

MITIGATION OF BEYOND DESIGN BASIS EVENTS RULE IMPLEMENTATION GUIDANCE

Prepared by the Nuclear Energy Institute
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1 INTRODUCTION

The NRC pursued numerous regulatory actions following the 2011 Fukushima Dai-ichi event in Japan. These actions began with the work of the Near-Term Task Force (NTTF) and the development of the associated NTTF recommendations. The NRC's response to the NTTF Report was provided in SECY- 11-0124, ("Recommended Actions to Be Taken without Delay from the Near-Term Task Force Report"), and SECY-11-0137 ("Prioritization of Recommended Actions To Be Taken in Response to Fukushima Lessons Learned"). These two papers identified actions to be taken in the near term and prioritized the NTTF recommendations. The near-term actions ultimately culminated in the issuance of three orders, a request for information under 10 CFR Section 50.54(f) that addressed several regulatory issues, and two Advance Notices of Proposed Rulemaking (ANPR). The regulatory efforts to address lessons learned from Fukushima have evolved over time, and the two rulemaking activities discussed in the ANPRs were consolidated into the Mitigation of Beyond-Design-Basis Events (MBDBE) rule: 10 CFR 50.155.

10 CFR 50.155 applies to power reactor applicants and licensees and includes the following:

- Provisions that make generically applicable requirements previously imposed by Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ADAMS ML12054A735), for the mitigation of beyond-design-basis external events. These requirements constitute the majority of the requirements in this rule, and are located mainly in 10 CFR 50.155(b)(1), with portions in paragraphs (c), (d), (e), and (g) as described further below.
- Requirements for licensees to consider the effects of the reevaluated seismic and flooding hazards information within the mitigation strategies and guidelines, in accordance with the Commission direction provided in SRM-COMSECY-14-0037 (ADAMS ML15089A236), "Staff Requirements - COMSECY-14-0037 -Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards," dated March 30, 2015. These requirements appear in 10 CFR 50.155(b)(2).
- Requirements previously in 10 CFR 50.54(hh)(2) for mitigation of the effects of a loss of a large area of the plant due to explosions or fire. These requirements appear in 10 CFR 50.155(b)(3).
- Requirements to integrate the above capabilities with the emergency operating procedures. These requirements appear in 10 CFR 50.155(b)(4).
- Reasonable protection requirements that enable the proper degree of regulatory assurance to be applied to the equipment and structures, systems, and components (SSCs) that perform a beyond-design-basis function for the purposes of 10 CFR 50.155. These requirements appear in 10 CFR 50.155(c)(2) and (c)(3).
- Supporting requirements for the integrated response capability that include staffing, communications, training, drills or exercises, and documentation of changes. These requirements are found in 10 CFR 50.155(b), (c), (d), (e) and (g).
- Provisions that make generically applicable requirements previously imposed by Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," (ADAMS ML12056A044), for remotely monitoring the spent fuel pool wide-range level. These requirements appear in 10 CFR 50.155(f).
- Requirements that facilitate the decommissioning of reactors that are subject to this rule. These requirements appear in 10 CFR 50.155(a)(2).

- Provisions that rescind orders, including Orders EA-12-049 and EA-12-051, for which 10 CFR 50.155 will now provide the governing substantive requirements. These requirements appear in 10 CFR 50.155(i).
- Provisions that facilitate the removal of a variety of license conditions for which 10 CFR 50.155 will now provide the governing substantive requirements. These requirements appear in 10 CFR 50.155(i).

This document provides guidance to assist licensee implementation of 10 CFR 50.155 provisions.

Note that NEI has prepared another document that can assist rule implementation. The “*BDB Event Response Program Manual*” provides an outline (or “roadmap”) for developing an emergency response program manual that can be used at the fleet or site level. Rather than building a new program manual, this document recommends that the various elements it describes be blended into the existing FLEX/SFPI program document. The “*BDP Event Response Program Manual*” can be found at <https://www.nei.org/Member-Center/Member-Resources/Department-Hubs/Fukushima-Regulatory-Response-for-Members>.

2 UFSAR CONSIDERATIONS

There is no specific requirement to address beyond-design-basis aspects of 50.155 compliance topics in the UFSAR. Note that some aspects of the changes made to address beyond-design-basis accidents should be included in the UFSAR if they affect design basis systems, structures, or components already included in the document (e.g., installation of new connection points on safety related equipment or systems for FLEX pumps and generators, changes to the seismic capacity of tanks, etc.).

3 SCOPE

NEI 17-03 provides guidance for the implementation of 10 CFR 50.155 through matrices that cross reference the rule and its statements of consideration (FRN MLXXXXXX *proposed rule ML16292A026*) with existing NEI guidelines and other applicable references. Some of the matrices provide assessments of potential gaps that a licensee may encounter during implementation of 10 CFR 50.155.

The top-level matrix in NEI 17-03 is the “Rule Requirements Cross Reference.” This matrix does not address a specific document; rather it relates all of the rule paragraphs to the various documents and guidelines that provide more information on the applicable requirement. The other matrices in NEI 17-03 address specific documents as follows:

- NEI 12-06, Revisions 0, 2, and 4: Diverse and Flexible Coping Strategies (FLEX) Implementation Guide
- NEI 12-01, Revision 0: Guidance for Assessing Beyond Design Basis Accident Response Staffing and Communication Capabilities
- NEI 13-06, Revision 1: Elements to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents
- NEI 14-01, Revision 1: Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents
- RG 1.226 to JLD-ISG-2012-01: Flexible Mitigation Strategies for Beyond Design Basis Events
- RG 1.227 to JLD-ISG-2012-03: Wide Range Spent Fuel Pool Level Instrumentation

A matrix was not developed for RG 1.228, *Integrated Response Capabilities for Beyond-Design-Basis Events*, because this regulatory guide did not evolve from a single ISG, rather it was created to document the NRC’s endorsements of the emergency response guidelines that were developed subsequent to the Fukushima event (NEI 12-01, 13-06, and 14-01).

NEI 17-03 matrices fall into two types: cross reference, and comparison. A brief description of each matrix is provided below:

- Cross Reference Matrix
 - MBDBE Rule Requirements Cross Reference Matrix – This matrix relates every paragraph in the final rule to associated industry guidance and relevant information in the rule’s “Statements of Consideration.” Differences and applicable generic actions are identified.
- Revision Comparison Matrices
 - NEI 12-06 Revision Comparison Matrix – NEI 12-06 (“Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”) was the industry’s principal guidance for the design and implementation of FLEX. Licensees may presently be implementing different revisions of this document. This matrix identifies the differences between the three revisions of NEI 12-06 that have been endorsed by the NRC (revisions 0, 2, and 4) and assists with the decision of whether to adopt a different revision and what should be addressed if an older revision is used.
 - RG 1.226 to JLD-ISG-1201-01 Comparison Matrix – JLD-ISG-2012-01 (“Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events”) endorsed revisions 0 and 2 of NEI 12-06. RG 1.226, (“Flexible Mitigation Strategies for Beyond-Design-Basis Events”) endorses revision 4 of NEI 12-06. This matrix examines the differences between the ISG and the RG.
 - RG 1.227 to JLD-ISG-2012-03 to RG 1.227 Comparison Matrix – JLD-ISG-2012-03 (“Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation”) endorsed revision 1 of NEI 12-02 (“Industry Guidance for Compliance with NRC Order EA-12-051, ‘To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation’”). RG 1.227, (“Wide-Range Spent Fuel Pool Level Instrumentation”) also endorses revision 1. This matrix examines the differences between the ISG and the RG.
 - NEI 12-01 Comparison Matrix – NEI 12-01 (“Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities”) was developed and endorsed by the NRC years before 10 CFR 50.155 became effective. This guideline is referenced by the Regulatory Guide that covers Integrated Response Capabilities (RG 1.228), but like NEI 13-06 and 14-01, not all of the guideline is applicable to implementation of 10 CFR 50.155. This matrix identifies the sections of NEI 12-01 that are applicable and provide interpretations and other information relevant to each applicable section.
 - NEI 13-06 Comparison Matrix – NEI 13-06 (“Enhancements to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents”) was endorsed by the NRC and referenced by RG 1.228, but like NEI 12-01 and 14-01, not all of the guideline is applicable to implementation of 10 CFR 50.155. This matrix identifies the sections of NEI 13-06 that are applicable and provides interpretations and other information relevant to each applicable section. Note a portion of NEI 13-06 was committed to by licensees because of a voluntary commitment to the NRC in fall 2015.
 - NEI 14-01 Comparison Matrix – NEI 14-01 (“Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents”) was endorsed by the NRC and referenced by RG 1.228, but like NEI 12-01 and 13-06, not all of the guideline is applicable to implementation of 10 CFR 50.155. This matrix identifies the sections of NEI 14-01 that are applicable and provides interpretations and other information relevant to each applicable section. This matrix also identifies that generic activities are planned to support licensee implementation of 10 CFR 50.155. Note a significant portion of NEI 14-01 was committed to by licensees because of a voluntary commitment to the NRC in fall 2015.

Each matrix includes a summary that highlights the key conclusions of its gap assessment. Many of these matrices identify various generic industry activities that are in place or planned to assist with implementation of 10 CFR 50.155.

4 GENERAL MATRIX USAGE

Users performing gap assessments for implementation of 10 CFR 50.155 should consider the following guidance:

- Information in the document “Section” column of some matrices may only be a summary of the guidance from the indicated section. Users are encouraged to refer to the specific section of the document for which the gap assessment has been performed to obtain a full understanding of the guidance.
- The Statement of Considerations provides important information concerning the Nuclear Regulatory Commission’s intent with respect to the rule requirements. Applicable sections of the Statement of Considerations are referenced in the matrices. Users are encouraged to read the referenced sections of the Statement of Considerations to gain insights into the requirements and how the interpretations in the matrices were derived.
- Users do not have to revalidate generic information in the table. The information has been developed and reviewed by members of the NEI MBDBE Rule Implementation Sub Group for use as a starting point to assist users in successful rule implementation.
- Users should validate information in the Gap Assessment / Recommended Action column for site specific applicability, even where “none” appears in that column (i.e., verify that there are no site specific gaps for that portion of the guidance).

NOTE THAT IN ALL CASES, IT IS THE RESPONSIBILITY OF EVERY LICENSEE TO EXAMINE ITS LICENSING BASES AND DETERMINE WHAT ADDITIONAL ACTIONS MAY BE NECESSARY TO ACHIEVE FULL COMPLIANCE WITH 10 CFR 50.155

5 PREVIEW OF SIGNIFICANT GAPS AND ACTIONS

Each matrix includes an introduction that summarizes its major impacts and necessary actions. This section presents a preview of the more significant of these items.

5.1 10 CFR 50.155 Rule Cross Reference Matrix

- Licensees who have not implemented NEI 12-06, revision 4 will need to update their programs to address this revision, or be able to explain why implementation of an earlier revision is acceptable. See the NEI 12-06 Revision Comparison Matrix for an identification of the differences.
- 10 CFR 50.155(g) applies change control requirements to the entire rule, including EDMGs (see 155(b)(3)). Ensure that a specific change control process is in place for EDMGs to document that changes to them continue to meet the requirements. Furthermore, ensure configuration control procedures properly handle the hand-off between different change control requirements.
- 10 CFR 50.155 must be implemented within 2 years of its effective date for most plants, or 3 years for BWRs that received the EA-13-109 Order on severe accident capable hardened containment vents, unless delays associated with reevaluated hazards apply. In that case related to hazards, a request (not an exception) for an alternative compliance date must be submitted within 90 days of the rule effective date.
- Ensure that the site-specific voluntary commitment to perform multiple source term dose assessments is maintained.
- Ensure that the NSIAC Initiative (voluntary commitment) on SAMGs is maintained.

5.2 NEI 12-06 Revision Comparison Matrix

- Validation Requirements including providing a basis for time sensitive actions performed more than 24 hours after the initiation of the event. (Section 3.2.1.7 and Appendix E)
- Incorporation by reference of several supplemental guidance documents. (Section 3.2.1.13)
- Clarification on minimum quantities of hoses and cables to be maintained allowing for potential reduction in equipment. (Section 3.2.2)
- Clarifications on minimum Spent Fuel Pool Cooling Strategy spray requirements allowing for potential reduction in equipment. (Table 3-1, 3-2 and Appendix C, D)
- Clarifications on alternate locations for instrument readings. (Section 5.3.3)
- Clarifications to support using existing station processes to manage maintenance and testing. (Section 11.5.2)
- Clarifications to support managing out of service time include separating functional from protected and using station corrective actions and work control processes. (Section 11.5.3)
- Clarification on Configuration Control to support long term sustainability of FLEX Program including FLEX Strategy change management. (Section 11.8)
- Removal of recommendation to maintain Final Integrated Plan (FIP) as a living document. (Section 13.2)

5.3 NEI 12-01 Comparison Matrix

- NOTES:
 - 10 CFR 50.155(b)(5) requirements for staffing capabilities are applicable to the requirements of 10 CFR 50.155 (b)(1) through (b)(3).
 - 10 CFR 50.155(c)(4) requirements for communications capabilities are applicable to the requirements of 10 CFR 50.155 (b)(1) and (b)(2)..
 - Although the requirements for communications capabilities contained in 10 CFR 50.155(c)(4) are not applicable to paragraph 10 CFR 50.155(b)(3) (EDMGs), all licensees have existing communications capabilities supporting EDMGs at the guidance level. See the B.5.b Phase 1 guidance letter dated February 25, 2005, Items B.1.i and B.2.b. Further details are available in NUREG 0800, Standard Review Plan, Section 19.4, Acceptance Criteria Item 12.
- Verify drill or exercise critiques and training feedback mechanisms include consideration of staffing and communications capabilities and assessments in the performance of 10 CFR 50.155 related drills, exercises and training.
- Verify the applicable change control process (e.g., 10 CFR 50.155(g) as implemented in the FLEX program document) contains adequate administrative controls for the identification of impacts to staffing and communications assessments that may impact the implementation of 10 CFR 50.155(b) strategies.
- Include a demonstration of the associated communications capability when conducting the initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraphs (b)(1), (b)(2) or (b)(3) of 10 CFR 50.155. This drill or exercise must be completed within four years of the effective date of the rule.
- Confirm communications capabilities committed to in response to the 10 CFR 50.54(f) letter comply with the requirements of 10 CFR 50.155(c)(4). Verify that communications equipment necessary to implement 10 CFR 50.155(c)(4) or to implement 10 CFR 50.155(b)(3) strategies is included in inventory checklists and is periodically verified functional with periodic maintenance tasks and frequencies defined.
- Verify that communications equipment contracts with vendors supporting communications equipment necessary to implement 10 CFR 50.155(c)(4) are maintained current and periodically verified.
- Verify that communications equipment procurement specifications or purchasing documents are consistent with requirements normally applied to other EP equipment and should be commonly available, commercial grade with readily available parts and replacement.

- Verify that agreements with communications service providers that enable access to Government Emergency Telecommunications Service (GETS), the Telecommunications Service Priority (TSP) programs and the Wireless Priority Service (WPS) are maintained current and periodically verified. Information related to these services may be obtained from <https://www.dhs.gov/office-emergency-communications>, under the Response Support section of the web page. Note that the National Communications Service (NCS) referenced in NEI 12-01 was disbanded by Executive Order 13618 on July 6, 2012 and the cited website is no longer functional.
- Verify agreements with communications providers of Emergency Services (e.g., satellite phone service) are maintained current and periodically verified.

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5.4 NEI 13-06 Comparison Matrix

- A site must have the capability to predict offsite doses during an event involving an extended loss of all AC power affecting all onsite units. Previously, the requirement to perform this did not require the assumption of an extended loss of AC power. Even though not required by the rule, licensee regulatory commitments include the capability to predict dose from multiple source terms.
- An ERO role identified as “Ultimate Decision Maker” is defined. This individual is assigned authority and responsibility for providing overall direction on the implementation of EOPs, FSGs, EDMGs and SAMGs for a unit or set of units.
- On an eight (8) year frequency, sites must conduct drills demonstrating BDB strategies (including communications capabilities), including:
 - A drill that demonstrates the integrated use of FLEX strategies under the control of an Abnormal Operating Procedure (AOP) or Emergency Operating Procedure (EOP), as appropriate to the postulated scenario.
 - A drill that demonstrates the transition from a controlling AOP, EOP or Extensive Damage Mitigation Guidelines (EDMG) into Severe Accident Management Guidelines (SAMGs), and the selection of appropriate severe accident management strategies. Even though not required by the rule, licensee regulatory commitments include SAMGs to be integrated with the EOP network.
 - A drill that demonstrates the use of EDMG strategies.
 - A drill or drills to demonstrate the capability to utilize equipment necessary to implement each strategy for responding to a beyond design basis event or severe accident.

It is important to note that while it is acceptable to use an EP exercise to accomplish the new drill requirements, it is recommended that exercises not be used to meet these requirements. Graded exercises serve a specific purpose to meet the regulatory required emergency planning requirements. Combining BDB drills with a graded exercise could lead to confusion and conflicts that interfere with objectives of either or both of the activities.

5.5 NEI 14-01 Comparison Matrix

- Verify Severe Accident Management Guidelines (SAMGs) are revised and maintained in accordance with the new NSSS Owners Group guidance by the utility commitment date in the letter sent to the NRC.
- Integrate the appropriate guidelines (FSGs, EDMGs) with the EOPs in accordance with the revised NSSS Owner’s Group guidance. Provide the necessary training of new tasks on the procedure integration using the SAT process.
- Designate a member of the Emergency Response Organization (ERO) as the Ultimate Decision Maker (UDM). Provide the necessary training required for the position to ERO personnel designated.

5.6 RG 1.226 to JLD-ISG-1201-01 Comparison Matrix

- RG 1.226 endorses NEI 12-06, Revision 4, but its implementation section allows use of other NRC acceptable methods.
- The ISG recognizes that FLEX equipment may be pre-staged for up to 45 days to reduce the risk of maintenance or outage activities. All other instances of unavailability due to the lack of reasonable protection are limited to 14 days. The RG 1.226 discussion on this topic only includes the 14 day allowed outage time with no mention of the exception for 45 days if deployed to reduce the risk of maintenance or outage activities. However, in the NRC Staff’s concluding position, the NRC Staff states that Section 11.5.4 provides an acceptable method for controlling unavailability of the equipment to satisfy that element of reasonable protection. Note there is a distinction for deployed equipment for maintenance or outage activities with regard to reasonable protection.

5.7 RG 1.227 to JLD-ISG-2012-03 Comparison Matrix

The Applicable Regulations section of RG 1.227 explains a 10 CFR 50.155(f) requirement that each licensee provide reliable means to remotely monitor wide-range water level for each spent fuel pool at its site until five years have elapsed since all of the fuel within that spent fuel pool was last used in a reactor vessel for power generation. Paragraph 50.155(f) removes the requirement for operating nuclear power plants to provide wide-range spent fuel pool level monitoring capabilities for spent fuel pools that contain only fuel greater than five years old. This condition typically exists at plants with multiple spent fuel pools that use only one of the pools for freshly discharged fuel. Paragraph 50.155(a)(2)(i) removes the requirement for wide-range spent fuel pool level monitoring capabilities for all spent fuel pools at a nuclear power plant that has permanently ceased operation and removed all fuel from the reactor vessel once the NRC has docketed the appropriate certifications without regard to the age of the fuel in the pools.

6 **MBDBE RULE CROSS REFERENCE**

Introduction

The Mitigation of Beyond Design Basis Events (MBDBE) Rule Cross Reference matrix identifies sources of additional guidance and background for every paragraph in 10 CFR 50.155. It also includes information on the following related regulations and two subjects that were not included in the rule.

- 10 CFR 50 Appendix E – “Emergency Planning and Preparedness for Production and Utilization Facilities”
- 10 CFR 52.80 - “Contents of applications: additional technical information”
- Multiple Source Term Dose Assessments (MSTDAs)
- Severe Accident Mitigation Guidelines (SAMGs)

10 CFR 50.155 does not include requirements for MSTDAs and SAMGs, except for a requirement to integrate the SAMGs with the existing EOPs, because the NRC took credit for pre-existing licensee commitments (NSIAC Initiative) in these areas. It is important that licensees maintain these commitments in order to remain consistent with the basis for the rule. The Commission directed the staff in SRM-SECY-15-0065 to incorporate oversight of SAMGs into the ROP.

Major Gap Assessments and Recommended Actions

The information provided below is a summary of the most significant observations in the 10 CFR 50.155 Rule Requirements Cross Reference Matrix.

