figure 4.4-1. For all sites in these Paths, the staff concluded that SSCs relied upon for mitigation strategies have seismic capacity to levels equal to or higher than the reevaluated GMRS, safe shutdown of the plant can be accomplished, and any consequences can be appropriately mitigated under the reevaluated seismic hazard conditions.

Based on the staff’s assessment of the seismic Path 1 through 4 MSAs, the staff has determined that some of the seismic MSAs contained information pertinent to binning sites in

accordance with this enclosure. Specifically, in their docketed submittals, two licensees identified actions (such as operator actions needed to address relay chatter) needed to implement the mitigation strategies under the reevaluated seismic hazard conditions. The staff credited such actions in its Phase 2 determination such that additional information or actions are not warranted.

For sites following Path 5 of NEI 12-06, Revision 4, Appendix H, licensees submitted or are scheduled to submit SPRA reports that include evaluations of HF effects on the plant. The SPRA report review process will identify if additional regulatory actions are warranted in accordance with the NRC's backfit process. Most SPRAs model FLEX equipment; however, neither SFPs nor SFP cooling are modeled in SPRAs. As described above, operating reactor sites have either screened out of the need for conducting a SFP structural evaluation or have received a staff SFP structural evaluation that concluded that licensees have demonstrated adequate seismic margin to preclude a potential drain-down of the SFP in the unlikely occurrence of a seismic event up to the magnitude of the reevaluated seismic hazard taking place at their respective sites.

If the staff has clarification questions regarding the modeling of mitigation strategies capabilities in the context of the SPRA report review, the staff will pursue these questions on an individual plant basis as part of the SPRA report reviews. Table 1 provides the results of the staff's binning of reevaluated seismic hazard submittals that have been provided to the staff.

#### 4.5 Seismic Probabilistic Risk Assessments

The NRC staff will continue to review the SPRA reports to complete the Phase 2 process as described in the 50.54(f) letter and in the memorandum dated September 21, 2016, to determine if additional regulatory actions are warranted. The NRC staff has confirmed that pending work on SPRA reports in response to the 50.54(f) letter is not affected by the Commission's Affirmation Notice and SRM on the MBDDBE rule. The NRC staff has completed the review of some SPRA reports and concluded that no further regulatory action is warranted for those sites. Those sites have been binned in Category 1. Other sites whose SPRA reports are still under review or sites soon to submit their SPRA reports are binned in Category 3. A limited number of sites have deferred their SPRA report submittal to a date after their proposed shutdown and are binned in Category 4. Those sites are to follow the guidance provided in the NRC staff response to the deferral request.

#### 5.0 Conclusion

Based on the staff's assessment provided in this Enclosure, the staff has determined that the conclusions documented in each of the reevaluated seismic hazard staff assessments issued to date remain valid and additional regulatory actions are not warranted for those sites. Reviews will continue to be performed for SPRA reports that have been received by the staff and are currently under review. Additionally, the staff will continue to use the same process to review SPRA reports that are scheduled to be submitted through the end of 2019. A small number of sites have received SPRA report deferral approvals corresponding to planned plant closures. Table 1 provides a status of the staff's review of the reevaluated seismic hazard information and the site binning as described in Section 3 of this Enclosure.

Table 1 - Status of 50.54(f) Letter (Seismic) - Site Binning

<i>Site</i>	<i>No additional regulatory action is warranted (Category 1)</i>	<i>Additional Insights Needed (Category 2)</i>	<i>Ongoing Review (Category 3)</i>	<i>Deferred (Category 4)</i>
Arkansas Nuclear	X			
Beaver Valley	X			
Braidwood	X			
Browns Ferry			X	
Brunswick	X			
Byron	X			
Callaway			X	
Calvert Cliffs	X			
Catawba	X			
Clinton	X			
Columbia			X	
Comanche Peak	X			
Cooper	X			
Davis-Besse	X			
DC Cook			X	
Diablo Canyon	X			
Dresden			X	
Duane Arnold	X			
Farley	X			
Fermi	X			
FitzPatrick	X			
Ginna	X			
Grand Gulf	X			
Harris	X			
Hatch	X			
Hope Creek	X			
Indian Point				X
LaSalle	X			
Limerick	X			
McGuire	X			
Millstone	X			
Monticello	X			
Nine Mile Point	X			
North Anna	X			
Oconee			X	
Palisades				X
Palo Verde	X			
Peach Bottom	X			
Perry	X			
Pilgrim				X