- Licensees who have not implemented NEI 12-06, rev 4 should either update their programs to address this revision, or be able to explain why implementation of an earlier revision is acceptable. See the NEI 12-06 Revision Comparison Matrix for an identification of the differences.
- The impact of many of the rule requirements depends on associated guidance. When this is the case, the 10 CFR 50.155 Rule Requirements Cross Reference Matrix refers the user to the appropriate guideline matrix in this document for information on impact and actions.
- 10 CFR 50.155(g) applies change control requirements to the entire rule, including EDMGs (that are required under paragraph 155(b)(3)). Ensure that a specific change control process is in place for EDMGs to document that changes to them continue to meet the requirements. Furthermore, ensure configuration control procedures properly handle the hand-off between the different change control requirements that govern other plant equipment and programs.
- 10 CFR 50.155 must be implemented within 2 years of its effective date for most plants, or 3 years for BWRs that received the EA-13-109 Order on severe accident capable hardened containment vents unless delays associated with reevaluated hazards apply. In that case related to hazards, a request (not an exception) for an alternative compliance date must be submitted within 90 days of the rule effective date.
- Ensure that the site-specific commitment for a capability to perform MSTDAs is maintained.
- Ensure that the NSIAC Initiative on SAMGs is maintained.

User's Notes

Due to the large size of this matrix, it has been formatted to extend across two adjacent facing pages.

An explanation of the information in each column of the matrix follows:

- Previous NRC Requirement – Quotes the applicable sections of each of the requirements that preceded 10 CFR 50.155. These include:
 - EA-12-049 – “Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events”
 - EA-12-051 – “Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation”
 - 10 CFR 50.54(hh)(2) – Extreme Damage Mitigation Guidelines (EDMGs)
- 10 CFR 50.155 Requirements – Quotes every section of the rule
- Associated Current Industry Guidance – Provides references to existing industry guidance for the associated 10 CFR 50.155 paragraphs.. The following guidance documents are referenced:
 - NEI 06-12 – “B.5.b Phase 2 & 3 Submittal Guideline”
 - NEI 12-01 – “Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities”
 - NEI 12-02 – “Industry Guidance for Compliance with NRC Order EA-12-051, ‘To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation’”
 - NEI 12-06 – “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”
 - NEI 13-06 – “Enhancements to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents”
 - NEI 14-01 – “Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents”
- Delta between 50.155 and previous requirements / current guidance – Identifies significant difference between the requirements in the rule and any applicable previous requirements or industry guidance
- SOC (FRN XXXXX) Reference – The Statements of Consideration (SOC) are published with the rule and provide valuable insights into the NRC Staff and Commission thinking behind the associated regulatory requirement. The SOC section number and title is provided for each rule paragraph. In addition, a page reference is provided to indicate where the discussion on the specific subject can be found.
- Impact / Interpretation – When applicable, provides additional thoughts on interpretation of the regulation (beyond that information provided by the associated industry guidance and the SOC).
- **“Action”** – captures any generic actions being undertaken by the industry to address the regulatory requirement. In many cases, these actions are captured in other matrices within this document and a reference to the applicable matrix is provided. This column should be used by licensees to capture utility-specific actions.

Previous NRC Requirement	10 CFR 50.155 Requirements	Associated Current Industry Guidance
<p>EA-12-049, pg. 7: "All holders of operating licenses issued under Part 50 shall, notwithstanding the provisions of any Commission regulation or license to the contrary, comply with the requirements described in Attachment 2 to this Order except to the extent that a more stringent requirement is set forth in the license."</p> <p>EA-12-049, pg. 8: "All holders of COLs issued under Part 52 shall, notwithstanding the provisions of any Commission regulation or license to the contrary, comply with the requirements described in Attachment 3 to this Order except to the extent that a more stringent requirement is set forth in the license."</p> <p>EA-12-051, pg. 8: "All holders of operating licenses issued under Part 50 shall, notwithstanding the provisions of any Commission regulation or license to the contrary, comply with the requirements described in Attachment 2 to this Order except to the extent that a more stringent requirement is set forth in the license."</p> <p>EA-12-051, pg. 9: "All holders of COLs issued under Part 52 shall, notwithstanding the provisions of any Commission regulation or license to the contrary, comply with the requirements described in Attachment 3 to this Order except to the extent that a more stringent requirement is set forth in the license."</p> <p>10CFR50.54(hh)(3) This section does not apply to a nuclear power plant for which the certifications required under § 50.82(a) or § 52.110(a)(1) of this chapter have been submitted.</p> <p>License conditions associated with Mitigation Strategies, SFPI for Summer 2 & 3, radiological protection mitigation strategies – B5b, and the COLs for the new reactor licensees contain clauses related to applicability termination.</p>	<p>(a) Applicability. (1) Each holder of an operating license for a nuclear power reactor under this part and each holder of a combined license under part 52 of this chapter for which the Commission has made the finding under § 52.103(g) shall comply with the requirements of this section until the NRC's docketing of the license holder's certifications described in §§ 50.82(a)(1) or 52.110(a) of this chapter.</p>	<p>NEI 12-06, R4, Sec 1.5, "Applicability"</p> <p>NEI 12-01, R0, Sec 1.1, "Response Staffing Assessment"</p> <p>NEI 12-02, R1, Exec Summary</p> <p>NEI 13-06, R1, Sec 1.1, " Scope And Purpose of NEI 13-06"</p> <p>NEI 14-01, R1, Sec 1, "Introduction"</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Rule adds a termination clause.</p> <p>50.54(hh)(3) is being modified to reflect the proper section numbers for the certifications (50.82(a)(1) and 52.110(a)). This affects the termination of the 50.54(hh)(1) requirements for COL holders and is a backfit. (See the supplement to SECY-16-0142 dated 2/22/2017.) The original version of (hh)(3) terminated the B.5.a and B.5.b requirements on submittal of the certification of permanent cessation of operations rather than the certification of permanent removal of fuel from the reactor vessel; this was in error and the NRC corrected it using the original adequate protection justification.</p>	<p>V.C.: "Applicability" – pg. 60</p> <p>V.C.: "EDMGs" – pg. 80</p> <p>VI.: "Paragraph 50.155(a), "Applicability"- pg. 111</p>	<p>10 CFR 50.54(hh)(3), which has been renumbered as (hh)(2) by the MBDBE Rulemaking, formerly provided the termination clause for the EDMGs, which is now provided by 50.155(a)(2). See the discussion on that section with regard to the changes in the termination criteria for EDMGs.</p>	<p>None</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>10CFR50.54(hh)(3) – termination provision for 50.54(hh)(2) for EDMGs “This section does not apply to a nuclear power plant for which the certifications required under § 50.82(a) or § 52.110(a)(1) of this chapter have been submitted.”</p>	<p>(2)(i) Once the NRC has docketed the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter, submitted by a licensee subject to the requirements of this section, that licensee need only comply with the requirements of § 50.155(b) through (e), and (g) of this section associated with spent fuel pool cooling capabilities.</p> <p>(ii) Holders of operating licenses or combined licenses for which the NRC has docketed the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter need not meet the requirements of this section except for the requirements of paragraph (b)(3) of this section associated with spent fuel pool cooling capabilities once the decay heat of the fuel in the spent fuel pool can be removed solely by heating and boiling of water within the spent fuel pool and the boil-off period provides sufficient time for the licensee to obtain off-site resources to sustain the spent fuel pool cooling function indefinitely, as demonstrated by an analysis performed and retained by the licensee.</p>	None
Licensee specific	(iii) is a licensee specific requirement.	None
<p>10CFR50.54(hh)(3) – termination provision for 50.54(hh)(2) for EDMGs “This section does not apply to a nuclear power plant for which the certifications required under § 50.82(a) or § 52.110(a)(1) of this chapter have been submitted.”</p>	<p>(iv) Holders of operating licenses or combined licenses for which the NRC has docketed the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter need not meet the requirements of this section once all irradiated fuel has been permanently removed from the spent fuel pool(s).</p>	None

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>The life of an Order is related to the existence of the operating license. Orders typically include clauses regarding provisions for rescission or relaxation of them upon a showing of good cause, paralleling the Enforcement Manual, section 2.7.8.</p>	<p>IV.L: “Clarifications to Decommissioning Provisions” – pg. 47</p> <p>IV.N.3: “Comment Regarding Decommissioning” – pg. 51</p> <p>V.C., “Decommissioning reactors” – pg. 61</p> <p>V.C., “Assumed Damage State for Development of the Strategies and Guidelines” - pg. 76</p> <p>VI., “Paragraph 50.155(a), Applicability” - pg. 112</p>	<p>Decommissioning activities</p> <p>This section avoids the need for a licensee to request exemptions from these requirements upon cessation of operation and permanent removal of fuel from the reactor vessel, as well as further exemptions once the fuel is old enough and decay heat has reduced sufficiently.</p>	<p>Include in decommissioning plan</p>
<p>None</p>	<p>V.C., “Decommissioning Reactors” – pg. 65</p> <p>VI., Paragraph 50.155(a)(2)(iii) – pg. 113</p>	<p>Exempts Millstone Power Station Unit 1 from the requirements of 10 CFR 50.155</p>	<p>None</p>
<p>This provision extends the effectiveness of the regulation for B.5.b SFP strategies until the irradiated fuel is removed from the SFP, taking the place of the current Mitigation Strategies license condition requirement for all operating power reactors</p>	<p>See references above for 50.155(a)(2)(i)</p>	<p>Decommissioning activities.</p> <p>Extends the applicability of the regulation for B.5.b SFP strategies until the irradiated fuel is removed from the SFP and avoids the need for an exemption request once the criteria are met.</p>	<p>Include in decommissioning plan</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>EA-12-049, Att 2, pg. 1, (5): “Full compliance shall include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.”</p>	<p>(b) Integrated response capability. Each applicant or licensee shall develop, implement, and maintain an integrated response capability that includes:</p>	<p>NEI 12-06, R4</p>
<p>EA-12-049, Att 2, (2): “These strategies must be capable of mitigating a simultaneous loss of all alternating current (ac) power and loss of normal access to the ultimate heat sink and have adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on a site subject to this Order.”</p> <p>EA-12-049, Att 2 & 3, (2): Applicable to Vogtle Units 3 and 4 – identical language except for referring to the normal (vs. ultimate) heat sink.</p>	<p>(1) Mitigation Strategies for Beyond-Design-Basis External Events. 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, for passive reactor designs, a loss of normal access to the normal heat sink. These strategies and guidelines must be capable of being implemented site-wide and must include:</p>	<p>NEI 12-06, R4, Sec 1.3, “FLEX Objectives & Guiding Principles” and Sec 5.3.1, “Protection of FLEX Equipment”</p> <p>NEI 14-01, R1, Sec 3.3, “Flex Support Guidelines (FSGs)”</p>
<p>EA-12-049, Att 2, (1): “Licensees or construction permit (CP) holders shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and SFP cooling capabilities following a beyond-design-basis external event.”</p> <p>EA-12-049, Att 3, (1): “Licensees shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and SFP cooling capabilities following a beyond-design-basis external event.</p>	<p>(i) Maintaining or restoring core cooling, containment, and spent fuel pool cooling capabilities; and</p>	<p>NEI 12-06, R4, Sec 1.3, “FLEX Objectives & Guiding Principles”</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
None	<p>V.A.2, “Rule-making Objectives” – pg. 54</p> <p>V.C.,: “Integrated Response Capability” – pg.66</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg. 113</p>	Impact depends on the revision of NEI 12-06 a Licensee used to implement FLEX for compliance to Order EA-12-049	Use NEI 12-06 Revision Gap Review Matrix
<p>None</p> <p>Note that the rule and SOC clarify the interpretation of loss of all ac power. The rule intent is consistent with NEI 12-06 as explained in the Statements of Consideration, “Public Comments and Changes to the Rule, section D, page 27. Also see JLD-ISG-2012-01, R2. Sec 1.2.</p>	<p>IV.D., Loss of all AC – pg. 26</p> <p>IV.N.1., Different Approach to MBDBE – pg. 49</p> <p>V.A.1, “Rule-making Objectives” – pg. 53</p> <p>V.B.1,: “Rule-making Scope” – pg. 55</p> <p>V.C., “Assumed Damage State for Development of the Strategies and Guidelines” – pg. 69</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” - p 115</p>	Impact depends on the revision of NEI 12-06 a Licensee used to implement FLEX for compliance to Order EA-12-049	<p>Use NEI 12-06 Revision Gap Review Matrix</p> <p>Use NEI 14-01 Compliance Matrix</p>
None	<p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg. 115</p>	Impact depends on the revision of NEI 12-06 a Licensee used to implement FLEX for compliance to Order EA-12-049	Use NEI 12-06 Revision Gap Review Matrix