Point Beach	X			
Prairie Island	X			
Quad Cities	X			
River Bend	X			
Robinson			X	
Salem	X			
Seabrook	X			
Sequoyah			X	
St. Lucie	X			
South Texas	X			
Summer			X	
Surry	X			
Susquehanna	X			
TMI	X			
Turkey Point	X			
Vogle	X			
Waterford	X			
Watts Bar	X			
Wolf Creek	X			
<b>Total</b>	<b>47</b>	<b>0</b>	<b>9</b>	<b>3</b>

LIST OF APPLICABLE POWER REACTOR LICENSEES

Arkansas Nuclear One, Units 1 and 2

Entergy Operations, Inc.  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6

ANO Site Vice President  
Arkansas Nuclear One  
Entergy Operations, Inc.  
N-TSB-58  
1448 S.R. 333  
Russellville, AR 72802

Beaver Valley Power Station, Units 1 and 2

FirstEnergy Nuclear Operating Company  
Docket Nos. 50-334 and 50-412  
License Nos. DPR-66 and NPF-73

Mr. Richard D. Bologna  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Beaver Valley Power Station  
Mail Stop A-BV-SSB  
P.O. Box 4, Route 168  
Shippingport, PA 15077

Braidwood Station, Units 1 and 2

Exelon Generation Company, LLC  
Docket Nos. STN 50-456 and STN 50-457  
License Nos. NPF-72 and NPF-77

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
Braidwood Station  
4300 Winfield Road  
Warrenville, IL 60555

Browns Ferry Nuclear Plant, Units 1, 2,  
and 3

Tennessee Valley Authority  
Docket Nos. 50-259, 50-260, and 50-296  
License Nos. DPR-33, DPR-52, and DPR-68

Mr. Joseph W. Shea  
Vice President, Nuclear Regulatory Affairs  
and Support Services  
Tennessee Valley Authority  
Browns Ferry Nuclear Plant  
1101 Market Street, LP 4A  
Chattanooga, TN 37402-2801

Brunswick Steam Electric Plant, Units 1  
and 2

Duke Energy Progress, LLC  
Docket Nos. 50-325 and 50-324  
Licensee Nos. DPR-71 and DPR-62

Mr. William R. Gideon  
Site Vice President  
Brunswick Steam Electric Plant  
8470 River Rd. SE (M/C BNP001)  
Southport, NC 28461

Byron Station, Units 1 and 2

Exelon Generation Company, LLC  
Docket Nos. STN 50-454 and STN 50-455  
License Nos. NPF-37 and NPF-66

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
Byron Station  
4300 Winfield Road  
Warrenville, IL 60555

Callaway Plant, Unit 1  
Union Electric Company  
Docket No. 50-483  
License No. NPF-30

Mr. Fadi Diya  
Senior Vice President and Chief  
Nuclear Officer  
Ameren Missouri  
Callaway Energy Center  
8315 County Road 459  
Steedman, MO 65077

Calvert Cliffs Nuclear Power Plant, Units 1  
and 2

Calvert Cliffs Nuclear Power Plant, LLC  
Docket Nos. 50-317 and 50-318  
License Nos. DPR-53 and DPR-69

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

Catawba Nuclear Station, Units 1 and 2

Duke Energy Carolinas, LLC  
Docket Nos. 50-413 and 50-414  
License Nos. NPF-35 and NPF-52

Mr. Robert T. Simril  
Site Vice President  
Duke Energy Carolinas, LLC  
Catawba Nuclear Station  
4800 Concord Road  
York, SC 29745

Clinton Power Station, Unit 1

Exelon Generation Company, LLC  
Docket No. 50-461  
License No. NPF-62

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
Clinton Power Station  
4300 Winfield Road  
Warrenville, IL 60555

Columbia Generating Station  
Energy Northwest  
Docket No. 50-397  
License No. NPF-21

Mr. Bradley J. Sawatzke  
Chief Executive Officer  
Energy Northwest  
Columbia Generating Station  
MD 1023  
76 North Power Plant Loop  
P.O. Box 968  
Richland, WA 99352