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>EA-12-049, Att 2: "...The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely."</p>	<p>(ii) The acquisition and use of offsite assistance and resources to support the functions required by paragraph (b)(1)(i) of this section indefinitely, or until sufficient site functional capabilities can be maintained without the need for the mitigation strategies.</p>	<p>NEI 12-06, R4, Sec 2.5, "Synchronization with Off-Site Resources" NEI 12-06, R4, Sec 12, "Off Site Resources"</p>
<p>SRM to COMSECY-14-0037: "The Commission has approved the staff's recommendation 1 that licensees for operating nuclear power plants need to address the reevaluated flooding hazards within their mitigating strategies for beyond-design-basis external events; and recommendation 2 that licensees for operating nuclear power plants may need to address some specific flooding scenarios that could significantly damage the power plant site by developing targeted or scenario-specific mitigating strategies, possibly including unconventional measures, to prevent fuel damage in reactor cores or spent fuel pools."</p>	<p>(2) Reevaluated Seismic and Flooding Hazards Mitigation. Each licensee that received the March 12, 2012, NRC letter issued under § 50.54(f) of this part shall consider the effects of the reevaluated hazards information developed in response to that request if the magnitude of those hazards exceeds the external design basis of the facility. Licensees shall address the effects of the reevaluated hazard information using one or both of the following approaches:</p> <p>(i) The mitigation strategies and guidelines required by paragraph (b)(1) of this section, as implemented or as modified;</p> <p>(ii) Event-specific approaches.</p>	<p>NEI 12-06, R4: Appendices G / H, "Mitigating Strategies Assessment for New Flood / Seismic Hazard Information"</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Eliminates the phased approach and replaces with a performance based approach as stated in the SOC Page 46. This recognizes that future nuclear plant designers may be able to develop and implement strategies and guidelines that do not rely on a three phase approach.</p> <p>Adds the consideration that site functional capabilities can be restored without the need for the on-going use of mitigation strategies. However, the rule intent is consistent with NEI 12-06.</p>	<p>IV.K., "Consideration of Explicit Requirements for a Three-Phase Response" – pg. 46</p> <p>V.C., "Assumed Damage State for Development of the Strategies and Guidelines" – pg. 77</p> <p>VI., "Paragraph 50.155(b), "Integrated response capability" – pg. 116</p>	<p>No impact expected. The guidance for coordination of and transition to off-site resources has not changed significantly between NEI 12-06 Revisions</p>	<p>Use NEI 12-06 Revision Gap Review Matrix</p>
<p>Industry agreed to do flooding and seismic mitigating strategy assessments (MSAs) based on an understanding of the intent of the SRM and the expected requirements in 10 CFR 50.155. MSAs were complete as part of this commitment but actions out of those MSAs may not have been completed at the time of the rule effective date. These actions will have to be completed as part of the rule implementation.</p>	<p>IV.B., "Seismic and Flooding Reevaluated Hazards" – pg. 22</p> <p>V.C., "Equipment" – pg. 91</p> <p>VI., "Paragraph 50.155(b), "Integrated response capability" – pg. 116</p>	<p>Impact depends on the revision of NEI 12-06 Appendix G/H a Licensee used to complete the MSAs</p>	<p>Integrate MSAs with FLEX strategies</p> <p>Use NEI 12-06 Revision Gap Review Matrix</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>10CFR50.54(hh)(2): “Each licensee shall develop and implement guidance and strategies intended 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 due to explosions or fire, to include strategies in the following areas: (i) Firefighting; (ii) Operations to mitigate fuel damage; and (iii) Actions to minimize radiological release.</p> <p>EA-06-137</p> <p>Mitigation Strategies License Condition</p>	<p>(3) Extensive Damage Mitigation Guidelines (EDMGs). 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, to include strategies and guidelines in the following areas: (i) Firefighting; (ii) Operations to mitigate fuel damage; and (iii) Actions to minimize radiological release.</p>	<p>NEI 06-12, R2/R3, “ B.5.b Phase 2 & 3 Submittal Guideline”</p> <p>NEI 14-01, R1, Sec 2.4, “Integration Of Procedure And Guideline Sets”, and Sec 3.4, “Extensive Damage Mitigation Guidelines”</p> <p>NUREG 0800, Sec 19.4, “Strategies and Guidance to Address Loss-of-Large Areas of the Plant Due to Explosions and Fires”</p> <p>U.S. Nuclear Regulatory Commission, “NRC Staff Guidance for Use in Achieving Satisfactory Compliance with February 25, 2002, Order Section B.5.b,” Letter from James E. Dyer (NRC) to Holders of Licenses for Operating Power Reactors, February 25, 2005.</p>
<p>None</p>	<p>(4) Integration of capabilities required by paragraphs (b)(1) through (b)(3) of this section with the Emergency Operating Procedures (EOPs).</p>	<p>NEI 12-06, R4, Sec 2.4, “Programmatic Controls”</p> <p>NEI 12-06, R4, Sec 11.4, “Procedural Guidance”</p> <p>NEI 13-06, R1, Sec 5.3.1, “Industry Performance Standards for BDB Event Response Drills”</p> <p>NEI 14-01, R1 – Procedure Integration - Sec 2.1, 2.4: (not including SAMG recommendations)</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>There is a minor difference in the preamble wording of 50.155(b) which requires licensees to “develop, implement, and maintain”, as compared to the words in 50.54(hh)(2) which require that licensees “develop and implement” the strategies.</p>	<p>V.C., “Decommissioning reactors” – pg. 61</p> <p>V.C., “Integrated Response Capability” – pg. 66</p> <p>V.C., “EDMGs” – pg. 79</p> <p>V.C., “Equipment” – p 92</p> <p>V.C.,: “Implementation” – p 101</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg. 118</p>	<p>A staffing analysis for 10 CFR 50.155(b)(3) is satisfied by the analysis performed to meet the requirement in 10 CFR 50, Appendix E, Section IV.A.9, and the guidance in NSIR/DPR-ISG-01, Interim Staff Guidance Emergency Planning For Nuclear Power Plants.</p>	<p>Licensees are committed to either rev 2 or 3 of NEI 06-12. Check your commitment.</p> <p>Use the NEI 14-01 Compliance Matrix</p>
<p>New requirement in addition to the guidance in NEI 12-06. The Statements of Consideration state that these strategies, guidelines, and procedures were developed at separate times over a period of several decades, and that the associated efforts have been focused on responding to different types of initiating events and plant damage states. They may not properly reflect consideration of the interfaces, dependencies, and interactions. EDMGs are a good example, as they were not part of the post-Fukushima actions.</p>	<p>V.A.2., “Rulemaking Objectives”, “Establishes new requirements for an integrated response capability” - pg. 55</p> <p>V.B., “Rulemaking Scope”, “Scope of Procedure and Guideline Integration” – pg. 57,</p> <p>“Guideline Sets Excluded from the Final Rule” pg. 59</p> <p>V.C., “Integrated Response Capability” – pg. 66</p> <p>V.C., “Integration with EOPs” – pg. 81</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg. 119</p>	<p>This is addressed through the implementation of NEI 14-01 and the industry voluntary commitment to maintain SAMGs. Review of plant SAMGs will be included as part of the Reactor Oversight Process (ROP).</p> <p>The BWROG and PWROG are developing generic approaches for some of the NEI 14-01 requirements that will require site specific implementation.</p>	<p>Use NEI 12-06 Revision Gap Review Matrix</p> <p>Use the NEI 13-06 and 14-01 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	(5) Sufficient staffing to support implementation of the capabilities required in paragraphs (b)(1) through (b)(3) of this section in conjunction with the EOPs to respond to events.	<p>NEI 12-06, Sec 11.7, "Staffing", and Appendix E Attachment 4, "Guidance On The Consideration Of Performance Attributes".</p> <p>NEI 12-01, R0, Sec 1.1, "Response Staffing Assessment"</p> <p>NEI 12-01, R0, Secs 3.4 thru 3.10, elements of a response staffing study</p> <p>NEI 14-01, R1, Sec 4.2, "Command and Control Key Functions" and Sec 4.3, "Command and Control Structure Considerations"</p>
None	(6) A supporting organizational structure with defined roles, responsibilities, and authorities for directing and performing the capabilities required in paragraphs (b)(1) through (b)(3) of this section.	<p>NEI 14-01, R1, sec 4.1, 4.2, and 4.3, "Command and Control"</p> <p>NEI 12-01, R0, "Executive Summary"</p> <p>NEI 12-01, R0, "Introduction"</p> <p>NEI 12-01, Table 1-1, "Summary of Licensee Actions for Responding to NRC Information Requests Related to EP"</p> <p>NEI 14-01, R1, Sec 4.2, "Command and Control Key Functions" and Sec 4.3, "Command and Control Structure Considerations"</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>The staffing and communications requirements in 10 CFR 50.155 were not explicit requirements in the Mitigation Strategies Order (EA-12-049), even though both were considered and addressed as part of implementation of the Order. The NRC addressed these requirements in the rule’s supporting backfitting and issue finality assessment.</p> <p>Paragraph (b)(5) applies staffing necessary for an integrated response capability to support use of the capabilities in §50.155(b), which includes strategies required by (b)(3).</p>	<p>IV.F., “Relocation and Revision to the Staffing and Communications Requirements” - pg. 32</p> <p>V.B.2 & V.B.3, “Rulemaking Scope” – pg.55</p> <p>V.C., “Staffing” – pg. 84</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg. 119</p>	<p>This potentially will require a staffing analysis if flooding or seismic MSA results changed your strategy. A staffing analysis for 10 CFR 50.155(b)(3) is satisfied by the analysis performed to meet the requirement in 10 CFR 50, Appendix E, Section IV.A.9, and the guidance in NSIR/DPR-ISG-01, Interim Staff Guidance Emergency Planning For Nuclear Power Plants.</p> <p>As described on Page 120 of the SOC, the staffing requirement of (b)(5) is verified through the use of drills, existing training analyses and other methods as opposed to the methodology contained in NEI 12-01.</p>	<p>Use NEI 12-01 and 14-01 Compliance Matrices</p>
<p>Guidance on requirements is provided in NEI 12-01, 13-06 and 14-01.</p>	<p>V.B.2 & V.B.3, “Rulemaking Scope” – pg. 55</p> <p>V.C., “Command and Control” – pg. 85</p> <p>VI., “Paragraph 50.155(b), “Integrated response capability” – pg.120</p>	<p>See NEI 12-01, 13-06 and 14-01 Compliance Matrices</p>	<p>Use NEI 12-01, 13-06 and 14-01 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>EA-12-049, Att 2, (3): “Licensees or CP holders must provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on a site subject to this Order.”</p> <p>EA-12-049, Att 3 (for Vogtle 3 & 4), (3): “Licensees must provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on a site subject to this Order.”</p>	<p>(c) Equipment.</p> <p>(1) The equipment relied on for the mitigation strategies, guidelines, and event-specific approaches required by paragraphs (b)(1) and (b)(2) of this section must have sufficient capacity and capability to perform the functions required by paragraphs (b)(1) and (b)(2).</p> <p>(2) The equipment relied on for the mitigation strategies and guidelines required by paragraph (b)(1) of this section must be reasonably protected from the effects of natural phenomena that are equivalent in magnitude to the phenomena assumed for developing the design basis of the facility.</p> <p>(3) The equipment relied on for paragraph (b)(2) of this section must be reasonably protected from the effects of the reevaluated hazards determined in response to the March 12, 2012, NRC letter issued under § 50.54(f) of this part.</p>	<p>NEI 12-06, R4, Sec 3.3, “Considerations In Utilizing Off-Site Resources”</p> <p>NEI 12-06, R4, Sec 2.3, “Define Site-Specific Flex Strategies”</p> <p>NEI 12-06, R4, Sec 11.2, “Equipment Design”</p> <p>NEI 12-06, R4, Sec 11.3, “Equipment Storage”</p> <p>NEI 12-06, R4, App G / H – “Mitigating Strategies Assessments For New Flooding / Seismic Hazard Information”.</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Rule requires addressing the effect of the reevaluated seismic and flooding hazards on the FLEX equipment, the Order did not require this, but industry agreed to perform Mitigating Strategies Assessments. The need to evaluate the FLEX equipment against the reevaluated hazard was implied by the SRM to COM SECY-14-0037. Industry executives agreed to perform "Mitigating Strategies Assessments" without specific direction from the NRC based on the intent of the SRM and the understanding that this would ultimately be required by 10 CFR 50.155.</p>	<p>IV.C., "Reasonable Protection" – pg. 23</p> <p>IV.M., "Clarifications to Equipment Requirements and Removal of Proposed Maintenance Requirement" – pg. 47</p> <p>V.C., "Equipment" – pg. 87</p> <p>VI., "Paragraph 50.155(c), "Equipment" – pg. 120</p> <p>VI., "Paragraph 50.155(c), "Equipment", "Reasonable Protection" – pg. 122</p>	<p>MSAs were completed or are on-going after the development and implementation of the FLEX strategies. As a minimum, actions from the MSAs will have to be addressed and configuration control of the MSA inputs, assumptions and capabilities will need to be maintained as part of the FLEX program to satisfy the (b)(2) section of the rule.</p>	<p>Use NEI 12-06 Revision Gap Review Matrix</p> <p>Complete MSAs per established regulatory schedule and Integrate MSAs with FLEX strategies.</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	(4) Each licensee shall provide sufficient communications capability, both onsite and offsite, to support implementation of the mitigation strategies and guidelines of paragraphs (b)(1) and (b)(2) of this section.	<p>NEI 12-01, R0, Executive Summary</p> <p>NEI 12-01, R0, Introduction</p> <p>NEI 12-01, R0, Table 1-1, "Summary of Licensee Actions for Responding to NRC Information Requests Related to EP"</p> <p>NEI 12-01, R0, Secs: 4.1.thru 4.11, communications during an extended loss of AC power</p> <p>NEI 13-06, R1, recommended actions for EP facilities and equipment, Secs 4.3.1 and 4.3.2</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>None - As identified in the SOC, page 102, the communication requirements were included as part of the implementation of the Mitigating Strategy Order.</p>	<p>IV.F., "Relocation and Revision to the Staffing and Communications Requirements" – pg. 32</p> <p>V.B.2 & V.B.3, "Rulemaking Scope" – pg. 55</p> <p>V.C., "Onsite and offsite communications capability" – pg. 101</p> <p>VI., "Paragraph 50.155(c), "Equipment" – pg. 125</p>	<p>Communications assessments were completed as part of the response to the Fukushima 50.54(f) letter and licensees may have made commitments to maintain or enhance communications under ELAP conditions. Many Licensees used the communications capabilities described in these assessments as part of the FLEX strategies. As a minimum, configuration control and maintenance of the communications equipment need to be maintained as part of the FLEX program to satisfy the (C)(4) section of the rule.</p> <p>Part of the reason the NRC moved the communications requirements from App E to 50.155 was to avoid requiring licensees to include the beyond-design-basis communications in their EP plans. This avoids issues with change control under 50.54(q) rather than 50.155(g). There can be impacts on the ability to change items later if they have been included in the EP plan.</p>	<p>Use NEI 12-01 and 13-06 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	<p>(d) Training requirements. Each licensee shall provide for the training and qualification of personnel that perform activities in accordance with the capabilities required by paragraphs (b)(1) through (b)(3) of this section. The training and qualification on these activities must be developed using the systems approach to training as defined in § 55.4 of this chapter except for elements already covered under other NRC regulations.</p>	<p>NEI 06-12, R 2, numerous locations</p> <p>NEI 13-06, R1, Recommended actions for BDB event response training, Sec 3.3.1, 3.3.2, 3.3.3, 3.3.4, and 3.3.5</p> <p>NEI 12-06, R4, Sec 11.6, "Training"</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Licenses are required to use the SAT process for newly identified training requirements to support the effective use of the strategies and guidelines required by the Rule</p>	<p>V.C., "Training" – pg. 93 VI., " Paragraph 50.155(d), "Training requirements"" – pg. 126</p>	<p>Current training programs as defined in 10 CFR can provide for the knowledge and abilities required for performing activities in accordance with the strategies and guidelines required by the final Rule. NRC is not requiring licensees to revise these training programs to use the SAT process to meet the MBDBE requirements:</p> <ul style="list-style-type: none"> (a) 10 CFR 55, Operators' Licenses (b) 10 CFR 50.120, Training and Qualification of Nuclear Plant Personnel (c) 10 CFR 50, Appendix E, Section IV.F, training for Emergency Response personnel 	<p>Action is only required for new training requirements identified as part of rule implementation</p> <p>Use NEI 13-06 Compliance Matrix</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>Part 50 App E, F.2.j., Training: “The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a.</p>	<p>(e) Drills or exercises. (1) An applicant for an operating license issued under this part shall conduct an initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraphs (b)(1) or (b)(3) of this section including demonstration of the associated communications capability, no more than 12 months before issuance of an operating license for the unit described in the license application.</p>	<p>NEI 12-01, R0, Secs: 4.1.thru 4.11, communications during an extended loss of AC power NEI 13-06, R1, Executive Summary NEI 13-06, R1, Sec 5.3, recommended actions for drills and exercises, (excluding SAMG recommendations):</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Establishes requirements for initial drills or exercises for applicants for Part 50 licenses. Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses at the time the rule becomes effective.</p> <p>Although NEI 13-06 does not specifically address its applicability for new plants, its intent in this regard is implied in the executive summary which states that the purpose of the document is “to promote consistent implementation of the actions that address the Tier 2 EP enhancements discussed above.” The discussion being referred to addresses Order EA-12-049 and NEI 12-06, both of which are applicable to new plants.</p> <p>Note that the rule does not extend to SAMGs.</p> <p>10 CFR 50.54(hh)(2) strategies, procedures, and guidance is replaced with 10 CFR 50.155 drill and exercise requirements</p>	<p>IV.J., “Drill Frequency” – pg. 44</p> <p>V.B.2 & V.B.3, “Rulemaking Scope” – pg. 55</p> <p>V.C., “Drills or Exercises” – pg. 95</p> <p>VI., “Paragraph 50.155(e), “Drills or exercises” – pg. 127</p> <p>VI., “10 CFR Part 50, Appendix E, Section IV, Training” - pg. 137</p>	<p>Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses. at the time the rule becomes effective.</p>	<p>Use NEI 12-01 and 13-06 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>Part 50 App E, F.2.j., Training: “The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a.</p>	<p>(2) A holder of a combined license issued under part 52 of this chapter before the Commission has made the finding under § 52.103(g), shall conduct an initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraphs (b)(1) or (b)(3) of this section including demonstration of the associated communications capability, no more than 12 months before the date specified for completion of the last inspections, tests, and analyses in the inspections, tests, analyses, and acceptance criteria completion schedule required by § 52.99(a) of this chapter for the unit described in the combined license.</p>	<p>NEI 12-01, R0, Secs: 4.1.thru 4.11, communications during an extended loss of AC power</p> <p>NEI 13-06, R1, Executive Summary</p> <p>NEI 13-06, R1, Sec 5.3, recommended actions for drills and exercises, (excluding SAMG recommendations):</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Establishes requirements for initial drills or exercises for applicants for Part 52 licenses. Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses at the time the rule becomes effective and have received their 52.103(g) finding (Commission permission to operate).</p> <p>Although NEI 13-06 does not specifically address its applicability for new plants, its intent in this regard is implied in the executive summary which states that the purpose of the document is “to promote consistent implementation of the actions that address the Tier 2 EP enhancements discussed above.” The discussion being referred to addresses Order EA-12-049 and NEI 12-06, both of which are applicable to new plants.</p> <p>Note that the rule does not extend to SAMGs</p> <p>10 CFR 50.54(hh)(2) strategies, procedures, and guidance is replaced with 10 CFR 50.155 drill and exercise requirements</p>	<p>IV.J., “Drill Frequency” – pg. 44</p> <p>VI., “Paragraph 50.155(e), “Drills or exercises” – pg. 129</p>	<p>This is a COL-specific requirement that omits (b)(2) because no COL holders have reevaluated hazards.</p> <p>Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses at the time the rule becomes effective.</p>	<p>Use NEI 12-01 and 13-06 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>Part 50 App E, F.2.j., Training: “The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a</p>	<p>(3) Once the Commission issues an operating license to an entity described in paragraph (e)(1) of this section or makes the finding under § 52.103(g) of this chapter for an entity described in paragraph (e)(2) of this section, the licensee shall conduct subsequent drills or exercises that collectively demonstrate a capability to use at least one of the strategies and guidelines in each of paragraphs (b)(1) and (b)(3) of this section in succeeding 8-year intervals. The drills or exercises performed to demonstrate this capability must include transitions from other procedures and guidelines as applicable, including demonstration of the associated communications capability. Each licensee shall not exceed 8 years between any consecutive drills or exercises.</p>	<p>NEI 12-01, R0, Secs: 4.1.thru 4.11, communications during an extended loss of AC power</p> <p>NEI 13-06, R1, Executive Summary</p> <p>NEI 13-06, R1, Sec 5.3, recommended actions for drills and exercises, (excluding SAMG recommendations)</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Establishes requirements for initial drills or exercises for applicants for Part 52 licenses. Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses at the time the rule becomes effective and have received their 52.103(g) finding (Commission permission to operate).</p> <p>Although NEI 13-06 does not specifically address its applicability for new plants, its intent in this regard is implied in the executive summary which states that the purpose of the document is “to promote consistent implementation of the actions that address the Tier 2 EP enhancements discussed above.” The discussion being referred to addresses Order EA-12-049 and NEI 12-06, both of which are applicable to new plants.</p> <p>Note that the rule does not extend to SAMGs</p>	<p>VI., “Paragraph 50.155(e), “Drills or exercises” – p 129</p>	<p>Other than timing, the requirements are the same as those established under (e)(4) for those that already hold licenses at the time the rule becomes effective.</p>	<p>Use NEI 12-01 and 13-06 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>Part 50 App E, F.2.j., Training: “The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a</p>	<p>(4) A holder of an operating license issued under this part [[or a combined license under part 52 of this chapter for which the Commission has made the finding specified in § 52.103(g)]] as of [EFFECTIVE DATE OF THE FINAL RULE], shall conduct an initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraph (b)(1), (b)(2), or (b)(3) of this section[[, or for a combined license holder paragraphs (b)(1) and (b)(3)]], including demonstration of the associated communications capability , by [DATE 4 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE]. Following this initial drill or exercise, the licensee shall conduct subsequent drills, exercises, or both that collectively demonstrate a capability to use at least one of the strategies and guidelines under paragraph (b)(1) or (b)(2), and at least one of the strategies and guidelines under paragraph (b)(3)[[, or for combined license holders, in each paragraphs (b)(1) and (b)(3) of this section,]] in succeeding 8-year intervals. The drills or exercises performed to demonstrate this capability must include transitions from other procedures and guidelines as applicable, including demonstration of the associated communications capability. Each licensee shall not exceed 8 years between any consecutive drills or exercises.</p>	<p>NEI 12-01, R0, Secs: 4.1.thru 4.11, communications during an extended loss of AC power</p> <p>NEI 13-06, R1, Sec 5.3, recommended actions for drills and exercises (excluding SAMG recommendations)</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Note that the rule does not extend to SAMGs as noted in the SOC on page 56.</p>	<p>V.B., Rulemaking Scope, “Severe Accident Management Guideline and Multiple Source Term Dose Assessment” – pg. 56</p> <p>VI., “Paragraph 50.155(e), “Drills or exercises” – pg. 130</p>	<p>None for those that already hold Part 50 licenses at the time the rule becomes effective.</p>	<p>Use NEI 12-01 and 13-06 Compliance Matrices</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>EA-12-051, Att. 2: All licensees identified in Attachment 1 to this Order shall have a reliable indication of the water level in associated spent fuel storage pools capable of supporting identification of the following pool water level conditions by trained personnel: (1) level that is adequate to support operation of the normal fuel pool cooling system, (2) level that is adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck, and (3) level where fuel remains covered and actions to implement make-up water addition should no longer be deferred.”</p> <p>EA-12-063, Reliable Spent Fuel Pool Instrumentation SFPI Specific License Condition</p>	<p>(f) Spent fuel pool monitoring. In order to support effective prioritization of event mitigation and recovery actions, each licensee shall provide reliable means to remotely monitor wide-range water level for each spent fuel pool at its site until 5 years have elapsed since all of the fuel within that spent fuel pool was last used in a reactor vessel for power generation. This provision does not apply to General Electric Mark III upper containment pools.</p>	<p>NEI 12-02, R1, Exec Summary. NEI 12-02, R1, Section 2.3, “Wide Range Pool Level Instrumentation</p>
<p>None</p>	<p>(g) Documentation of changes. (1) A licensee may make changes in the implementation of the requirements in this section without NRC approval, provided that before implementing each such change, the licensee demonstrates that the provisions of this section continue to be met and maintains documentation of changes until the requirements of this section no longer apply.</p>	<p>NEI 12-06, R4, Sec 11.8, “Configuration Control”</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>The Rule added a termination clause.</p> <p>Rule specifically excludes GE Mark III upper containment pools.</p> <p>Previously this distinction was made in the guidance (NEI 12-02)</p> <p>Decommissioning requirements are new.</p>	<p>IV.I., “Spent Fuel Pool Instrumentation Requirements” – pg. 43</p> <p>IV.N.2., “Comments that Suggest the NRC Revisit Issues Associated with SFP Safety” – pg. 51</p> <p>V.C., “Decommissioning reactors” – pg. 61</p> <p>V.C., “Spent Fuel Pool Monitoring” – pg. 96</p> <p>VI., “Paragraph 50.155(f), “Spent fuel pool monitoring” – pg. 131</p>	<p>Decommissioning activities</p> <p>The 5-year limitation and the exclusion of upper containment pools in the rule is essentially an exemption to cover these elements of the guidance that would otherwise result in backfitting. See NEI 12-02, section 2.3.</p>	<p>Include in decommissioning plan</p>
<p>None.</p>	<p>IV.H., “Change Control Enhancements” – pg. 39</p> <p>V.C., “Documentation of Changes” – pg. 97</p> <p>VI., “ Paragraph 50.155(g), “Documentation of changes” – pg. 131</p>	<p>This is intended to be consistent with the change control guidance in NEI 12-06.</p> <p>NEI 06-12 (EDMG) does not contain change control guidance, but licensees may have specific requirements. The B.5.b strategies relied on the licensee’s regulatory commitment management program for control of the specifics. The rule requirement should be interpreted to mean that changes to EDMGs that are consistent with existing endorsed guidance may be made without prior NRC approval. For example, a licensee may change EDMG strategies to make them the same as FLEX strategies without prior NRC approval as long as all applicable requirements are met.</p>	<p>Refer to the NEI 12-06 revision comparison matrix</p> <p>Section 155(g) applies change control requirements to the entire rule, including EDMGs (155(b)(3)). Ensure that a specific change control process is in place for EDMGs.</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	(2) Changes in the implementation of requirements in this section subject to other change control processes than paragraph (g) of this section must be processed via their respective change control processes, unless the changes being evaluated impact only the implementation of the requirements of this section.	None
None	<p>(h) Implementation. Unless otherwise specified in this section:</p> <p>(1) Each holder of an operating license for a nuclear power reactor under this part on [INSERT EFFECTIVE DATE OF THE FINAL RULE] and each holder of a combined license under part 52 of this chapter for which the Commission made the finding specified in § 52.103(g) as of [INSERT EFFECTIVE DATE OF THE FINAL RULE], shall continue to comply with the provisions of paragraph (b)(3) of this section, and shall comply with all other provisions of this section no later than [INSERT DATE 3 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE] for licensees that received NRC Order EA-13-109 or [INSERT DATE 2 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE] for all other applicable licensees.</p>	None

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
None. This is consistent with other change control processes.	<p>V.C., "Documentation of Changes" – pg. 99</p> <p>VI., " Paragraph 50.155(g), "Documentation of changes" – p 133</p>	None	Ensure configuration control procedures properly handle the hand-off between different change control requirements dictated by other regulations (e.g., 50.59, 73.58, etc.).
Establishes rule compliance date for OIs issued for Licensees under Part 50 and for COLs issued for Licensees under Part 52.	<p>IV.G., Flexible Scheduling Provisions and Cumulative Effects of Regulation Feedback" – pg. 34</p> <p>V.C., "Implementation" – pg. 100</p> <p>VI., " Paragraph 50.155(h), "Implementation" – pg. 134</p>	<p>10CFR50.155 must be implemented within 2 years (3 years for BWRs that received Order EA-12-109 – severe accident capable hardened vent order – applicable to BWRs with Mark 1 or 2 containments) of its effective date unless delays caused by reevaluated hazards apply.</p> <p>Note that the requirements for EDMGs in 50.155(b)(3) have merely been relocated from 50.54(hh)(2) and compliance must be maintained.</p>	Complete rule implementation within 3 years or request an alternative compliance date.