Comanche Peak Nuclear Power Plant,  
Units 1 and 2

Vistra Operations Company, LLC  
Docket Nos. 50-445 and 50-446  
License Nos. NPF-87 and NPF-89

Mr. Ken J. Peters  
Senior Vice President & Chief  
Nuclear Officer  
Attention: Regulatory Affairs  
Comanche Peak Nuclear Power Plant  
Vistra Operations Company, LLC  
6322 N FM 56  
P.O. Box 1002  
Glen Rose, TX 76043

Cooper Nuclear Station

Nebraska Public Power District  
Docket No. 50-298  
License No. DPR-46

Mr. John Dent, Jr.  
Vice President-Nuclear and CNO  
Nebraska Public Power District  
Cooper Nuclear Station  
72676 648A Avenue  
Brownville, NE 68321



Davis-Besse Nuclear Power Station, Unit 1  
FirstEnergy Nuclear Operating Company  
Docket No. 50-346  
License No. NPF-3

Mr. Mark Bezilla  
Site Vice President  
FirstEnergy Nuclear Operating Company  
c/o Davis-Besse NPS  
5501 N. State Route 2  
Oak Harbor, OH 43449-9760

Diablo Canyon Power Plant, Unit Nos. 1  
and 2  
Pacific Gas and Electric Company  
Docket Nos. 50-275 and 50-323  
License Nos. DPR-80 and DPR-82

Mr. James M. Welsch  
Vice President, Nuclear Generation  
and Chief Nuclear Officer  
Pacific Gas and Electric Company  
P.O. Box 56, Mail Code 104/6  
Avila Beach, CA 93424

Donald C. Cook Nuclear Plant, Units 1 and  
2  
Indiana Michigan Power Company  
Docket Nos. 50-315 and 50-316  
License Nos. DPR-58 and DPR-74

Mr. Joel P. Gebbie  
Senior Vice President and Chief  
Nuclear Officer  
Indiana Michigan Power Company  
Nuclear Generation Group  
One Cook Place  
Bridgman, MI 49106

Dresden Nuclear Power Station, Units 2  
and 3  
Exelon Generation Company, LLC  
Docket Nos. 50-237 and 50-249  
License Nos. DPR-19 and DPR-25

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
Dresden Nuclear Power Station  
4300 Winfield Road  
Warrenville, IL 60555

Duane Arnold Energy Center  
NextEra Energy Duane Arnold, LLC  
Docket No. 50-331  
License No. DPR-49

Mr. Mano Nazar  
President and Chief Nuclear Officer  
Nuclear Division  
NextEra Energy Duane Arnold, LLC  
Mail Stop: NT3/JW  
15430 Endeavor Drive  
Jupiter, FL 33478

Edwin I. Hatch Nuclear Plant, Units 1 and 2  
Southern Nuclear Operating Company, Inc.  
Docket Nos. 50-321 and 50-366  
License Nos. DPR-57 and NPF-5

Ms. Cheryl A. Gayheart  
Regulatory Affairs Director  
Southern Nuclear Operating Company, Inc.  
3535 Colonnade Parkway  
Birmingham, AL 35243

Fermi, Unit 2  
DTE Electric Company  
Docket No. 50-341  
License No. NPF-43

Mr. Keith J. Polson, Senior Vice President  
and Chief Nuclear Officer  
DTE Electric Company  
6400 North Dixie Highway  
Newport, MI 48166

Grand Gulf Nuclear Station, Unit 1  
Entergy Operations, Inc.  
Docket No. 50-416  
License No. NPF-29

Vice President, Operations  
Entergy Operations, Inc.  
Grand Gulf Nuclear Station  
P.O. Box 756  
Port Gibson, MS 39150

H. B. Robinson Steam Electric Plant, Unit No. 2

Duke Energy Progress, LLC  
Docket No. 50-261  
License No. DPR-23

Mr. Ernest J. Kapopoulos, Jr.  
Site Vice President  
H. B. Robinson Steam Electric Plant  
Duke Energy Progress, LLC  
3581 West Entrance Road, RNPA01  
Hartsville, SC 29550

Hope Creek Generating Station

PSEG Nuclear, LLC  
Docket No. 50-354  
License No. NPF-57

Mr. Peter P. Sena, III  
President and Chief Nuclear Officer  
PSEG Nuclear LLC – N09  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Indian Point Nuclear Generating Unit Nos. 1, 2, and 3