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	<p>(2) For licensees that cannot achieve compliance with paragraph (b)(2) of this section to address a reevaluated hazard within the schedule of paragraph (h)(1) of this section, the NRC will consider an alternative compliance date if the licensee submits to the Director, Office of Nuclear Reactor Regulation, under § 50.4 of this part, no later than [INSERT DATE 90 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE], a request to revise the compliance date with good cause for not achieving compliance within the schedule of paragraph (h)(1) of this section. Unless the licensee is notified to the contrary, the submitted request to revise the compliance date will be regarded as approved by the Commission 120 days after submission to the Commission.</p>	None

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Establishes flexible schedule of compliance for Licensees developing mitigation strategies to comply with paragraph (b)(2).</p>	<p>IV.G., "Flexible Scheduling Provisions and Cumulative Effects of Regulation Feedback" – pg. 34</p> <p>V.C., "Implementation" – pg. 100</p> <p>VI., " Paragraph 50.155(h), "Implementation", p 135</p>	<p>Determine if implementation will be delayed beyond 2 years (3 years for BWRS with Mark 1 or 2 containments) due to external hazard evaluations.</p>	<p>If implementation will be delayed because of external hazard evaluations, request an alternative compliance date within 90 days of the rule effective date.</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	<p>(i) Rescission of orders and removal of license conditions.</p> <p>(1) On [INSERT DATE 3 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE], Order EA-12-049, "Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Order EA-12-051, "Order Modifying Licenses With Regard to Reliable Spent Fuel Pool Instrumentation," and Order EA-12-063, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," are rescinded for each licensee or construction permit holder that was issued those Orders.</p> <p>(2) On [INSERT THE EFFECTIVE DATE OF THE FINAL RULE], Order EA-06-137, "Order Modifying Licenses," is rescinded for each licensee that was issued Order EA-06-137.</p> <p>(3) On [INSERT THE EFFECTIVE DATE OF THE FINAL RULE], the Mitigation Strategies License Condition is deemed removed from the power reactor license of each licensee subject to this section.</p> <p>(4) On [INSERT THE EFFECTIVE DATE OF THE FINAL RULE], the license condition associated with Order EA-06-137 is deemed removed from the power reactor license of each applicable licensee subject to this section.</p>	None
Licensee specific	<p>(5), (6), (7), (8) and (9) are licensee specific rescission requirements applicable to: Enrico Fermi Nuclear Plant Unit 3, Virgil C. Summer Nuclear Station Units 2 and 3, and William States Lee South Texas Project Units 3 and 4, Levy Nuclear Plant Units 1 and 2</p>	None

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>The rescission of the Orders 3 years after the effective date of the rule will make both the rule and the Orders effective at the same time for some licensees.</p>	<p>V.C., “Order Rescission and Removal of License Conditions” – pg. 103</p> <p>VI., “ Paragraph 50.155(i), “Rescission of orders and removal of license conditions” – pg. 135</p>	<p>There are no known problems with this condition. The rule is intended to add the requirements in the Orders to the regulation without changing the requirements.</p> <p>Rescission of the Order EA-06-137 is set at the effective date of the rule along with the removal of the Mitigation Strategies License Condition and the license condition associated with EA-06-137. This matches up with the paragraph (h)(1) requirement for continued compliance with paragraph (b)(3) to avoid a regulatory gap.</p> <p>Rescission of the Orders EA-12-049 and -051 is set at 3 years after the effective date of the rule to bound the implementation timing for BWRs that received EA-13-109 and have 3 years to achieve compliance with the rule.</p> <p>The importance of this is that a licensee requesting a flexible schedule under paragraph (h)(2) would need to address the issue of avoiding regulatory gaps as part of the good cause justifying the flexible schedule.</p>	<p>None</p>
<p>None</p>	<p>None</p>	<p>None</p>	<p>Nothing generic.</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>App E, IV.F.2.j “The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a.”</p>	<p>Appendix E to Part 50—Emergency Planning and Preparedness for Production and Utilization Facilities: IV.F.2.j. The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each 8-calendar-year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each 8-year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first 8-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under 10 CFR part 52, the first 8-year exercise cycle begins in the calendar year of the initial exercise required by section IV.F.2.a of this appendix.</p>	<p>None</p>
<p>App E, VI.3.c In the event of a failure of the NRC supplied onsite modem, a replacement unit will be furnished by the NRC for licensee installation.</p>	<p>VI.3.c. In the event of a failure of NRC-supplied equipment; a replacement will be furnished by the NRC for licensee installation.</p>	<p>None</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Removed reference to 50.54(hh)(2). This regulation was moved to 155(b)(3), and the associated drill requirement was moved to 10 CFR 50.155(e)</p>	<p>V.B.2 & V.B.3, "Rulemaking Scope" – pg. 55</p> <p>VI., "10 CFR Part 50, Appendix E, Section IV, Training" – pg. 137</p>	<p>Required minimum performance for this was reduced from an element of the evaluated exercise program to a drill.</p>	<p>Use the NEI 13-06 Compliance Matrix</p>
<p>Generalized "modem" to "equipment". This change has no effect on licensees.</p>	<p>V.C., "Technology-Neutral Emergency Response Data System" – pg. 107</p> <p>VI., "10 CFR Part 50, Appendix E, Section VI, Emergency Response Data Systems" – pg. 137</p>	<p>None</p>	<p>None</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
<p>10 CFR 50.34(i) “(i) A description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter.”</p> <p>10 CFR 52.80(d) “A description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter.”</p>	<p>10 CFR 50.34(i) “(i) <i>Mitigation of beyond-design-basis events</i>. Each applicant for a power reactor operating license under this part must include the applicant’s plans for implementing the requirements of § 50.155, including a schedule for achieving full compliance with these requirements. The application must also include a description of:</p> <ul style="list-style-type: none"> (1) The integrated response capability required by § 50.155(b); and (2) The equipment upon which the strategies and guidelines required by § 50.155(b)(1) rely, including the planned locations of the equipment and how the equipment meets the requirements of § 50.155(c). <p>§ 52.80 Contents of applications; additional technical information.</p> <p>(d) The applicant’s plans for implementing the requirements of § 50.155 of this chapter including a schedule for achieving full compliance with these requirements, and a description of: (1) The integrated response capability required by § 50.155(b) of this chapter; and (2) The equipment upon which the strategies and guidelines required by § 50.155(b)(1) of this chapter rely, including the planned locations of the equipment and how the equipment meets the requirements of § 50.155(c) of this chapter.</p>	<p>None</p>
Other rulemaking documents: Statements of Consideration / Reg Analysis		
<p>None</p>	<p><u>None</u></p>	<p>NEI 13-06, R1, Sec 2.3.1, “Industry Performance Standard for Multi-Unit Dose Assessment”</p>

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>Replaced reference to EDMGs with one to the new rule on mitigating strategies, which includes the EDMG requirement in 50.155.(b)(3)</p>	<p>VI., “ § 50.34 Contents of Applications; Additional Technical Information” – pg. 109</p> <p>VI., “ § 52.80 Contents of Applications; Additional Technical Information” – pg. 137</p>	<p>None</p>	<p>None</p>
<p>Other rulemaking documents: Statements of Consideration / Reg Analysis</p>			
<p>The rule does not include a requirement for multi-release point dose assessment capability, although inclusion of requirements in this area was considered during the rule making process.</p>	<p>IV.E. “Multiple Source Term Dose Assessment”, p 28</p> <p>V.B., “Rule-making Scope,” -pg. 56</p>	<p>The decision to not include Multiple Release Point Dose Assessments was made in some part based upon completion of the regulatory commitments for all operating power reactor licensees.</p>	<p>Ensure that the site-specific commitment to perform multiple –release point dose assessments is maintained.</p> <p>Develop standardized language for a commitment to multiple release point dose assessment</p> <p>Use NEI 13-06 Compliance Matrix</p>

Previous NRC Requirement	10CFR50.155 Requirements	Associated Current Industry Guidance
None	<u>None</u>	NEI 14-01, R1, secs 1, "Introduction", and 3, "Requirements For SAMGs And Supporting Guidelines"

Delta between 50.155 and previous requirements / current guidance	SOC (ML16292A026) Reference	Impact/ Interpretation	Action
<p>The rule does not include SAMG requirements.</p> <p>However, in November 2015 the NEI Nuclear Strategic Issues Advisory Committee (NSIAC) approved an Industry Initiative on SAMGs that requires each licensee to docket site-specific commitments concerning the updating these guidelines, and their consideration within plant configuration management processes, integration with other emergency response guideline sets and symptom-based EOPs, and validation.</p> <p>Every utility with a part 50 license sent a letter to the NRC in late 2015 documenting their commitment to the Initiative.</p> <p>Note that the Commission’s Order related to North Anna 3’s COL (CLI-17-08) contains relevant information pertaining to their views on SAMG implementation for Part 52 licensees.</p>	<p>V.B., “Rule-making Scope”, p - 56</p> <p>V.C., “Command and Control” – p 87</p>	<p>Reg Analysis, section 2.3 states: “The Commission concluded that the imposition of SAMG requirements was not warranted because it did not meet the substantial additional protection criteria under 10 CFR 50.109(a)(3). Consequently, this regulatory analysis does not further evaluate SAMGs as proposed requirements in the final MBDBE Rule. Instead, SAMGs will continue to be implemented and maintained through a voluntary industry initiative as discussed in SRM-SECY-0065 and in Option 1.”</p> <p>Note that SRM-SECY-15-065 included direction that SAMG oversight be included in the ROP: “The staff should update the Reactor Oversight Process to explicitly provide periodic oversight of industry’s implementation of the SAMGs. NRC guidance should clarify how deviations or performance deficiencies would be addressed.”</p>	<p>Ensure that the NSIAC Initiative on SAMGs is maintained.</p> <p>Use NEI 14-01 Gap Analysis Matrix</p>

7 NEI 12-06 REVISION COMPARISON

Introduction

NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, has evolved over time from its initial issuance as the industry guidance document to implement the requirements of Order EA-12-049 to the current revision as the industry guidance document for implementation of 10 CFR 50.155. Individual licensee stations implemented and achieved compliance with Order EA-12-049 at different points in time and were not always consistent in site specific adoption of endorsed white papers or FAQs. The NEI 12-06 Revision Comparison provides section-by-section identification of changes in NEI 12-06 to support the user's effective and efficient identification of gaps for their resolution during implementation of 10 CFR 50.155. The information captured in the Impact/Interpretation and Action columns is based upon an assumption that NEI 12-06 Revision 4 will be used for implementation of 10 CFR 50.155.

The NEI 12-06 Revision Comparison Matrix identifies changes in each section of the following endorsed revisions;

- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 0, August 2012
- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 2, December 2015
- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 4, December 2016

Changes in other versions of NEI 12-06 including the not-endorsed Revision 1 and Revision 3 are not specifically captured in the matrices. As such, the changes from Revision 1 are contained in the R-2 Change column unless the Revision 1 change was further altered or removed by the Revision 2 change. Similarly, the Revision 3 changes are contained in the R-4 change column. NEI 12-06 Sections with no changes from Revision 0 through Revision 4 are not listed in the Matrix. NEI 12-06 changes to format or spelling such as changing "n" to "N" or renumbering of footnotes are not shown.

The FLEX Strategy Validation Revision Comparison is provided in a separate matrix to accommodate the initial guidance being a white paper in lieu of being included in NEI 12-06, Revision 0. This supplemental Matrix provides a table showing the significant changes made in the published versions of;

- NEI FLEX Validation Process White Paper, Attachment to APC 14-17, July 18, 2014
- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 2, December 2015, Appendix E
- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 4, December 2016, Appendix E

An explanation of the information provided in each column of the matrix follows:

- Section – Provides the NEI 12-06 Section number and title.
- R-2 Change – Provides changes in text of NEI 12-06 between revision 0 and revision 2. Intermediary changes from NEI 12-06 revision 1 are not included.
- R-4 Change – Provides changes in text of NEI 12-06 between revision 2 and revision 4. Intermediary changes from NEI 12-06 revision 3 are not included.

- Impact/Interpretation – Provides additional thoughts on the impact or interpretation of the change in the guidance. Also provides potential areas where a reduction in the as-implemented FLEX Program could be available depending on individual station implementation.
- Action – Captures likely actions for resolution in the transition from initial Order implementation to achieve MBDBE Rule compliance (at NEI 12-06 Revision 4).

Notations are included in individual change cells to provide cross-reference to FLEX FAQs that have been incorporated or are related to the topic of the guidance section.

Notations are also included in individual change cells to provide a cross-reference to clarifications provided within the endorsement documents;

- JLD-ISG-2012-01, Revision 0, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, August 29, 2012, ML12229A174 {Endorsement of NEI 12-06 Revision 0}
- JLD-ISG-2012-01, Revision 1, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, January 22, 2016, ML15357A163 {Endorsement of NEI 12-06, Revision 2 with clarifications}
- 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, February 2017, ML17005A188 {Endorsement of NEI 12-06, Revision 4 with clarifications}

NEI FLEX FAQ Disposition Table provides a cross-reference to NEI 12-06 Section where the information was incorporated. This table is provided as an aide to the user of the NEI 12-06 Revision Comparison Matrix. FAQ references that were incorporated into NEI 12-06 sections are included in individual Matrix cells and related FAQ references are also provided. These Incorporated FAQs and/or Related FAQs can be referenced to provide additional insights on the topic and its resolution.

Note that in all cases, it is the responsibility of every licensee to examine its licensing bases and determine what additional actions may be necessary to achieve full compliance with 10 CFR 50.155 including determination of the revision level of the implementing guidance.

Summary of Major Gap Assessments/Recommended Actions

The major gaps/recommended actions in the NEI 12-06 Revision Comparison Matrix include;

- Validation Requirements including providing a basis for time sensitive actions performed more than 24 hours after the initiation of the event. (Section 3.2.1.7 and Appendix E)
- Incorporation by reference of several supplemental guidance documents. (Section 3.2.1.13)
- Clarification on minimum quantities of hoses and cables to be maintained allowing for potential reduction in equipment. (Section 3.2.2)
- Clarification on minimum Spent Fuel Pool Cooling Strategy spray requirements allowing for potential reduction in equipment. (Table 3-1, 3-2 and Appendix C, D)
- Clarifications on alternate locations for instrument readings. (Section 5.3.3)
- Clarifications to support using existing station processes to manage maintenance and testing. (Section 11.5.2)
- Clarifications to support managing out of service time including separating functional from protected

and using station corrective actions and work control processes. (Section 11.5.3)

- Clarification on Configuration Control to support long term sustainability of FLEX Program including FLEX Strategy change management. (Section 11.8)
- Removal of recommendation to maintain Final Integrated Plan (FIP) as a living document. (Section 13.2)
- Addition of the reevaluated flooding hazard and seismic hazard for determining the adequacy of the FLEX Strategies. (Appendix G and Appendix H)

USER NOTES

Due to the large size of this matrix, it has been formatted to extend across two adjacent facing pages.

Matrix provides description of changes in the progression of the revisions of NEI 12-06.

The User enters in the left side column for each row that corresponds to their currently implemented FLEX Mitigating Strategies NEI revision level as well as adoption of endorsed white papers and FAQs. Then, using the information on the changes in each revision of NEI 12-06 and moving to the right, the user identifies the impact to their FLEX Mitigating Strategies and actions needed to close the gap in support of 10 CFR 50.155 implementation aligned with NEI 12-06 Revision 4. The gaps, impact and actions can be used to assist with the decision of whether to adopt a newer revision, or to develop a justification for use of an older revision.

For example if a station's FLEX Mitigating Strategies were implemented using NEI 12-06 Revision 0, the aggregate of the changes in columns R-2 Change and R-4 Changes have the potential to impact the FLEX Mitigating Strategies in achieving compliance with NEI 12-06, Revision 4 and the MBDBE. Potential impacts could be only administrative for the change in revision of the NEI 12-06 with no change in requirements, or no change in the net requirements between Revision 0 and Revision 4. Additionally, the potential impact could be none if the clarifications incorporated into NEI 12-06 are consistent or not more restrictive as adopted in site-specific FLEX implementation.

Also see Section 3.0, General Matrix Usage, for general usage information.

DRAFT

NEI 12-06		
Section	R-2 Change	R-4 Change
Cover Page	Revision 0, Date August 2012 to Revision 2 December 2015	Revision 4, December 2016
Revision Table	No Change	<p>Added Revision Table Lists Description of Major Changes from Rev 2 to Rev 4 and footnote that Rev 4 superseded Rev 3.</p> <p>Section 11.5 Section 11.6 Section 13.2 Tables C-3 & D-3 Appendix H – Section H.4.3 Appendix H – Section H.4.5</p>
Table of Contents	<p>Updated to align with titles and numbering within body of document.</p> <p>Added Executive Summary, changed Section 13 from submittal guidance to documentation and deleted status reports from this section. Utilized Appendix E placeholder for validation guidance, Added Appendices G and H for flooding and seismic MSAs. Minor format changes.</p>	<p>Updated to align with titles and numbering within body of document.</p> <p>Updated to align with titles and numbering within body of document.</p> <p>Added Revision Summary and deleted Executive Summary.</p> <p>Added numbering to already existing paragraphs in numerous locations.</p>
1: Introduction	<p>Clarified that while guidance addresses event caused by BDBEE, the strategies may be applied as directed regardless of cause.</p> <p>Incorporated the answer to <i>FAQ 2014-01</i> into Section 1 and Section 11.4.1.</p>	No Change
1.1: Background	<p>Changed containment integrity to just containment. Replaced “portable equipment” with “plant and FLEX equipment”, and clarified that FLEX equipment may be stored near the plant site. Removed the phrase that FLEX equipment would be “staged”</p>	No Change

Impact/Interpretation	Action
FLEX Program and supporting document impact	Update FLEX governing documents if changing NEI 12-06 Revision level for FLEX mitigating strategies compliance.
Editorial	None
Editorial	None
Clarification (Additional detail provided in Section 11.4)	None
Clarification	None

Section	R-2 Change	R-4 Change
1.2: Purpose	Added that R2 also addresses approaches for addressing reevaluated flood and seismic hazard information and aligns with Mitigating Beyond-Design-Basis Events rulemaking.	No Change
1.3: FLEX Objectives and Guiding Principles	<p>Replaced “installed plant equipment” with just “plant equipment”. Combined on-site portable equipment and pre-staged off-site resources as “FLEX equipment”.</p> <p>Replaced “Transition from installed plant equipment to on-site FLEX equipment.” With “Augment or transition from plant equipment to on-site FLEX equipment and consumables to maintain or restore key functions. “ for phase 2 approach</p> <p>Identified that FLEX coordination with SAMGs is addressed in NEI 14-01.</p>	Clarifying wording changes in first paragraph to address an ELAP concurrent with a LUHS.
1.4: Relationship to Other Tier 1 Requirements	<p>BWR MK I and II “may utilize vent capability order EA-13-109 for anticipatory venting to meet the requirements of mitigating strategies rather than requiring reliable hardened vents under EA-12-050.</p> <p>Added a paragraph addressing reevaluated flood and seismic hazard information point to new Appendix G and H for mitigating strategies assessment</p>	Last sentence changed from “...will be included as Appendix H...” to “ is included in Appendix H...”
1.5: Applicability	<p>Subsection number & title added.</p> <p>Deleted reference to tables in EA-12-049 along with Tables 1-1 and 1-2 which were copies of attachments 2 and 3 of order.</p>	No Change

Impact/Interpretation	Action
Clarification	None MSA related changes are addressed in Appendices G and H.
Clarification & Editorial	None See NEI 14-01 Compliance Matrix for details.
Clarification	None
Editorial	None

Section	R-2 Change	R-4 Change
2: Overview of Implementation Process	<p>Remove containment as being more challenging from at power conditions</p> <p>Relocated discussion that FLEX strategies are not explicitly designed for outage conditions due to small fraction of cycle in outage is relocated to new section 3.2.3.</p> <p>Deleted/relocated bullets referring to primary and alternate connection point providing higher reliability, and requiring makeup flow rates and sizing of connections to support outage conditions</p> <p>Deleted paragraph stated that 50.54(hh)(2) equipment may be used for FLEX but must still meet NEI 06-12.</p> <p>Deleted statement that NEI 12-06 will be changed to address specific application of FLEX to other reactor designs.</p>	No Change
2.1: Establishing Baseline Coping Capability	<p>Provided clarification by combining various equipment categories into plant equipment and FLEX equipment.</p> <p>Deleted third bullet referring to enhancement of capabilities deployed under 50.54(hh)(2)</p>	No Change
2.2: Determine Applicable Extreme External Hazards	<p>Added that aggregate of FLEX considerations is discussed in Section 10</p> <p>The guidance from the endorsed white paper and the subsequent FAQ 2013-10 was incorporated into a new Section 3.2.3 and the previous guidance in Section 2 was deleted.</p>	No Change
2.3, Define Site-Specific FLEX Strategies	<p>Minor clarification of storage requirement applicability to on-site FLEX equipment.</p> <p>Deleted “The process for defining the full extent of the FLEX coping capability is described in Section 10.</p>	No Change

Impact/Interpretation	Action
Clarification & Editorial	None
Clarifications	None
Editorial	None
Clarification & Editorial	None

Section	R-2 Change	R-4 Change
2.4: Programmatic Controls	Clarified that storage requirements apply to on-site Flex Equipment	No Change
2.5: Synchronization with Off-Site Resources	Change “off-site equipment” to “offsite FLEX equipment”.	No Change
3, Step 1: Establish Baseline Coping Capability	Changes consistent with terminology “plant equipment” and “FLEX equipment”. Deleted installed, portable, on-site and off-site as descriptions of equipment used in FLEX strategies.	No Change
3.1: Purpose	Replaced reference to 50.54(hh)(2) with more general term of “loss of large areas (LOLA) of the plant”	No Change
3.2: Performance Attributes	Changed “installed equipment” to “plant equipment”.	No Change
3.2.1.1: General Criteria	Deleted example of MAAP analysis for BWR.	No Change
3.2.1.2: Initial Plant Conditions	Added that the minimum conditions for plant equipment operability or functionality does not need to be assumed provided adequate basis for assumed value. Provided CST level example. FAQ 2012-08	No Change
3.2.1.3: Initial Conditions	Clarified that installed AC sources means design basis installed sources. Also added that AC power from batteries via inverters remains available. Added footnote, reference to 10 CFR 50.2.	Footnote renumbered with no change in wording NOTE: JLD-ISG-2012-01 R 2 Section 1.2 provides clarification for ELAP vs. loss of all AC power.
	Replaced seismic events, floods, high winds and missiles with “applicable hazard”. Added footnote, equipment only needs to be robust for the hazards for which it is relied on for mitigation in 3.2.1.3.3.	Footnote renumbered with no change in wording

Impact/Interpretation	Action
Clarification	None
Clarification	None
Clarification	None
Editorial	None
Clarification	None
Editorial	None
<p>Clarification</p> <p>If minimum values were used within plant's FLEX Strategy, it is likely to be conservative in lieu of administratively controlled values.</p> <p>Basis of assumed values to be documented.</p>	<p>Confirm basis for assumed values is captured in Program Documents.</p>
<p>Clarification to differentiate that FLEX installed generators which are not assumed to be lost as part of ELAP.</p> <p>ELAP is assumed as the initial condition for timing and sequence of initial response actions.</p> <p>Contingency procedures such as black start of RCIC and AFW and alternate instrument readings address the loss of all AC power.</p>	None
<p>Clarification that relaxed guidance in R 0 to make more reasonable for site specific application.</p>	None

Section	R-2 Change	R-4 Change
	<p>Clarified that loss motive force with no prospect for recovery applies to Service or circulating water pumps. Fire or other pumps may be [considered] available provided they are robust for the applicable hazard(s) in 3.2.1.3.4.</p> <p>FAQ 2012-07 and FAQ 2013-04</p>	<p>No Change</p>
	<p>Fuel supplies, plant equipment and fire ring header as a water source remains available if stored in structures robust for applicable hazards in 3.1.2.3.5.</p>	<p>No Change</p>
<p>3.2.1.3: Initial Conditions (Continued)</p>	<p>Replaced “permanent plant equipment” with “plant equipment”.</p> <p>Replaced seismic events, floods, high winds, and missiles with “applicable hazard (s)” in 3.2.1.3.6.</p> <p>Related FAQ-2012-018</p>	<p>No Change</p>
	<p>Replaced 50.54(hh)(2) equipment with loss of large area (LOLA) equipment and may be used as on-site FLEX equipment in 3.2.1.3.7.</p>	<p>No Change</p>
	<p>Clarified that the fire header may be considered available for any event for which it is robust. Previously this section was worded that the fire header could only be assumed to be available if it was robust for all events in 3.2.1.3.10.</p> <p>FAQ 2012-16</p>	<p>No Change</p>

Impact/Interpretation	Action
<p>Clarification to address accepted alternative approaches to guidance in NEI 12-06 R0. While these “Alternate Approaches” were accepted by the NRC and docketed as “Alternate Approaches” to NEI 12-06 Rev 0 guidance. They are no longer classified as “Alternate Approaches” to the guidance in later revisions of NEI 12-06 and are now recognized and endorsed as approved methods of the guidance. There is no technical change, however, since the FIPs and/or program document may still refer to these as “Alternate Approaches”, these may require revision.</p>	<p>Potential update to FIP and/or program document</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>
<p>Editorial</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>

Section	R-2 Change	R-4 Change
3.2.1.7: Event Response Actions	<p>Changed “installed plant equipment” to “plant equipment.”</p> <p>Added “Augment” to “to transition from plant equipment.”</p> <p>Added consumables to maintain or restore key functions.</p> <p>Changed “on-site FLEX equipment” to “FLEX equipment”</p>	<p>No Change</p> <p>Note: JLD-ISG-2012-01 R2 provides clarification on Validation.</p>
3.2.1.12: Qualification of Plant Equipment	<p>Changed “installed plant equipment” to “plant equipment” and changed “equipment” to “plant equipment.”</p>	<p>No Change</p>
3.2.1.13: FLEX Analysis, Methodologies and Generic Topics	<p>A new Section has been added providing a table of additional supplemental guidance documents (e.g., NRC endorsed position papers) containing methodologies that may be used for various topics.</p> <p>Note: Previously NEI 12-06 called for site specific analyses but did not address methods. In the course of implementation of the Order certain analytical criteria or methods were developed and endorsed.</p>	<p>No Change</p>
3.2.2: Minimum Baseline Capabilities	<p>Changed “installed plant equipment” to “plant equipment”.</p>	<p>No Change</p>
	<p>Added “Augment or “ to transition from plant equipment</p>	<p>No Change</p>
	<p>Added consumables to maintain or restore key functions</p>	<p>No Change</p>

Impact/Interpretation	Action
<p>Clarification adding details</p> <p>JLD-ISG-2012-01 R 2 points out that NEI 12-06 R 4 Section 3.2.1.7.6 requires “Strategies that have a time constraint to be successful should be identified and a basis provided that the time can reasonably be met.” The ISG discusses the use of Level A or B validation as a method to address the “reasonably met” criteria for those tasks expected to be performed >24 hours after the initiation of the event that have a time constraint. NEI 12-06 Appendix E step E.5.1.2 states in part “tasks performed greater than 24 hours after the event will not be time validated.”</p> <p>(Additional information on Validation provided in Appendix E)</p>	<p>The Validation guidance used may not have required validation of actions performed >24 hours after the event. Based on current guidance, review FIP timeline to verify time sensitive actions required >24 hours after the event were validated or a basis provided that the time can be reasonably met. Validation or some other basis may need to be provided for those that were not time validated using a Level A or B validation process.</p>
<p>Clarification</p>	<p>None</p>
<p>This change formally incorporates all the industry white papers and technical papers into the NEI 12-06 guidance. Many licensee strategies adopted the white papers and docketed this information, the current FIPs and/or program document may refer to these as “white papers” and not formal guidance of NEI 12-06. There is no technical change in the individual white paper content, however, since the FIPs and/or program document may still refer to these positions as “white papers,” these may require revision.</p>	<p>Potential update to FIP and/or program document</p> <p>Implementation of change control will vary dependent upon which revision of NEI 12-06 is being adopted. If NEI 12-06 R2 or R4 is adopted that incorporates the “white paper” the content of the white paper is no longer an ‘alternate approach’ that requires additional evaluation of applicability to facility.</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>

Section	R-2 Change	R-4 Change
3.2.2: Minimum Baseline Capabilities (Continued)	Changed “equipment” to “plant equipment” in 3.2.2.13 & 3.2.2.15.	No Change
	<p>Changed “equipment” to “plant or FLEX equipment,” changed “portable pump” to “pump,” and changed “portable lighting” to “lighting” In 3.2.2.3, 3.2.2.5, 3.2.2.6, 3.2.2.8, 3.2.2.12 & 3.2.2.13.</p> <p>Added provision that a heat transfer analysis is not required when crediting an alternate makeup water (raw water) source provided there is guidance to transition to a more preferable water source as soon as is practical in 3.2.2.5. FAQ 2013-11</p>	No Change
	Replaced “portable pumps” with “FLEX equipment” to provide makeup in 3.2.2.13, 3.2.2.15, 3.2.2.16 & 3.2.2.17 FAQ 2013-06	No Change
	Added paragraph saying the sizing of SFP makeup should be based on maximum design heat load. However, for the purposes of determining the response time for the SFP strategies when makeup is required, may use worst case heat load assuming plant is at power, i.e., fuel is in the reactor vessel in 3.2.2.14. FAQ 2013-05	No Change
	Changed “containment integrity” to “containment function”, changed “coping equipment” to “FLEX equipment” in 3.2.2.15.	No Change
	Moved the N+1 discussion that was after 3.2.2.15 into its own Section 3.2.2.16	No Change

Impact/Interpretation	Action
Clarification	None
<p>Clarification</p> <p>This section incorporates the NRC endorsed industry “Alternate Approaches” to R 0 guidance. While these “Alternate Approaches” were accepted by the NRC and docketed as “Alternate Approaches” to NEI 12-06 R0 guidance. They are no longer classified as “Alternate Approaches” to the guidance and are now recognized and endorsed as approved methods of the NEI 12-06 later revision guidance. There is no technical change, however, since the FIPs and/or program document may still refer to these as “Alternate Approaches”, these may require revision.</p> <p>Clarification, FAQ 2013-11 was incorporated to address use of raw water sources.</p>	<p>Potential update to FIP and/or program document</p> <p>Implementation of change control will vary dependent upon which revision of NEI 12-06 is being adopted. If NEI 12-06 R2 or R4 is adopted that incorporates the “white paper” the content of the white paper is no longer an ‘alternate approach’ that requires additional evaluation of applicability to facility.</p>
Clarification	None
Clarification	None
Clarification	None
Editorial	None

Section	R-2 Change	R-4 Change
3.2.2: Minimum Baseline Capabilities (Continued)	<p>Deleted three sets of hose and cable from N+1 discussion and included the requirements and methods, with examples, to meet "+1" for hoses and cables. Incorporated Generic Topic "Hoses and Cables" as listed in 3.2.1.16.</p>	No Change
	<p>Moved the primary and alternate discussion that was after 3.2.2.15 into its own in 3.2.2.17. Added an example of a primary and alternate connection point for electrical diversity from FAQ 2012-09</p>	No Change
	<p>Added clarification that if separate strategies are used, the two strategies do not each need a primary and alternate connection point provided the connection points for the two strategies are separate in 3.2.2.17</p>	No Change
3.2.3: Shutdown Modes	<p>New section for Shutdown Modes. In addition to referring to shutdown Safety Assessment, this section includes specific considerations and provisions. This new section is consistent with the Generic Topic "Shutdown/Refueling Modes" as listed in Section 3.2.1.13.</p> <p>FAQ-2013-10</p>	Inserted "and" at end of third bullet in list.

Impact/Interpretation	Action
Clarification Potential reduction in equipment requirements.	None
Editorial Clarification	None
Clarification	None
Clarification Incorporation of Industry white paper into NEI 12-06 may impact FIP/program document references.	Potential update to FIP and/or program document

Section	R-2 Change	R-4 Change
<p>Table 3-1: BWR FLEX Baseline Capability Summary</p>	<p>Changed installed and portable equipment to plant and FLEX equipment consistent with other sections.</p> <p>Removed reference to Order EA-12-050 for containment heat removal.</p> <p>Removed "Spray via portable nozzles" from SFP cooling.</p> <p>NOTE: See JLD-ISG-2012-01 R1, Section 1.1.d) provides conditions for elimination of the SFP spray cooling capability as described in Tables C-3 and D-3.</p> <p>Replaced "Per EA-12-051" with "Wide-range spent fuel pool level instruments" for SFP parameters</p>	<p>No Change</p> <p>While this section of NEI 12-06 did not change in R 4, Tables C-3 and C-4 were revised to include the conditions for eliminating the SFP spray cooling capability contained in JLD-ISG-2012-01 R 1.</p>
<p>Table 3-2, PWR FLEX Baseline Capability Summary</p>	<p>Changed installed and portable equipment to plant and FLEX equipment consistent with other sections.</p> <p>Removed reference to Order EA-12-050 for containment heat removal.</p> <p>Removed "Spray via portable nozzles" from SFP cooling.</p> <p>NOTE: See JLD-ISG-2012-01 R1, Section 1.1.d) provides conditions for elimination of the SFP spray cooling capability as described in Tables C-3 and D-3.</p> <p>Replaced "Per EA-12-051" with "Wide-range spent fuel pool level instruments" for SFP parameters</p>	<p>No Change</p> <p>While this section of NEI 12-06 did not change in R4, Tables C-3 and C-4 were revised to include the conditions for eliminating the SFP spray cooling capability contained in JLD-ISG-2012-01 R1.</p>

Impact/Interpretation	Action
<p>Clarifications</p> <p>Potential reduction in equipment requirements in the SFP cooling strategy if conditions from JLD-ISG-2012-01 R1 or NEI 12-06 R4 are met.</p>	<p>None</p>
<p>Clarifications</p> <p>Potential reduction in equipment requirements in the SFP cooling strategy if conditions from JLD-ISG-2012-01 R1 or NEI 12-06 R4 are met.</p>	<p>None</p>

Section	R-2 Change	R-4 Change
3.3: Considerations in Utilizing Off-site Resources	<p>Changed “equipment” to “FLEX equipment” and “off-site FLEX equipment”</p> <p>Added that FLEX strategies and/or resources do not need to be explicitly planned for period beyond 72 hrs. FAQ 2013-12</p> <p>Deleted reference to Section 12 for a list of possible off-site [FLEX] equipment.</p>	No Change
5.3.1: Protection of FLEX Equipment	<p>Clarified that protection is such that no one event causes failure of FLEX capability (N)</p> <p>Changed “portable FLEX equipment” to “FLEX equipment”.</p>	No Change
5.3.1.2: Protection of FLEX Equipment	Deleted “portable” for FLEX equipment	No Change
5.3.3: Procedural Interfaces	<p>Rearranged some information and added guidance that location of reading should not rely on functioning of intervening electrical equipment e.g., converters, or relays. Added guidance that the reading should be obtained at the closest accessible termination point to the containment penetration or parameter of measurement, as practical.</p> <p>FFAQ 2014-01 (FAQ system was changed and FLEX FAQs became FFAQs so there is a FAQ 2014-01 and a FFAQ 2014-01)</p>	No Change
6.1: Relationship to Loss of AC Power and Loss of UHS	Revised to “impact on safe shutdown equipment.”	No Change

Impact/Interpretation	Action
Clarifications	None
Clarifications	None
Clarification	None
Clarification on alternate location for taking readings for instruments	Review strategy to ensure that location of reading should not rely on functioning of intervening electrical equipment e.g., converters, or relays and that the reading should be obtained at the closest accessible termination point to the containment penetration or parameter of measurement, as practical.
Clarification	None

Section	R-2 Change	R-4 Change
6.2.2: Characterization of the Applicable Flood Hazard	<p>Added expectation that if warning time is credited, an evaluation of the adequacy include warning time triggers and implementation of actions/strategies.</p> <p>Related FAQ-2012-13</p>	No Change
6.2.3.1: Protection of FLEX Equipment	<p>Clarified that protection is such that no one event causes failure of FLEX capability (N)</p> <p>Changed “most recent site flood analysis” to “most recent design basis site flood analysis.”</p>	No Change
6.2.3.2: Deployment of FLEX Equipment	<p>Changed portable pump, portable equipment and portable pumps and power supplies to FLEX pump and FLEX equipment consistent with other sections.</p>	No Change
7.1: Relationship to Loss of AC Power & Loss of UHS	<p>Revised to “impact on safe shutdown equipment.”</p>	No Change
7.2.2: Characterization of the Applicable High Wind Hazard	<p>Changed “pre-staging of equipment” to “pre-staging of FLEX equipment.”</p>	No Change

Impact/Interpretation	Action
New requirement. If warning time is credited, the evaluation of the adequacy of warning time includes review of the flooding event and warning time triggers needed to implement any flood protection or mitigating strategies.	Review use of warning times in timelines to ensure topic is incorporated in FIP/Program Documents.
Clarification	None

Section	R-2 Change	R-4 Change
	<p>Recognizes that use of a combination of configurations may be used to protect FLEX equipment. Clarified that protection is such that no one event causes failure of FLEX capability (N).</p>	<p>No Change</p>
	<p>Changed “structure” to “structure or structures” to recognize that multiple structures may be utilized to protect FLEX equipment.</p>	<p>No Change</p>
<p>7.3.1: Protection of FLEX Equipment</p>	<p>Added when using load combination in ASCE 7-10, should use wind speeds from RG 1.76 R1 in combinations required consistent with the Standard Review Plan and other safety-related applications (i.e., wind speed by factor of 1.0). FAQ 2012-12 Related FAQ 2012-14</p>	<p>No Change</p>
	<p>Added clarification that the axis of separation applies to the structure locations</p>	<p>No Change</p>
	<p>Added that tornado widths from NOAA 1950-2011 should be considered as the minimum separation distance for which further analysis is not required to justify. Related FAQ 2013-01</p>	<p>No Change</p>
	<p>Added clarification that separation is not an acceptable reasonable protection method for hurricanes unless the separated structures are built to withstand hurricane winds in which case the separation may be credited for tornado events. FAQ 2013-02</p>	<p>No Change</p>

Impact/Interpretation	Action
<p>Clarification to address accepted alternate approaches to guidance in NEI 12-06 R 0. While these “Alternate Approaches” were accepted by the NRC and docketed as “Alternate Approaches” to NEI 12-06 R 0 guidance. They are no longer classified as “Alternate Approaches” to the guidance in NEI 12-06 R2 & R4 and are now recognized and endorsed as approved methods of the NEI 12-06 later revision guidance. There is no technical change, however, since the FIPs and/or program document may still refer to these as “Alternate Approaches”, these may require revision.</p>	<p>Potential update to FIP and/or program document</p> <p>Implementation of change control will vary dependent upon which revision of NEI 12-06 is being adopted. If NEI 12-06 R2 or R4 is adopted that incorporates the “white paper” the content of the white paper is no longer an ‘alternate approach’ that requires additional evaluation of applicability to facility.</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification incorporating FAQ</p> <p>Incorporation of FAQ into NEI 12-06 may impact FIP/program document references.</p>	<p>Potential update to FIP and/or program document</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>

Section	R-2 Change	R-4 Change
7.3.1: Protection of FLEX Equipment (continued)	Added note explaining that separation distance may be applied to non-robust plant equipment (e.g., to CSTs separated by distance that are not robust for tornado missiles).	No Change
	As it pertains to wind protection, added if (N) equipment is stored in a robust building, +1 equipment may be stored in a non-robust building.	No Change
	Added multiple examples in a new section containing various possible configurations for adequate wind protection. FAQ 2013-07	No Change
7.3.2: Deployment of FLEX Equipment	Changed “portable pumps” to “FLEX pumps” consistent with other sections.	No Change
8.3.1: Protection of FLEX Equipment	Change “portable equipment” to “FLEX equipment” consistent with other sections.	No Change
	Changed “stored in one of two configurations” to “one or more of the following configurations”	No Change
	Clarified that N+1 applies to a set of equipment.	
9.2: Approach to Extreme High Temperature Challenges	<p>Clarified that high temperature evaluations are for FLEX equipment (storage, deployment, & operation) and not plant equipment.</p> <p>Clarified that all sites will address impact of high temperatures by changing “sites should consider” to “all sites will address”</p> <p>Related FAQ 2012-15</p>	No Change

Impact/Interpretation	Action
Clarification	None
<p>Clarification that results in Section 9.3.2 providing additional information related to evaluation of high ambient site temperatures. While Sections 3.2.2.10 and 9.3.1 provides additional information related to the evaluation of high temperatures at the location of equipment.</p>	None

Section	R-2 Change	R-4 Change
Section 10.1: Aggregation of FLEX Strategies	<p>Clarified that evaluations per Sections 5-9 used to store FLEX equipment such that FLEX (N) capability is maintained. Added footnote to acknowledge that FLEX equipment storage locations may be outside the Owner Controlled Area provided the equipment can be relocated in time to meet FLEX strategy requirements.</p> <p>Consistent with Section 11.3.3 wording.</p>	No Change
11.1: Quality Attributes	<p>Made clarification that quality attributes are applicable to FLEX equipment.</p>	No Change
11.2: Equipment Design	<p>Changed “portable equipment” to “FLEX equipment” consistent with other sections</p> <p>Deleted “especially for spray strategies” as it pertains to head loss due to elevation changes.</p>	None

Impact/Interpretation	Action
Clarification	None
Clarification	None
Clarification	None

Section	R-2 Change	R-4 Change
11.3: Equipment Storage	<p>Changed “portable equipment” to “FLEX equipment” and “installed equipment” to “plant equipment” consistent with other sections.</p> <p>Added footnote that Manufacturer’s information may be used in establishing the basis for equipment use and does not require Appendix B qualification.</p> <p>Added clarification that the requirements for primary connection point, alternate connection point, N+1, and protection still apply if pre-staging or installing FLEX equipment.</p> <p>Changed “50.54(hh)(2) equipment” to “LOLA equipment”</p> <p>Related FAQ 2012-17</p>	No Change
11.4.1: Procedure Guidance Objectives	<p>Added footnote referring to NEI 14-01</p> <p>Deleted restriction of using of FSGs only for BDBEE conditions. Guidance is to use FSGs only as directed.</p> <p>FAQ 2014-01</p>	No Change
11.4.2: Operating Procedure Hierarchy	<p>Changed “permanently installed equipment” to “plant equipment” consistent with other sections.</p>	No Change
11.4.3: Development Guidance for FSGs	<p>Added Validation standard for FSGs found in Appendix E</p>	No Change

Impact/Interpretation	Action
<p>Clarification</p> <p>Pre-Staged equipment for risk reduction and equipment storage are not the same. Pre-staged equipment that is not protected from applicable hazards is subject to time limitations while not in protected storage location.</p> <p>Note: JLD-ISG-2012-01 R1, Section 3.4, Programmatic Controls for Unavailability or JLD-ISG-2012-01 R2, Section 3.4, Programmatic Controls for Functionality provides guidance on time limitations for nonfunctional or not reasonably protected.</p>	<p>None</p>
<p>Clarification</p>	<p>None</p> <p>See NEI 14-01 Compliance Matrix for details.</p>
<p>Clarification</p>	<p>None</p>
<p>New element of guidance previously contained in White Paper.</p> <p>New Appendix is addressed in separate matrix.</p>	<p>Perform Gap evaluation using guidance given below for Appendix E.</p>

Section	R-2 Change	R-4 Change
11.4.4, Regulatory Screening/Evaluation	<p>Changed to clarify that changes made for FLEX should also be screened for applicability to other license basis document change processes in addition to the UFSAR.</p> <p>Changed “containment integrity” to “containment function” consistent with other sections.</p>	No Change
Figure 11-1	<p>Deleted “10.54(hh)(2)” from upper figure. Centered “EDMG” in lower figure.</p> <p>Deleted “B.5b Guidelines” and reference to 50.54(hh)(2) guides” in note below figure.</p>	No Change
11.5: Maintenance and Testing	No Change to Section Header	No Change to Section Header
11.5.1: Initial Testing	Changed “FLEX mitigation equipment” and “Portable equipment” to “FLEX equipment” consistent with other sections.	No Change
11.5.2: Preventive Maintenance (PM)	<p>Changed “Portable equipment” to “FLEX equipment”</p> <p>Clarified that “associated bases” is “site-specific” basis.</p>	No Change
New section in Rev 2: Credit for existing controls for maintenance and testing for plant equipment	<p>New section 11.5.3</p> <p>Maintenance and testing for plant equipment is conducted in accordance with existing plant processes.</p>	No Change
11.5.3: Managing FLEX equipment and connection availability	Renumbered to Section 11.5.4, expanded and relocated out of service provisions resulting in additional subsections as detailed below.	Changes the term “unavailability” to “functionality (i.e., the ability to perform its intended function)” and adds the term “protection”. Relocated out of service provisions resulting in a reduction of subsections as detailed below.