Entergy Nuclear Operations, Inc.  
Docket Nos. 50-247 and 50-286  
License Nos. DPR-26 and DPR-64

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Indian Point Energy Center  
450 Broadway, GSB  
P.O. Box 249  
Buchanan, NY 10511-0249

James A. FitzPatrick Nuclear Power Plant  
Exelon Generation Company, LLC  
Docket No. 50-333  
License No. DPR-59

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

Joseph M. Farley Nuclear Plant, Units 1 and 2

Southern Nuclear Operating Company, Inc.  
Docket Nos. 50-348 and 50-364  
License Nos. NPF-2 and NPF-8

Ms. Cheryl A. Gayheart  
Regulatory Affairs Director  
Southern Nuclear Operating Company, Inc.  
3535 Colonnade Parkway  
Birmingham, AL 35243

LaSalle County Station, Units 1 and 2

Exelon Generation Company, LLC  
Docket Nos. 50-373 and 50-374  
License Nos. NPF-11 and NPF-18

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
LaSalle County Station  
4300 Winfield Road  
Warrenville, IL 60555

Limerick Generating Station, Units 1 and 2

Exelon Generation Company, LLC  
Docket Nos. 50-352 and 50-353  
License Nos. NPF-39 and NPF-85

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

McGuire Nuclear Station, Units 1 and 2  
Duke Energy Carolinas, LLC  
Docket Nos. 50-369 and 50-370  
License Nos. NPF-9 and NPF-17

Mr. Tom Ray  
Site-Vice President  
Duke Energy Carolinas, LLC  
McGuire Nuclear Station  
12700 Hagers Ferry Road  
Huntersville, NC 28078-8985

Millstone Power Station, Units 2 and 3  
Dominion Nuclear Connecticut, Inc.  
Docket Nos. 50-336 and 50-423  
License Nos. DPR-65 and NPF-49

Mr. Daniel G. Stoddard  
Senior Vice President & Chief Nuclear  
Officer  
Dominion Nuclear Connecticut, Inc.  
Millstone Power Station  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060

Monticello Nuclear Generating Plant  
Northern States Power Company  
Docket No. 50-263  
License No. DPR-22

Mr. Christopher R. Church  
Senior Vice President and Chief  
Nuclear Officer  
Northern States Power Company -  
Minnesota  
Monticello Nuclear Generating Plant  
2807 West County Road 75  
Monticello, MN 55362

Nine Mile Point Nuclear Station, Units 1  
and 2  
Nine Mile Point Nuclear Station, LLC  
Exelon Generation Company, LLC  
Docket Nos. 50-220 and 50-410  
License Nos. DPR-63 and NPF-69

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

North Anna Power Station, Units 1 and 2  
Virginia Electric and Power Company  
Docket Nos. 50-338 and 50-339  
License Nos. NPF-4 and NPF-7

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Virginia Electric and Power Company  
North Anna Power Station  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060

Oconee Nuclear Station, Units 1, 2, and 3  
Duke Energy Carolinas, LLC  
Docket Nos. 50-269, 50-270, and 50-287  
License Nos. DPR-38, DPR-47, and DPR-  
55

Mr. J. Ed Burchfield, Jr.  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

Palisades Nuclear Plant  
Entergy Nuclear Operations, Inc.  
Docket No. 50-255  
License No. DPR-20

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

Palo Verde Nuclear Generating Station,  
Units 1, 2, and 3

Arizona Public Service Company  
Docket Nos. STN 50-528, STN 50-529,  
and STN 50-530  
License Nos. NPF-41, NPF-51, and NPF-  
74

Mr. Robert S. Bement  
Executive Vice President Nuclear/  
Chief Nuclear Officer  
Arizona Public Service Company  
Palo Verde Nuclear Generating Station  
P.O. Box 52034 MS 7602  
Phoenix, AZ 85072-2034

Peach Bottom Atomic Power Station, Units  
2 and 3

Exelon Generation Company, LLC  
Docket Nos. 50-277 and 50-278  
License Nos. DPR-44 and DPR-56

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

Perry Nuclear Power Plant, Unit 1  
FirstEnergy Nuclear Operating Company  
Docket No. 50-440  
License No. NPF-58