Impact/Interpretation	Action
Clarification	None
Clarification Additional information contained in separate NEI 14-01 Compliance Matrix	See NEI 14-01 Compliance Matrix for details
Editorial	None
Clarification	None.
Clarification	Validate FIP/Program documents align with EPRI templates or provide a site specific basis.
Clarification Plant equipment performing a FLEX function may be tested using the existing PMs established for that equipment without imposing additional maintenance and testing requirements for the FLEX function. This is a reasonable approach because the existing plant PMs are based on failure modes that are based on the normal (design basis) usage of plant equipment and are expected to bound the failure modes that the FLEX PMs are intended to discover.	Confirm Program Documents /PM Process acknowledges testing of plant equipment also fulfills the FLEX maintenance and testing requirements.
Clarification Differentiates FLEX equipment and connection functionality and protection so that different allowed outage times can be established for loss of function and protection	None. Actions will be addressed in subsequent sections of Section 11.5.

Section	R-2 Change	R-4 Change
<p>11.5.3.a(R0), 11.5.4.a(R2, R4): Control of FLEX equipment using other plant processes (e.g., Technical</p>	<p>Changed the term “installed plant equipment” to “plant equipment”.</p>	<p>Changed the term “unavailability” to “functionality”</p>
<p>11.5.3.b(R0), 11.5.4.b(R2,R4): FLEX equipment allowed outage time with capability (N) maintained (90 days)</p>	<p>Changed “portable equipment” to “FLEX equipment.”</p> <p>Added “If the site FLEX (N) capability is met but not protected for all of the site’s applicable hazards, then the allowed [outage time] is reduced to 45 days.</p> <p>Added new footnote providing basis for 45/90 day allowed outage time</p>	<p>Moved and expanded the allowed outage time for FLEX equipment that is not protected to Section 11.5.4.e and 11.5.4.f</p>
<p>11.5.3.c(R0), 11.5.4.c(R2,R4): FLEX connection point allowed outage time with capability maintained</p>	<p>Added one connection point can be unavailable provided the remaining connection point remains available</p>	<p>Changed the term “available” to “functional” consistent with other sections</p>
<p>11.5.3.d(R0), 11.5.4.d(R2, R4): Compensatory actions for exceeding 90 day allowed outage time or prior to forecast of an external event</p>	<p>Expanded and portion relocated to 11.5.4.g (R2) FAQ 2012-05</p> <p>Changed “portable equipment” to “FLEX equipment” consistent with other sections.</p> <p>Includes connection points.</p> <p>Applies to 90 day availability and 45 day protection allowed outage times.</p> <p>Establish compensatory actions prior to exceeding the allowed outage time</p>	<p>No compensatory action statements for non-functional equipment exceeding 90 days or prior to forecast of an external event provided (N) capability is maintained.</p> <p>Outage times from 11.5.4.g (R2) adjusted and relocated to 11.5.4.d (R4) and 11.5.4.f(R4) eliminating 11.5.4.g (R2).</p>

Impact/Interpretation	Action
<p>Clarification Changes in terms are consistent with other sections and approaches. However, the concept of controlling plant equipment supporting a FLEX function per the plant process such as Technical Specifications remains unchanged.</p>	<p>None</p>
<p>The allowed outage time for FLEX equipment that is non-functional but in which FLEX (N) capability is maintained has not been changed.</p> <p>The allowed outage time for FLEX equipment that is not protected has changed from a blanket 45 days in Rev 2. See Rev 4 Section 11.5 (4.e) and (4.f) for a discussion of those changes.</p>	<p>None</p> <p>Changes to the 45 day allowed outage time for FLEX equipment that is not protected will be discussed in Rev 4 Section 11.5.4.e and 11.5.4.f</p>
<p>Clarification Rev 0 implies that both the primary and alternate connection points can be out of service for up to 90 days provided some means of FLEX capability is maintained. Rev 2 and 4 clarify that at least one connection point must remain functional to apply 90 day allowed outage time.</p>	<p>Verify that the site FLEX program document programmatic controls align with the NEI 12-06 guidance.</p>
<p>Clarification Separate allowed outage times for non-functional and unprotected FLEX equipment.</p> <p>Rev 4 eliminates provision for use of compensatory actions for non-functional FLEX equipment that exceeds 90 days that was added in Rev 2. Added initiation of actions (e.g., entering the condition into a corrective action or work management program).</p> <p>Rev 4 eliminates need for compensatory actions in advance of forecast external events provided (N) capability is maintained.</p>	<p>Verify that the site FLEX program document programmatic controls align with the NEI 12-06 guidance.</p>

Section	R-2 Change	R-4 Change
<p>11.5.3.e(R0), 11.5.4.e(R2,R4): Unavailability of FLEX equipment does not result in loss of protection for FLEX equipment protected by separation</p>	<p>Changes “equipment” to “FLEX equipment” consistent with other sections.</p>	<p>Changed to Section 11.5.4.b.i Changes the term “available” to “functional” consistent with other sections.</p>
<p>11.5.3.f(R0), 11.5.4.f(R2,R4): FLEX equipment allowed outage time and actions with capability (N) not maintained (24,72 hours)</p>	<p>Changed “portable equipment” to “FLEX equipment” consistent with other sections. Includes connection points.</p>	<p>Relocated to Section 11.5.4.d Changes the term “available” to “functional” consistent with other sections. Clarifies 24 hour action to enter condition in the corrective action program or work management program within 24 hours. Increases action time to implement compensatory actions from 72 hours to 7 days (except for forecast external events).</p>
<p>New guidance in Rev 4, Allowed time for unprotected FLEX equipment and compensatory actions. (14/90 days)</p>	<p>Guidance for unprotected FLEX equipment was not specifically addressed in R2. See 2 Section 11.5 4.g</p>	<p>R2 allows that if the site FLEX (N) capability is met but not protected for all of the site’s applicable hazards, then the allowed unavailability is reduced to 45 days. R4 allows that If the FLEX capability (N) is met but the equipment being relied on to meet the FLEX capability (N) is not all in its specified reasonable protection configuration for the N equipment, restore protection or implement compensatory actions to justify a temporary reasonable protection configuration within 14 days or in advance of a forecast external event. After that restore the specified reasonable protection configuration within 90 days. Contained in 11.5.4.e in R4</p>

Impact/Interpretation	Action
None	None
<p>Connection points specifically included in Rev 2 and 4.</p> <p>24 hour actions clarified in Rev 4.</p> <p>Relaxation of allowed outage time in Rev 4.</p>	<p>Verify that the site FLEX program document programmatic controls align with the NEI 12-06 guidance.</p>
<p>Rev 4 removes the 45 day allowed time that equipment may be unprotected from applicable hazards and adds a 14 day timeframe for compensatory actions for equipment not in its specified reasonable protection configuration and to restore specified reasonable protection configuration within 90 days.</p>	<p>Verify that the site FLEX program document programmatic controls align with the NEI 12-06 guidance.</p>

Section	R-2 Change	R-4 Change
<p>New guidance in Rev 4, Allowed time for unprotected FLEX equipment and compensatory actions. (45 days)</p>	<p>Guidance for unprotected FLEX equipment was not specifically addressed in R2.</p>	<p>Allowance for pre-deployment of equipment in unprotected configurations for up to 45 days if used to reduce risk of maintenance or outage activities. Contained in 11.5.4.f in R4.</p> <p>The provisions of Section 11.5.4.e do not apply to this condition.</p>
<p>11.6: Training</p>	<p>Rewritten, but retains “should use SAT process” approach. Makes reference to NEI 13-06 and 10 CFR 55.4.</p>	<p>Section 11.6.5, Removes details concerning the conduct of drills and refers to NEI 13-06.</p>
	<p>Deleted footnote about recommendation to use SAT process, now contained within Section 11.6.</p>	<p>No Change</p>
	<p>Modified footnote defining Emergency Response Leaders to include both site and corporate emergency response personnel.</p>	<p>No Change</p>
	<p>Added footnote to reference NEI 13- 06.</p>	<p>Replaced Section 11.6.5 with reference to NEI 13-06 that was previously in footnote and removed footnote.</p>

Impact/Interpretation	Action
<p>Rev 4 relaxes the need to establish compensatory actions for FLEX equipment in unprotected configurations as long as the conditions for this section are met.</p> <p>Section 11.5.4.f does not make Section 11.3.6 inapplicable. JLD-ISG-2012-01 R2, Section 3.4, Programmatic Controls for Functionality provides guidance on time limitations for nonfunctional or not reasonably protected including making Section 11.3.6 inapplicable.</p>	<p>Verify that the site FLEX program document programmatic controls align with the NEI 12-06 guidance.</p>
<p>Clarification</p> <p>There were always requirements for periodic training the relationship to NEI 13-06 is new. Additional information contained in separate NEI 13-06 Compliance Matrix.</p>	<p>See separate NEI 13-06 compliance matrix</p>
<p>Editorial</p>	<p>None</p>
<p>Clarification</p>	<p>None</p>
<p>See note above on NEI 13-06</p>	<p>See separate NEI 13-06 compliance matrix</p>

Section	R-2 Change	R-4 Change
11.8: Configuration Control	Section 11.8.3 Added clarification for making changes to FLEX strategies and when changes can be made without prior NRC approval.	No Change Note: JLD-ISG-2012-01 takes no position and defers to 10 CFR 50.155 wording
	Changed “containment integrity” to “containment function” consistent with other sections.	No Change
	Section 11.8.4 & 11.8.5 Added guidance for when a change requires NRC approval and documentation requirements for all changes.	No Change
12: Offsite Resources	Numbered & added titles to sub-sections	No Change
12.1: Synchronization with Off-site Resources	<p>Changed “installed plant equipment” to “plant equipment” consistent with other sections.</p> <p>Changed “transition from” to “augment with” regarding use of plant equipment and FLEX equipment used to maintain key functions.</p> <p>Deleted paragraphs referring to Tables 12-1 and 12-2 were sample lists of off-site FLEX equipment. Deleted Tables 12-1 and 12-2.</p>	No Change
12.2: Minimum Capabilities of Off-Site Resources	New section number but no change to text.	No Change
13: Documentation	<p>Changed title of section from “Submittal Guidance” to “Documentation”</p> <p>Deleted paragraphs under Section 13 that contained quotes from Order EA-12-049 submittal requirements.</p>	No Change

Impact/Interpretation	Action
Clarification Note: Section 11.8.3.a.iii refers to Order EA-12-049 which will be withdrawn with the provision of 10 CFR 50.155	None
Editorial	None
Provides additional guidance on when change requires NRC approval and how to document	Validate existing FLEX program document programmatic controls align with requirements.
Editorial	None
Editorial and Clarification	None
Editorial	None
Editorial	None

Section	R-2 Change	R-4 Change
13.1: Overall Integrated Plan	Added instructions that “new applicants” should submit how they will conform with guidance. The remainder of this section is materially the same with modifications made consistent with other sections.	No Change
13.2: Final Report	<p>Changed title of section from “Status Reports” to “Final Report”.</p> <p>Deleted the former Status Report section guidance.</p> <p>New Section added reference to Section 11.8 and provides guidance for current expectations for the Final Integrated Plan (FIP) and the maintenance as a living document. Requires a formal record of changes to be maintained for the FIP.</p> <p>Added footnote referencing NRC memorandum dated September 12, 2014 (ML14254A467)</p>	<p>Relocated sentence about making changes to the FLEX strategies in accordance with guidance in Section 11.8.</p> <p>Deleted guidance that the FIP will be maintained as a living document with a formal record of changes maintained for the FIP.</p>
13.3: Final Report	Rev. 0 section removed with changes to Section 13.2 listed above.	No Change
14: References	Added internet address to individual document references	No Change

Impact/Interpretation	Action
Clarifications	None
Clarification Alignment with Section 11.8 Removed requirement to maintain FIP.	None Potential reduction in Programmatic Requirement for maintenance of FIP document.
Editorial	None
Editorial	None

Section	R-2 Change	R-4 Change
Appendix A: Glossary of Terms	Added "Alternate Mitigating Strategies (AMS)"	No Change
	Added "Associated Effects"	No Change
	Modified "Baseline Coping Capability," changed installed and portable equipment to plant and FLEX equipment.	No Change
	No Change	Modified definition of beyond-design basis external events definition consistent with the change from Section 1.3 to clarify that the ELAP occurs concurrently with a LUHS.
	Added FIP	No Change
	Modified "FLEX Capability", changed installed, on site portable and pre-staged off site resources to plant and FLEX equipment	No Change
	Added "FLEX Equipment"	No Change
	FLEX equipment may be portable, pre-staged or installed.	
	Modified "FLEX Strategies", changed "function" to "capabilities".	No Change
	Added "Flooding Event Duration"	No Change
	Added "Flood Protection Feature"	No Change
	Modified "Loss of normal access to the ultimate heat sink", deleted [Order language].	No Change
	Added "Mitigating strategies assessment"	No Change
	Added " Mitigating Strategies Flood Hazard Information"	No Change
	Deleted "On-site FLEX Equipment"	No Change
	Added "OIP"	No Change
	Added "Program Document"	No Change
	Added "Reasonable protection"	Changed term in definition, "unavailability" to "non-functional"
Modified "Robust" to include "or meets the current NRC design guidance for applicable hazard (RG 1.76, R1)"	No Change	

Impact/Interpretation	Action
New definition for Appendix G & Appendix H	None
New definition for Appendix G	None
Clarification	None
Clarification	None
Editorial	None
Clarification	None
Clarification	None
Clarification	None
New definition for Appendix G	None
New definition for Appendix G	None
Clarification	None
New definition for Appendix G & Appendix H	None
New definition for Appendix G	None
Editorial	None
Editorial	None
Editorial	None
Editorial First sentence includes the term “available”, which should be considered equivalent to ‘functional’ as used in the remainder of the definition.	None
Clarification, addressed in Section 7.3.1	None

Section	R-2 Change	R-4 Change
Appendix A: Glossary of Terms (Continued)	Modified “Sustaining functions indefinitely”, changed “until recovery actions can be implemented” to “until recovery actions are implemented”. Deleted “[Order language].	No Change
	Added “Targeted Hazard Mitigating Strategies (THMS)	No Change
	Added “Warning time”	No Change
Table B-1	Changed “10 CFR 50.54(hh)(2)” to “LOLA”	No Change
Appendix C: Approach to BWR Functions	Changed “installed plant equipment” to “plant equipment” consistent with other sections	No Change
	Changed “portable battery chargers” to “FLEX battery chargers”.	No Change
	Changed “portable pump” to “FLEX pump”.	No Change
	Deleted “reliable, hardened” from baseline capability under containment function for other containment types (Mark III).	No Change
	Deleted “For Mark I and II containments, capability must credit required changes associated with Order EA-12-0050 at a minimum” from the performance attributes of containment venting under containment function.	No Change
Deleted SFP spray capability under SFP cooling. Eliminated need for FAQ-2013-09 NOTE: See JLD-ISG-2012-01 R1 that retains this capability with a condition for removal based on completion of a seismic evaluation of the SFP.	Added SFP spray capability back in with amplified guidance in the Performance Attributes section for plants that credit below grade undrainable volume and for need to perform a seismic SFP integrity evaluation before removing the spray flow capability from the FLEX strategy. This later change addresses the JLD-ISG-2012-01 R1 exception to this portion of the guidance.	

Impact/Interpretation	Action
Clarification, addressed in Section 3.3	None
New definition for Appendix G and Appendix H	None
New definition for Appendix G	None
Editorial	None
Clarification	None
Clarification	None
Clarification	None
Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-1 above	None
Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-1 above	None
<p>Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-1 above</p> <p>Potential reduction in equipment requirements in the SFP cooling strategy if conditions from JLD-ISG-2012-01 R1 or NEI 12-06 R4 are met.</p> <p>NOTE: The typical current BWR configuration does not meet the Performance Attribute exclusion criterion for a below-grade undrainable SFP.</p>	None

Section	R-2 Change	R-4 Change
Appendix C: Approach to BWR Functions (Continued)	<p>Deleted “per Order EA-12-051” and “in baseline capability and performance attributes under SFP Parameters.</p> <p>Added reference to Wide-range spent fuel pool level instrument in Performance Attributes.</p> <p>Removed “or direct use of spray” from Purpose.</p>	No Change
Appendix D: Approach to PWR Functions	Changed “installed plant equipment” to “plant equipment” consistent with other sections	No Change
	Changed “portable battery chargers” to “FLEX battery chargers.”	No Change
	Changed “portable pump” to “FLEX pump.”	No Change
	Deleted “including consideration of concurrent makeup or spray of SFP” from the performance attributes of sustained source of water under core cooling in Table D-1.	No Change
	RCS inventory control/long-term sub-criticality – Added performance attribute of diversity requirement if crediting re-powering a charging pump. FAQ-2013-06	No Change
Core Cooling in Modes 5 & 6 without SG – deleted performance attribute of diversity requirement if crediting re-powering a charging pump. FAQ-2013-06 Related FAQ-2012-19 and FAQ-2013-10	No Change	

Impact/Interpretation	Action
Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-1 above	None
Clarification	None
Clarification	None
Clarification	None
Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-2 above	None
Clarification	None
Clarification, covered by previous items. This change is consistent with previous items of clarification see Section 3.2.3 above	None

Section	R-2 Change	R-4 Change
<p>Appendix D: Approach to PWR Functions</p>	<p>Deleted SFP spray capability under SFP cooling. Eliminated need for FAQ-2013-09</p> <p>NOTE: See JLD-ISG-2012-01 R1 that retains this capability with a condition for removal based on completion of a seismic evaluation of the SFP.</p>	<p>Restored SFP spray capability requirement</p> <p>Added SFP spray capability back in with amplified guidance in the Performance Attributes section for plants that credit below grade undrainable volume as determined under B.5.b/10 CFR50.54(hh)(2); and for need to perform a seismic SFP integrity evaluation per EPRI3002007148 or other endorsed guidance before removing the spray flow capability from the FLEX strategy.</p>
	<p>SFP Parameters – deleted “or direct use of spray” from Purpose section. Deleted “per EA-12-051 and added “Wide-range spent fuel pool level instruments in the Performance Attributes section</p>	<p>No Change</p>
<p>Appendix E: Validation Guidance</p>	<p>Changed from “not used” to “Validation Guidance</p>	<p>No Change</p> <p>Note: JLD-ISG-2012-01 states Appendix E can be used to determine actions are feasible but is not sufficient to show reliability of actions.</p>
<p>Appendix F: Guidance for AP1000 Design</p>	<p>F.1 – Deleted reference to the NRC Order for AP1000 COL holders</p>	<p>No Change</p>
	<p>F.3 – Deleted reference to EA-012-049 and Table 1.2</p>	<p>No Change</p>
	<p>F.3.1 – Changed “ELAP conditions caused by design basis hazard events” to “ELAP conditions caused by beyond design basis hazards”.</p>	<p>No Change</p>

Impact/Interpretation	Action
<p>Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-2 above</p> <p>Potential reduction in equipment requirements in the SFP cooling strategy if conditions from JLD-ISG-2012-01 R1 or NEI 12-06 R4 are met.</p>	<p>None</p>
<p>Clarification, covered by previous items. This change is consistent with previous items of clarification see Section Table 3-2 above</p>	<p>None</p>
<p>A separate comparison evaluation has been performed to identify differences between validations performed per NEI 12-06 Rev 0 using the NEI validation guidance white paper and validations performed per NEI 12-06 R2 or R4 using Appendix E. A Validation GAP Review Table is provided below.</p>	<p>Perform Gap evaluation using guidance given below for Appendix E.</p>
<p>Editorial</p>	<p>None</p>
<p>Editorial</p>	<p>None</p>
<p>Requires FLEX be evaluated against new hazards</p>	<p>Incorporate the requirements of Appendix G and Appendix H.</p>

Section	R-2 Change	R-4 Change
Appendix G: Mitigation Strategies Assessment for New Flood Hazard Information	Changed "Guidance for U.S. EPR™ Design" to "Mitigation Strategies Assessment for New Flood Hazard Information." New Appendix for performing MSA for new flooding hazard information.	Changed "Mitigation" to "Mitigating" in Section G.4.4, first sentence.

Impact/Interpretation	Action
<p>New Guidance for performing Flooding Hazard evaluation</p> <p>The Mitigating Strategies Assessment (MSA) determines if the FLEX strategies can be implemented given the impact of the reevaluated flood hazard information. If it is determined the FLEX strategies cannot be implemented, the MSA considers other options such as plant modifications, modifications to strategies or different mitigation strategies. The MSA process provides multiple assessment Paths to accommodate site specific differences between their design basis flood hazard and their reevaluated flood hazard.</p> <p>Implementation of any FLEX Strategy changes or facility changes (physical or technical basis) indicated by the MSA would be governed by Section 11.8, Configuration Control.</p> <p>The MSA document itself is not required to be maintained. However, Section 11.8.1 requires the basis of the FLEX Strategies be maintained and Section 11.8.2 requires configuration control processes will be used to ensure changes to the facility will not adversely impact the FLEX Strategies. As such, ensuring the controlling performance criteria or margin for flood protection features that were established during the MSA are not reduced via replacement and/or plant modification will provide the on-going basis that the FLEX Strategies are not impacted by the reevaluated flood hazard.</p>	<p>Validate site's Flooding MSA has been performed as described in Appendix G.</p> <p>If the MSA concluded the FLEX Strategies can be implemented without change due to the impact of the reevaluated flood hazard information, a basis documentation update will be required.</p> <p>If the MSA concluded a change is needed, the change would be implemented with station procedures and as described in Section 11.8 including the determination if the change can be made without NRC approval.</p> <p>Implementation of these changes is required to achieve compliance with the implementation of 10 CFR 50.155.</p>

Section	R-2 Change	R-4 Change
<p>Appendix H, Mitigation Strategies Assessment for New Seismic Hazard Information</p>	<p>New Appendix for performing MSA for new Seismic Hazard information. Path 5 for plants performing an SPRA will be added to this Appendix later.</p> <p>Note - In accordance with JLD-ISG-2012-01, Section H.4.5 of Appendix H to NEI 12-06, R2, discusses a methodology to develop an AMS that is under development. This methodology has not yet been reviewed by the NRC and is not yet endorsed for use.</p>	<p>H.4.3, Path 3, Introduction. Addition of provision that it is not necessary to maintain the IPEEE used for the MSA provided the seismic capacity of any mitigating strategy SSC is not reduced below the IHS level.</p> <p>H.4.3 Background and Discussion – Deleted “and SFP level instrumentation” from the Spent Fuel Pool Cooling Evaluation section</p> <p>H.4.4 Path 4, changed presentation of process sequence resulting in 4 Steps otherwise no change in process</p> <p>H.4.4, Step 2, added “(including buried tanks)</p> <p>H. 6.2 – editorial changes and clarification that FLEX strategies or F L E X strategies with modifications may be used to address the effects of the MSSHI.</p> <p>H. 6.3 – changed “mitigate” to “address the effects” of the MSSHI. Added “as appropriate” to the last bullet for performing validations in accordance with Appendix E.</p> <p>H. 6.4 – new section for documenting MSSHI impact evaluations.</p> <p>H. 6.5 – new section for documenting conclusions of the selected strategy that addresses the MSSHI effects on mitigation strategies.</p> <p>Additional References 24, 25, and 26 added to listing in Section H.7</p>

Impact/Interpretation	Action
<p>New Guidance for performing Seismic Hazard evaluation.</p> <p>The Mitigating Strategies Assessment (MSA) determines if the FLEX strategies can be implemented given the impact of the reevaluated seismic hazard information. If it is determined the FLEX strategies cannot be implemented, the MSA considers other options such as plant modifications, modification to strategies or different mitigation strategies. The MSA process provides multiple assessment Paths to accommodate site specific differences between their design basis seismic hazard and their reevaluated seismic hazard.</p> <p>Implementation of any FLEX Strategy changes or facility changes (physical or technical basis) indicated by the MSA would be governed by Section 11.8, Configuration Control.</p> <p>The MSA document itself including the underlying risk analyses such as the SPRA is not required to be maintained. However, Section 11.8.1 requires the basis of the FLEX Strategies be maintained and Section 11.8.2 requires configuration control processes will be used to ensure changes to the facility will not adversely impact the FLEX Strategies. As such, ensuring the controlling seismic capacity or margin of any of the mitigating strategy SSCs is not reduced via replacement and/or plant modification will provide the on-going basis that the FLEX Strategies are not impacted by the reevaluated seismic hazard.</p>	<p>Validate site's Seismic MSA has been performed as described in Appendix H.</p> <p>If the MSA concluded the FLEX Strategies can be implemented without change due to the impact of the reevaluated seismic hazard information, a basis documentation update will be required.</p> <p>If the MSA concluded a change is needed, the change would be implemented with station procedures and as described in Section 11.8 including the determination if the change can be made without NRC approval.</p> <p>Implementation of these changes is required to achieve compliance with the implementation of 10 CFR 50.155.</p>

NEI 12-06, Appendix E – Validation Guidance		
Section	R-2 Change	R-4 Change
E.1 Purpose	Added "or the sequence of events associated with the Mitigating Strategies Flood Hazard Information (MSFHI)" This adds the expectation that actions associated with flooding (MSFHI) will be validated per this guidance.	No Change
E.2 Scope	Added "Validation also includes actions that are time constraints required to mitigate the MSFHI."	No Change
E.3 Terms and Definitions	Added: Anticipatory Actions – Actions completed in preparation for the occurrence of an event based upon the receipt of notification of the event due to the availability of warning time. Reactive Actions- Actions completed after the event starts or after warning time ends.	No Change
	Added "or the sequence of events associated with the MSFHI" to definition of Time Sensitive Actions.	No Change
	Deleted OIP, FIP, and Program Document.	No Change

Impact/Interpretation	Action
Editorial	None
New recommendation to perform validation for MSFHI (Reevaluated Flood Hazard)	Confirm strategy validation and documents include MSFHI.
Editorial	None
Editorial	None
Editorial	None

Section	R-2 Change	R-4 Change
E.4 Assumptions and Considerations	<p>E.4.F Removed "BDB" and added "For FLEX implementation" Expanded to clarify anticipatory actions that have a warning were excluded from the validation process during the implementation of FLEX because these actions would have been validated as part of the design basis event response.</p>	No Change
	<p>E.4.G Inserted new consideration for validation of FLEX anticipatory actions as well as existing design basis anticipatory actions. Previous consideration on qualitative assessment of TSA margin relocated to E.4.H</p>	No Change

Impact/Interpretation	Action
<p>Provides guidance for validation of anticipatory actions</p> <p>Note: Anticipatory Actions were not included in the white paper validation process.</p>	<p>Confirm strategy validation and documents include MSFHI.</p>
<p>Provides guidance for validation of anticipatory actions</p>	<p>Confirm strategy validation and documents include triggering event notification and anticipatory actions</p>

Section	R-2 Change	R-4 Change
E.4 Assumptions and Considerations	<p>E.4.H Qualitative assessment of TSA margin relocated from 4.G to E.4.H.</p> <p>Removed introductory statement regarding 'environmental factors cannot be ignored'.</p>	No Change
	<p>E.4.I Previous focus of validation relocated from 4.H to E.4.I</p> <p>Removed phrase 'were integrated into structure/implementation requirements of NEI 12-06' from last sentence.</p>	No Change
	<p>E.4.J Previous shutdown mode strategy validation relocated from 4.I to E.4.J.</p> <p>Added reference to Section 3.2.3 and last sentence 'This does not include</p>	No Change
	<p>E.4.K Previous personnel discussion relocated from 4.J to E.4.K.</p> <p>Removed 'Adequate'</p>	No Change
	<p>E.4.L Previous personnel discussion relocated from 4.K to E.4.L with no change in wording.</p>	No Change
	<p>Previous E.L referencing NEI 12-06, Section 11.8 was not relocated to Appendix E.</p>	No Change

Impact/Interpretation	Action
This section provides guidance that the qualitative assessment of margin is documented in the conclusions of the validation plan	Review validation documentation to ensure this assessment is documented
Editorial	None
Clarification	None
Clarification	None
Editorial	None
Editorial	None

Section	R-2 Change	R-4 Change
E.5.1 Overall Validation Process	Changed 'occur shortly after the event' to 'have limited available margin'.	No Change
E.5.1.1 Identification	Changed source of TSAs to be included in validation to the OIP/FIP and the MSFH. Removed TSAs within the first 24 hours.	No Change
E.5.1.2 Graded Approach Selection	Guidance added for anticipatory actions. Defined Level A for warning less than 6 hours and Level B for warning greater than 6 hours. . <ul style="list-style-type: none"> • time is greater than 6 hours. 	No Change

Impact/Interpretation	Action
<p>This section changes the graded approach from evaluating TSAs that “occur shortly after the event” to TSAs that “have limited available margin”</p>	<p>Review validation documentation to ensure this guidance is met.</p>
<p>Clarification</p> <p>Note: JLD-ISG-2012-01 R1 Section 1.1.c)1 and JLD-ISG-2012-01 R2 Section 1.1.3.a provides additional guidance on validation for tasks performed more than 24 hours after the event.</p>	<p>Review validation documentation to ensure this guidance is met.</p>
<p>Provides guidance for validation of anticipatory actions</p>	<p>Review validation documentation to ensure this guidance is met</p>

Section	R-2 Change	R-4 Change
E.5.1.2 Graded Approach Selection (Continued)	Reworded Note on tasks that do not require validation	No Change
E.5.1.3 Conduct of Validation	Updated example location from Attachment <u>2</u> to Attachment <u>3</u>	No Change
E.5.1.4 Documentation	Editorial change to the Validation being included or <u>incorporated by reference</u> in the Program Document.	No Change

DRAFT

Impact/Interpretation	Action
Clarification	None
Editorial	None
Editorial	None

DRAFT

Section	R-2 Change	R-4 Change
E.6.1 Identification of Items to be Validated	Reworded listing of items to be validated for consistency with remainder of Appendix. Removed reference to Phase 1 and Phase 2 shutdown mode tasks, added reactive TSAs and added anticipatory TSAs.	No Change
E.6.2 Selection of Validation Methods	Changed from listing criteria for level selection to referencing back to Section E.5.1.2.	No Change

DRAFT

Impact/Interpretation	Action
<p>Clarification and provides guidance for validation of anticipatory actions.</p> <p>Note: JLD-ISG-2012-01 R1 Section 1.1.c)1 and JLD-ISG-2012-01 R2 Section 1.1.3.a provides additional guidance on validation for tasks performed more than 24 hours after the event.</p>	<p>Review validation documentation to ensure this guidance is met</p>
<p>Editorial</p>	<p>None</p>

DRAFT

Section	R-2 Change	R-4 Change
E.6.3 Conduct of Validation	<p>Updated example location from Attachment 2 to Attachment 3</p> <p>Updated Table A and Table C to include MSFHI in source of items to be validated. 5".</p> <p>Updated references to other sections within Appendix for consistency.</p>	No Change
E.6.3.1 Validation for Level A TSAs	<p>Level A Reasonable Judgment: Added the following sentence.</p> <p>A brief justification should be provided to support non-performance of a task and to provide confidence of feasibility of the task performance during a BDBEE.</p>	No Change
E.6.3.2.2 Validation Confidence	<p>Added</p> <ul style="list-style-type: none"> • Use of any of the Level A methods described above. 	No Change
E.6.3.3.1 Resources	<p>Changed "SAFER National Response Centers personnel" to "National SAFER Response Centers personnel."</p>	No Change
E.7 ATTACHMENTS	<p>Added Attachment 4 and Attachment 5 to list. Were previously Appendix A and Appendix B</p>	No Change
ATTACHMENT 1 ITEMS TO BE VALIDATED	<p>Added the sequence of events associated with the MSFHI.</p>	No Change
ATTACHMENT 2 VALIDATION PLAN	<p>Minor formatting changes</p>	No Change

Impact/Interpretation	Action
Clarification and provides guidance for validation of anticipatory actions.	Review validation documentation to ensure this guidance is met
Added an additional guidance to provide a brief justification to support non-performance of a task and to provide confidence of feasibility of the task performance during a BDBEE	Review validation documentation to ensure this guidance is met.
Editorial, allows use of Level A validation method for validating a Level B action	None
Editorial	None
Editorial	None
Clarification and provides guidance for validation of anticipatory actions.	Review validation documentation to ensure this guidance is met See
Editorial	None

Section	R-2 Change	R-4 Change
ATTACHMENT 3 EXAMPLES	Minor formatting changes Note: Tables D and E include user notes on the expected level of detail/clarifications for information intended to be captured in the tables.	No Change
ATTACHMENT 4 GUIDANCE ON THE CONSIDERATION OF PERFORMANCE ATTRIBUTES	Changed from APPENDIX A to ATTACHMENT 4. Minor editorial enhancements.	No Change
	AMS is alternate mitigating strategy. THMS is Targeted Hazard Mitigating Strategy. Procedures - Added "If the same procedure framework is not used for an AMS/THMS, then this attribute would need to be addressed in Table E." Training - Added "If the SAT process is not used for an AMS/THMS, then this attribute would need to be addressed in Table E." Stress - Added "If the features of this guide described in Attachment 5 are not implemented for an AMS/THMS, then this attribute would need to be addressed in Table E." Staffing - Added "If the staffing study is not updated for an AMS/THMS, then this attribute would need to be addressed in Table E."	No Change
ATTACHMENT 5 INHERENT FLEX ATTRIBUTES THAT ENHANCE HUMAN RELIABILITY IN THE EVENT OF A BEYOND DESIGN BASIS EVENT	Changed from APPENDIX B to ATTACHMENT 5. Minor editorial enhancements. Removed reference to Order EA-12-049.	No Change

Impact/Interpretation	Action
Changes in the expected level of detail needed.	Review validation documentation for possible additional detail/clarifications required.
Editorial	None
Added specific Performance Attributes requirements for an AMS/THMS.	Review MSFHI to determine if an AMS and/or THMS were required. If required, determine if a revision to the site specific Validation Plan is needed to capture specific Performance Attributes guidance as detailed in NEI 12-06 R4 Appendix E, Attachment 4 "Guidance on the Consideration of Performance Attributes"
Editorial	None

Section	R-2 Change	R-4 Change
ATTACHMENT 5 INHERENT FLEX ATTRIBUTES THAT ENHANCE HUMAN RELIABILITY IN THE EVENT OF A BEYOND DESIGN BASIS EVENT (Continued)	<i>This is not a change. ,</i>	No Change
	Environmental Factors and Accessibility - Added "Where environmental conditions can be more specifically determined from the mechanistic evaluation of the event performed in support of an AMS/THMS, this information should be taken into account in this assessment."	No Change

Impact/Interpretation	Action
<p>Requirement for format operating aids (Hard Cards)</p> <p><i>This is not a change, but it is important to realize going forward:</i></p> <p><i>Special Equipment: Equipment operating instructions, prepared per the industry writer's guide Emergency Response Training Development (ERTD), are printed on colored paper with a standardized font determined to be the optimal combination for readability. This standardized operating aid format is applied throughout the industry, and allows equipment to be supplied from one utility to another without requiring extensive familiarization.</i></p>	<p>Review to confirm equipment operating aids (Hard Cards) were developed and printed using the INPO developed standardized format</p>
<p>Added statement, where environmental conditions can be more specifically determined from the mechanistic evaluation of the event performed in support of an AMS/THMS, this information should be taken into account in this assessment</p>	<p>Review to determine if an AMS and/or THMS were required.</p> <p>If required, ensure environmental conditions identified in the AMS/THMS were taken into account as part of the validation</p>

NEI FLEX FAQs		
FAQ Number	Subject	Disposition for NEI 12-06 Revisions 2 and 4
FAQ-2012-01	Screening for High Wind Conditions	Retain. Supports NEI 12-06 Section 7.2.1
FAQ-2012-02	N+1 Applicability to offsite equipment	Retain. Supports NEI 12-06 Section 3.2.2
FAQ-2012-03	Common connections	Close. Common connections have been defined for NSRC equipment as part of the procurement process and are beyond the scope of NEI 12-06 guidance.
FAQ-2012-04	Drills for FLEX deployment	Retain. Supports NEI 12-06 Section 11.6.5
FAQ-2012-05	Unavailability of FLEX connections	Close. Included in NEI 12-06 Section 11.5.4
FAQ-2012-06	Staffing considerations-personnel injuries	Retain. Supports NEI 12-06 Section 11.7
FAQ-2012-07	Loss of normal access to the UHS	Close. Included in NEI 12-06 Section 3.2.1.3(4)
FAQ-2012-08	Starting battery capacity for battery calcs	Close. Included in NEI 12-06 Section 3.2.1.2(2)
FAQ-2012-09	Availability of ac distribution equipment	Close. Included in NEI 12-06 Section 3.2.2(17)
FAQ-2012-10	Screening for Flooding	Retain. Supports NEI 12-06 Section 6.2.1
FAQ-2012-11	Impact of EDG Field Flash on Battery loading calculations	Retain. Supports NEI 12-06 Section 3.2.2(6)
FAQ-2012-12	Wind load combinations	Close. Included in NEI 12-06 Section 7.3.1
FAQ-2012-13	Flooding Event Timeline	Close. Included in NEI 12-06 Section 6.2.2 and Appendix G
FAQ-2012-14	High Wind Hazards	Retain. Supports NEI 12-06 Section 7.3.1(1.b)
FAQ-2012-15	High Temperatures	Retain. Supports NEI 12-06 Section 9.2
FAQ-2012-16	Fire Ring Header Availability	Close. Included in NEI 12-06 Section 3.2.1.3(10)
FAQ-2012-17	Seabrook Supplemental Emergency Power System	Retain. Supports NEI 12-06 Section 11.3
FAQ-2012-18	Seabrook Backup UHS	Retain. Supports NEI 12-06 Section 3.2.1.3(6)
FAQ-2012-19	Implementation in all modes	Retain. Supports NEI 12-06 Section 2 and Table D-1
FAQ-2012-20	Backup Diesel Generator	Close. Included in NEI 12-06 various sections by the use of the terms “plant equipment” and “FLEX equipment” and the change in terms from “portable FLEX equipment” to “FLEX equipment” which may be installed or portable.
FAQ-2013-01 Rev 1	Tornado Missile Separation	Close. Included in NEI 12-06 Section 7.3.1(1.c)
FAQ-2013-02	High Wind Loading Reasonable Protection	Close. Included in NEI 12-06 Section 7.3.1(1.c)
FAQ-2013-03	SFP Timeline Based on Makeup or Spray	Retain. Supports NEI 12-06 Section 3.2.1.6
FAQ-2013-04	Pre-staged diesel pump access to the UHS	Close. Included in NEI 12-06 Section 3.2.1.3(4)

FAQ Number	Subject	Disposition for NEI 12-06 Revisions 2 and 4
FAQ-2013-05	Sequence of Events Timeline (SFP)	Close. Included in NEI 12-06 Section 3.2.2(14)
FAQ-2013-06	Use of installed equipment for RCS Inventory Control/Subcriticality	Close. Included in NEI 12-06 Section 3.2.2(13) and Table D-1
FAQ-2013-07	Reasonable Protection	Close. Included in NEI 12-06 Section 7.3.1
<i>FAQ-2013-08</i>	Maintenance Rule Applicability	Close. This question has been addressed through revisions to NUMARC 93-01
<i>FAQ-2013-09</i>	Spent Fuel Pool Make-Up and Spray Strategy[1]	Retain. Supports NEI 12-06 Tables 3-1, 3-2, C-3 and D-3.
<i>FAQ-2013-10</i>	Shutdown mode capability requirements	Close. Included in NEI 12-06 Section 3.2.3
<i>FAQ-2013-11</i>	Raw Water	Close. Included in NEI 12-06 Section 3.2.2(5)
<i>FAQ-2013-12</i>	Indefinite Coping	Close. Included in NEI 12-06 Section 3.3
<i>FAQ-2014-01</i>	Use of FLEX equipment for non-BDBEE's	Close. Included in NEI 12-06 Section 1 and 11.4.1(2)
<i>FFAQ-2014-01</i> FAQ system was changed to FLEX FAQ (FFAQ)	Alternate Instrument Readings	Close. Included in NEI 12-06 Section 5.3.3(1)
<p>[1] Note that the SFP spray capability is not required for plants that have SFPs that are below ground and cannot be drained as determined during the implementation of B.5.b/10 CFR 50.54(hh)(2) [10 CFR 50.155(b)(3)] or for plants that have demonstrated spent fuel pool integrity by performing a seismic spent fuel pool integrity evaluation for their mitigating strategies seismic hazard using EPRI 3002007148, Seismic Evaluation Guidance: Spent Fuel Pool Integrity Evaluation, or other NRC endorsed guidance.</p>		

8 NEI 12-01 COMPARISON

Introduction

To assist in implementing 10 CFR 50.155, a gap assessment of NEI 12-01, Revision 0 has been performed. That process involved preparing a matrix to facilitate review of the following references to assess potential gaps that a licensee may encounter during implementation of 10 CFR 50.155 and identify the recommended actions to close those gaps:

- 10 CFR 50.155 sections applicable to Beyond Design Basis (BDB) event response staffing and communications capabilities including the applicable portions of the associated statements of consideration (ADAMS Accession No. ML16292A026).
- Regulatory Guide (RG) 1.228 Revision 0, Integrated Response Capabilities for Beyond-Design-Basis Events, endorses NEI 12-01 Revision 0 as an acceptable method to assess staffing and communication capabilities and needs when responding to a beyond-design-basis event. There are no exceptions or clarifications to NEI 12-01 Revision 0 guidance in RG 1.228. Therefore, there are no additional gaps specific to RG 1.228 that need to be addressed for compliance with staffing and communications requirements of the rule.
- NEI 12-01 Revision 0, Guidelines for Assessment Beyond Design Basis Accident Response Staffing and Communications Capabilities.
- Other NRC requirements or guidance supporting the development of NEI 12-01 Revision 0 as listed in the “Other Requirement or Guidance” column of the gap assessment matrix.