Mr. David B. Hamilton  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Perry Nuclear Power Plant  
P.O. Box 97  
Mail Stop A-PY-290  
Perry, OH 44081-0097

Pilgrim Nuclear Power Station

Docket No. 50-293  
License No. DPR-35

Site Vice President  
Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360-5508

Point Beach Nuclear Plant, Units 1 and 2

NextEra Energy Point Beach, LLC  
Docket Nos. 50-266 and 50-301  
License Nos. DPR-24 and DPR-27

Mr. Mano Nazar  
President and Chief Nuclear Officer  
Nuclear Division  
NextEra Energy Point Beach, LLC  
Mail Stop: NT3/JW  
15430 Endeavor Drive  
Jupiter, FL 33478

Prairie Island Nuclear Generating Plant,  
Units 1 and 2

Northern States Power Company -  
Minnesota  
Docket Nos. 50-282 and 50-306  
License Nos. DPR-42 and DPR-60

Mr. Scott Sharp  
Site Vice President  
Northern States Power Company -  
Minnesota  
Prairie Island Nuclear Generating Plant  
1717 Wakonade Drive East  
Welch, MN 55089

Quad Cities Nuclear Power Station, Units 1  
and 2

Exelon Generation Company, LLC  
Docket Nos. 50-254 and 50-265  
License Nos. DPR-29 and DPR-30

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
Quad Cities Nuclear Power Station  
4300 Winfield Road  
Warrenville, IL 60555

R. E. Ginna Nuclear Power Plant  
R. E. Ginna Nuclear Power Plant, LLC  
Exelon Generation Company, LLC  
Docket No. 50-244  
License No. DPR-18

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

River Bend Station, Unit 1  
Entergy Operations, Inc.  
Docket No. 50-458  
License No. NPF-47

Vice President, Operations  
Entergy Operations, Inc.  
River Bend Station  
5485 U.S. Highway 61  
St. Francisville, LA 70775

Salem Nuclear Generating Station, Units 1  
and 2  
PSEG Nuclear, LLC  
Docket Nos. 50-272 and 50-311  
License Nos. DPR-70 and DPR-75

Mr. Peter P. Sena, III  
President and Chief Nuclear Officer  
PSEG Nuclear LLC – N09  
Salem Nuclear Generating Station  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Seabrook Station, Unit 1  
NextEra Energy Seabrook, LLC  
Docket No 50-443  
License No. NPF-86

Mr. Mano Nazar  
President and Chief Nuclear Officer,  
Nuclear Division  
NextEra Energy Seabrook, LLC  
Mail Stop: EX/JB  
700 Universe Blvd.  
Juno Beach, FL 33408

Sequoyah Nuclear Plant, Units 1 and 2  
Tennessee Valley Authority  
Docket Nos. 50-327 and 50-328  
License Nos. DPR-77 and DPR-79

Mr. Joseph W. Shea  
Vice President, Nuclear Regulatory Affairs  
and Support Services  
Tennessee Valley Authority  
Sequoyah Nuclear Plant  
1101 Market Street, LP 4A  
Chattanooga, TN 37402-2801

Shearon Harris Nuclear Power Plant, Unit  
1  
Duke Energy Progress, LLC  
Docket No. 50-400  
License No. NPF-63

Ms. Tanya Hamilton, Site Vice President  
Shearon Harris Nuclear Power Plant  
5413 Shearon Harris Rd.  
M/C HNP01  
New Hill, NC 27562-0165

South Texas Project, Units 1 and 2  
STP Nuclear Operating Company  
Docket Nos. 50-498 and 50-499  
License Nos. NPF-76 and NPF-80

Mr. G. T. Powell  
President and CEO  
STP Nuclear Operating Company  
South Texas Project  
P.O. Box 289  
Wadsworth, TX 77483

St. Lucie Plant, Units 1 and 2  
Florida Power and Light Company  
Docket Nos. 50-335 and 50-389  
License Nos. DPR-67 and NPF-16

Mr. Mano Nazar  
President, Nuclear Division  
and Chief Nuclear Officer  
Florida Power & Light Company  
Mail Stop: EX/JB  
700 Universe Blvd.  
Juno Beach, FL 33408

Surry Power Station, Unit Nos. 1 and 2  
Virginia Electric and Power Company  
Docket Nos. 50-280 and 50-281  
License Nos. DPR-32 and DPR-37

Mr. Daniel G. Stoddard, Senior Vice  
President and Chief Nuclear Officer  
Dominion Nuclear  
Virginia Electric and Power Company  
Surry Power Station  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

Susquehanna Steam Electric Station, Units  
1 and 2

Susquehanna Nuclear, LLC  
Docket Nos. 50-387 and 50-388  
License Nos. NPF-14 and NPF-22

Mr. Kevin Cimorelli  
Site Vice President  
Susquehanna Nuclear, LLC  
769 Salem Boulevard  
NUCSB3  
Berwick, PA 18603-0467

Three Mile Island Nuclear Station, Unit 1

Exelon Generation Company, LLC  
Docket No. 50-289  
License No. DPR-50

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

Turkey Point Nuclear Generating Units 3  
and 4

Florida Power and Light Company  
Docket Nos. 50-250 and 50-251  
License Nos. DPR-31 and DPR-41

Mr. Mano Nazar  
President and Chief Nuclear Officer  
Nuclear Division  
Florida Power & Light Company  
Mail Stop: EX/JB  
700 Universe Blvd.  
Juno Beach, FL 33408

Virgil C. Summer Nuclear Station, Unit 1

South Carolina Electric & Gas Company  
Docket No. 50-395  
License No. NPF-12

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Blvd., Floor: IN-2SW  
Glen Allen, VA 29060

Vogtle Electric Generating Plant, Units 1  
and 2

Southern Nuclear Operating Company, Inc.  
Docket Nos. 50-424 and 50-425  
License Nos. NPF-68 and NPF-81

Ms. Cheryl A. Gayheart  
Regulatory Affairs Director  
Southern Nuclear Operating Company, Inc.  
3535 Colonnade Parkway  
Birmingham, AL 35243

Waterford Steam Electric Station, Unit 3

Entergy Operations, Inc.  
Docket No. 50-382  
License No. NPF-38

Site Vice President  
Entergy Operations, Inc.  
Waterford Steam Electric Station  
17265 River Road  
Killona, LA 70057-3093

Watts Bar Nuclear Plant, Units 1 and 2  
Tennessee Valley Authority  
Docket No. 50-390 and 50-391  
License No. NPF-90 and NPF-96

Mr. Joseph W. Shea  
Vice President, Nuclear Regulatory Affairs  
and Support Services  
Tennessee Valley Authority  
Watts Bar Nuclear Plant  
1101 Market Street, LP 4A  
Chattanooga, TN 37402-2801

Wolf Creek Generating Station  
Wolf Creek Nuclear Operating Corporation  
Docket No. 50-482  
License No. NPF-42

Mr. Adam C. Heflin  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KS 66839

SUBJECT: TREATMENT OF REEVALUATED SEISMIC HAZARD INFORMATION  
 PROVIDED UNDER TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS*  
 50.54(f) REGARDING RECOMMENDATION 2.1 OF THE NEAR-TERM TASK  
 FORCE REVIEW OF INSIGHTS FROM THE FUKUSHIMA DAI-ICHI ACCIDENT  
 DATE: July 3, 2019

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DATE	6/12/2019	7/3/2019	

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RidsNrrPMHatch  
RidsNrrPMHarris  
RidsNrrPMHopeCreek  
RidsNrrPMIndianPoint  
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RidsNrrPMMillstone  
RidsNrrPMMonticello  
RidsNrrPMNineMilePoint  
RidsNrrPMNorthAnna  
RidsNrrPMOcone  
RidsNrrPMPalisades  
RidsNrrPaloVerde  
RidsNrrPM PeachBottom  
RidsNrrPMPerry  
RidsNrrPMPilgrim  
RidsNrrPMPointBeach  
RidsNrrPMPrairieIsland  
RidsNrrPMQuadCities  
RidsNrrPMREGinna  
RidsNrrPMRiverBend  
RidsNrrPMRobinson  
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RidsNrrPMSusquehanna  
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RidsNrrPMVogle  
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RidsNrrPMWolfCreek  
RidsOgcRp Resource  
RidsRgn1MailCenter  
RidsRgn2MailCenter  
RidsRgn3MailCenter  
RidsRgn4MailCenter  
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