All power reactor licensees and holders of Construction Permits in Active or Deferred Status received a 10 CFR 50.54(f) letter regarding NTF recommendation 9.3, dated March 12, 2012. See Attachment 6 of the 10 CFR 50.54(f) letter for a listing of addressees. In response to the March 12, 2012 letter, addressees performed staffing and communication assessments using the guidance provided in NEI 12-01 Revision 0. 10 CFR 50.155 does not require these assessments to be re-performed, but addressees need to review commitments made in those assessment submittals and determine which of the commitments are necessary for rule compliance and need to be treated as obligations. In addition, the following need to be maintained per the change control process in 10 CFR 50.155(g):

- Documentation of sufficient staffing to support the strategies required by 10 CFR 50.155(b)(1) through (b)(3).
- Documentation of the communications capability to support the strategies required by 10 CFR 50.155(b)(1) and (b)(2).

Summary of Major Gap Assessments / Recommended Actions

- NOTES:
1. 10 CFR 50.155(b)(5) requirements for staffing capabilities are applicable to the requirements of 10 CFR 50.155(b)(1) through (b)(3).
 2. 10 CFR 50.155(c)(4) requirements for communications capabilities are applicable to the requirements of 10 CFR 50.155 (b)(1) and (b)(2).
 3. Although the requirements for communications capabilities contained in 10 CFR 50.155(c)(4) are not applicable to paragraph 10 CFR 50.155(b)(3) (EDMGs), all licensees have existing communications capabilities supporting EDMGs at the guidance level. See the B.5.b Phase 1 guidance letter dated February 25, 2005, Items B.1.i and B.2.b. Further details are available in NUREG 0800, Standard Review Plan, Section 19.4, Acceptance Criteria Item 12.

The recommended actions identified by the gap assessment review are provided in the “GAP Assessment / Recommended Action” column of the matrix and are summarized below.

1. Verify drill or exercise critiques and training feedback mechanisms include consideration of staffing and communications capabilities and assessments in the performance of 10 CFR 50.155 related drills, exercises and training.

2. Verify the applicable change control process (e.g., 10 CFR 50.155(g) as implemented in the FLEX program document) contains adequate administrative controls for the identification of potential impacts to staffing and communications capabilities required to implement of 10 CFR 50.155(b) strategies. Specific elements to consider as it relates to a BDB event include:
 - a. Utilization of RP, Security and administrative support resources
 - b. Changes to work areas to be utilized by staff responding to an event
 - c. Changes to expanded response capabilities and procedures
 - d. Changes to access enhancing measures
 - e. Changes to capabilities and use of the plant paging system
 - f. Changes to communications capabilities to off-site response organization facilitiesChange control processes defined by 10 CFR 50.54(p), 10 CFR 50.54(q) and 10 CFR 73.58 in addition to 10 CFR 50.155(g) should also be considered for the above changes.
3. Include a demonstration of the associated communications capability when conducting the initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraphs (b)(1), (b)(2) or (b)(3) of 10 CFR 50.155. This drill or exercise must be completed within four years of the effective date of the rule.
4. Confirm communications capabilities committed to in response to the 50.54(f) letter comply with the requirements of 10 CFR 50.155(c)(4).
 - a. Determine which commitments will remain commitments subject to licensee control per NEI 99-04 and the site specific commitment change process.
 - b. Determine which commitments should be treated as obligations subject to the change control process defined in 10 CFR 50.155(g).
 - c. Treat as obligations all communications capabilities credited with supporting 10 CFR 50.155(b)(1) and (b)(2) strategies, although not necessarily included in the communications assessments (e.g., may be included in the Final Integrated Plan (FIP) or Mitigation Strategies Assessment (MSA)) performed in response to the 50.54(f) letter necessary for compliance with 10 CFR 50.155(c)(4).
 - d. Treat all communications capabilities credited with supporting 10 CFR 50.155(b)(3) strategies as obligations subject to the change control process in 10 CFR 50.155(g).

2. Verify that communications equipment necessary to implement 10 CFR 50.155(c)(4) (or to implement 10 CFR 50.155(b)(3) strategies) is included in inventory checklists and is periodically verified functional with periodic maintenance tasks and frequencies defined.
3. Verify that communications equipment contracts with vendors supporting communications equipment necessary to implement 10 CFR 50.155(c)(4) are maintained current and periodically verified.
4. Verify that communications equipment procurement specifications or purchasing documents are consistent with requirements normally applied to other EP equipment and should be commonly available, commercial grade with readily available parts and replacement.
5. Verify agreements with communications service providers that enable access to Government Emergency Telecommunications Service (GETS), the Telecommunications Service Priority (TSP) programs and the Wireless Priority Service (WPS) are maintained current and periodically verified. Information related to these services may be obtained from <https://www.dhs.gov/office-emergency-communications>, under the Response Support section of the web page. Note that the National Communications Service (NCS) referenced in NEI 12-01 was disbanded by Executive Order 13618 on July 6, 2012 and the cited website is no longer functional. See matrix NEI 12-01 Section 4.9 for additional information addressing this action.
6. Verify agreements with communications providers of Emergency Services (e.g., satellite phone service) are maintained current and periodically verified.

User's Notes

Due to the large size of this matrix, it has been formatted to extend across two adjacent facing pages

The matrix follows the outline of NEI 12-01. An explanation of the information in each column of the matrix follows:

- 10 CFR 50.155 Section – Sections of the rule that are applicable to the guidance in the section of NEI 12-01 being addressed.
- Other Requirement or Guidance - Other documents that relate to the guidance in the section of NEI 12-01 being addressed.
- Section Guidance – A general description or outline of the information provided in the section of NEI 12-01 being addressed.
- Statements of Consideration – Provides the Statements of Consideration (SOC) section number and title when a SOC passage provides information relevant to the section of NEI 12-01 being addressed. In addition, a page reference is sometimes provided to indicate where the discussion on the specific subject can be found.
- Interpretation – Background or further explanation of the guidance in NEI 12-01.
- Proposed Action - Captures any generic actions being undertaken by the industry to address the item or recommends actions that should be taken by a utility.

Also see Section 3.0, General Matrix Usage, for general usage information.

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10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 1 INTRODUCTION			
	None	1.1 - Response Staffing Assessment Background Information	None
		1.2 - Communications During an Extended Loss of AC Power Assessment Background Information	None
		1.3 - Approach to Information Request Responses Background Information discussing phased approach for information responses	None
None	EP Rule ISG NSIR/DPR-ISG-01 NEI 10-05 10 CFR 50.54(f) letter	1.3.1 - Staffing Two phased approach for staffing assessments for single and multi-unit sites	None
		1.3.1.1 - Phase 1 Staffing Assessment Complete and submit multi-unit Phase 1 staffing assessment by April 30, 2013	None
		1.3.1.2 - Phase 2 Staffing Assessment Complete and submit Phase 2 staffing assessment no later than 4 months prior to beginning of second refueling outage associated with EA-12-049 compliance.	None

Interpretation	Gap Assessment / Recommended Action
SECTION 1 INTRODUCTION	
None	None
None	None
None	None
None	None. Action completed
None	None. Action completed
None	None. Action completed. Note that for multi-unit sites with dissimilar units and strategies, multiple Phase 2 Staffing Assessments may have been submitted.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 1 INTRODUCTION			
None	<p>B.5.b Phase 1 Guidance Letter issued 2/25/2005</p> <p>NUREG 0800 Section 19.4</p>	<p>1.3.2 - Communications</p> <p>Background information on timing of communications assessments</p>	None
	<p>10 CFR 50 Appendix B</p>	<p>1.4 - Tracking of Assessment Results</p> <p>Describes expectations for tracking corrective actions and enhancements in either the corrective action program or as commitments as applicable.</p>	None
	<p>EP Rule ISG NSIR/DPR-ISG-01 NEI 10-05 10 CFR 50.54(f) letter</p>	<p>Table 1.1 - Summary of Licensee Actions for Responding to NRC Information Requests Related to EP</p> <p>1. Assess staffing for responding to events defined in EP Rule Interim Staff Guidance (ISG) (see Note 2); assessment performed in accordance with NEI 10-05. December 24, 2012 per EP Rule ISG</p> <p>2. Provide an alternative course of action for responding to the Letter. Consider use of standard response template from NEI. Provide within 60 days of the 10 CFR 50.54(f) letter.</p> <p>3. Communications - provide information on interim actions; respond to Information Request #2. Provide within 90 days of the 10 CFR 50.54(f) letter.</p> <p>4. Staffing - provide information on augmented staff notifications, methods of site access and interim actions; respond to Information Requests #3, #4 and #5. Provide within 90 days of the 10 CFR 50.54(f) letter.</p>	None

<p style="text-align: center;">Interpretation</p>	<p style="text-align: center;">Gap Assessment / Recommended Action</p>
<p>SECTION 1 INTRODUCTION</p>	
<p>While not specifically addressed in regulation, the communications capabilities consistent with established guidance are essential elements of compliance with (b)(3) unless a licensee implements an alternate method of compliance. Review site specific B.5.b SER for details on site specific communications capabilities supporting (b)(3) strategies.</p>	<p>None, unless changes are made to communications capabilities supporting (b)(3) strategies. Changes should follow the change control process defined in 10 CFR 50.155(g).</p>
<p>None</p>	<p>None. Action completed</p>
<p>None</p>	<p>None. Action completed</p> <p>Single-unit sites did not need to provide a Phase 1 staffing assessment in response to the 10 CFR 50.54(f) letter as performance of this activity is governed by the recent EP Rule and the existing license requirements.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 1 INTRODUCTION			
None	EP Rule ISG NSIR/DPR-ISG-01 NEI 10-05 10 CFR 50.54(f) letter	<p>5. Communications – perform and provide an assessment to identify enhancements that may be needed to ensure communications are maintained during a large-scale external event meeting the conditions described in the standard assumptions. Refer to Section 4 of this document [NEI 12-01] for assessment guidance. Develop an implementation schedule. Respond to Requests #1 and #3. Provide by October 31, 2012.</p>	None
		<p>6. Staffing (phase 1) – perform and provide an assessment of the on-site and augmented staff needed to respond to a large-scale external event meeting the conditions described in the standard assumptions, NOT including staffing needed to implement actions that address NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (EA-12-049). Refer to Section 3 of this document [NEI 12-01] for guidance. Develop an implementation schedule for staffing changes, and identify changes to the emergency plan. Respond to Requests #1, #2 and #6. Provide by April 30, 2013</p>	
		<p>7. Staffing (phase 2) – perform and provide an assessment of the staffing necessary to implement actions that address NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (EA-12-049). Perform assessment in conjunction with the development of procedures or guidelines that address the Order. Refer to Section 3 of this document [NEI 12—01] for guidance.</p> <p>Develop an implementation schedule for staffing changes, and identify changes to the emergency plan. Respond to Requests #1, #2 and #6. Provide no later than four (4) months prior to the beginning of the second refueling outage associated with Order EA-12-049 compliance.</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 1 INTRODUCTION	
None	None. Action completed Single-unit sites did not need to provide a Phase 1 staffing assessment in response to the 10 CFR 50.54(f) letter as performance of this activity is governed by the recent EP Rule and the existing license requirements.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 2 ASSESSMENT ASSUMPTIONS			
None	<p>10 CFR 50.54(f) letter, Enclosure 5</p> <p>Communications guidance for (b)(3) strategies is found in the B.5.b Phase 1 guidance letter dated 2/25/2005 , Items B.1.i and B.2.b and NUREG 0800 Section 19.4 Acceptance Criteria Item 12.</p>	<p>2.1 - Purpose</p> <p>Use assumptions from NEI 12-01 to perform staffing and communication assessments</p>	<p>VI. Section-by-Section Analysis, Paragraphs 10 CFR 50.155(g)(1) and (2), Documentation of Changes, pages 132 and 133</p>
		<p>2.2 - Assumptions Common to Both Assessments</p> <p>Provides specific assumptions to be used in the staffing and communications assessments</p> <p>A staffing assessment may utilize a “no site access” end time of less than 6 hours and greater than or equal to 4 hours, if supported by a documented basis. This basis should include a discussion of the site-specific transportation-related resources and capabilities, and related supporting arrangements, which provide assurance that augmented staff would be available on the site starting at the time.</p>	
		<p>2.3 - Assumptions for Staffing Assessment</p> <p>Provides specific assumptions to be used in the staffing assessments</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 2 ASSESSMENT ASSUMPTIONS	
<p>The same assumptions should be used if changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that may impact staffing and/or communications required by the respective strategies</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing or communications required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents. Note (c)(4) communications capabilities do not apply to (b)(3) strategies. See guidance documents for EDMG communications capabilities and the NRC SER for EDMGs for assumptions related to communications needed for EDMGs.</p>
<p>The same assumptions should be used if changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that may impact staffing and/or communications required by the respective strategies</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing or communications required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents. Note (c)(4) communications capabilities do not apply to (b)(3) strategies. See guidance documents for EDMG communications capabilities and the NRC SER for EDMGs for assumptions related to communications needed for EDMGs.</p>
<p>The same assumptions should be used if changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that may impact staffing required by the respective strategies</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 2 ASSESSMENT ASSUMPTIONS			
None	10 CFR 50.54(f) letter, Enclosure 5	2.4 - Assumptions for Communications Assessment Provides specific assumptions to be used in the communication assessment.	
SECTION 3 STAFFING STUDY			
None	None	3.1 - Overview of a Beyond Design Basis External Event Response Background information	None
None	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Action 1	3.2 - Assessment of On-Shift Staffing for a Beyond Design Basis External Event Affecting Multiple Units Phase 1 staffing assessment guidance for on-shift minimum staffing.	None
None	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Action 1	3.3 - Existing Augmented Staffing for Responding to a Multi-Unit Event Discussion of existing augmented staffing (ERO) capabilities and that they are sufficient to perform required functions during a multi-unit beyond design basis event.	None

Interpretation	Gap Assessment / Recommended Action
SECTION 2 ASSESSMENT ASSUMPTIONS	
<p>The same assumptions should be used if changes are made to 10 CFR 50.155(b)(1) and (b)(2) mitigation strategies that may impact communications required by the respective strategies</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) and (b)(2) mitigation strategies that impact communications required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>
SECTION 3 STAFFING STUDY	
None	None.
None	None. Action completed
None	None.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 3 STAFFING STUDY			
10 CFR 50.155(b) 10 CFR 50.155(b)(5)	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 1, 2, 5 and 6	3.4 - Expanded Response Capability for Responding to a Multi-Unit Event Provides guidance for performing staffing assessments for expanded response capability for responding to a multi-Unit Event. Table 3.1 provides staffing considerations to support the Phase 1 staffing assessment while Table 3.2 provides staffing considerations to support the Phase 2 staffing assessment.	VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(b), Integrated Response Capability, page 113 VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(b)(5), Integrated Response Capability, Staffing, pages 119 and 120
	None	3.5 - Position-Specific Assessment Guidance Section title, no guidance or actions	

Interpretation	Gap Assessment / Recommended Action
SECTION 3 STAFFING STUDY	
<p>Staffing assessments were completed under the 10 CFR 50.54(f) letter and submitted per the required actions of that letter. From the Statement of Considerations, there is no intent to require current licensees to re-perform those staffing assessments as part of 10 CFR 50.155 implementation. However, current licensees that performed these staffing assessments should maintain any commitments made in the responses submitted under the 10 CFR 50.54(f) letter required responses. Changes to those commitments should follow the commitment change process established by the Licensee. Additionally, Licensees should address the potential impact of changes to the 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies on the staffing assessments that were performed to ensure that staffing remains adequate. The need for this evaluation could come about in one of several ways:</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>
<ol style="list-style-type: none"> 1. Changes to the 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that involve additional actions, action complexity or that change the sequence of required actions. 2. Changes to minimum staffing requirements that impact the number of staff available to perform required actions. 	<p>None.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 3 STAFFING STUDY			
10 CFR 50.155(b) 10 CFR 50.155(b)(5)	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 1, 2, 5 and 6	<p>3.5.1 - On-Site Radiation Protection Technicians</p> <p>Provides guidance for utilizing RP Technicians to support implementation of coping strategies while ensuring other RP Technician functions can be maintained.</p>	<p>VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(b), Integrated Response Capability, page 113</p> <p>VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(b)(5), Integrated Response Capability, Staffing, pages 119 and 120</p>
	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 1, 2, 5 and 6	<p>3.5.2 - Administrative Support Personnel</p> <p>Determine if current assignments and locations of administrative support personnel are adequate for implementation of the expanded response capability, and identify necessary changes.</p>	
	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 1, 2, 5 and 6	<p>3.6 - Staffing for Expanded Response Functions</p> <p>Ensure the availability of a sufficient number of personnel to perform expanded response functions. This may be done using one or more of the methods provided in NEI 12-01 Section 3.6.</p> <p>Personnel identified by the staffing assessment as necessary for performing a planned or expected response action should be provided with appropriate training. Consider the applicability of the training requirements specified in 10 CFR 50, Appendix E and related guidance.</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 3 STAFFING STUDY	
<p>3. Changes in how minimum staff are utilized (e.g., staffing assessment may have included or excluded security personnel and the Licensee changes that approach). See NEI white paper guidance in "Generic Basis for Responses to Staffing Assessment Questions Related to Use of Security Personnel during a BDB Event Response" dated November 20, 2013 for changes related to the use of Security personnel</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing and utilization of RP resources that impact staffing required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>
<p>4. Feedback from drills or exercises may also prompt a staffing re-evaluation.</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing and utilization of administrative support personnel that impact staffing required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>
	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact staffing required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p> <p>For drills, exercises and training conducted to meet the requirements of 10 CFR 50.155, verify that critique and training feedback mechanisms include consideration of staffing and communications capabilities.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 3 STAFFING STUDY			
10 CFR 50.155(b) 10 CFR 50.155(b)(5)	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 2 through 6	3.7 - Work Areas for Personnel Performing Expanded Response Functions Identify additional work areas necessary for the performance of expanded response functions. The use of alternate emergency response facilities should be considered.	Continued from previous page Statement of Consideration
Continued from previous page	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 2 through 6	3.8 - Activating an Expanded Response Capability Develop an implementing strategy to integrate the expanded response capability into the existing augmented ERO. Such a strategy would include decision making criteria for initiating the actions necessary to ensure timely performance of expanded response functions.	Continued from previous page Statement of Consideration

Interpretation	Gap Assessment / Recommended Action
SECTION 3 STAFFING STUDY	
Continued from previous page Interpretations	None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies or to work areas that impacts or changes the work areas required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.
Continued from previous page Interpretations	None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies or to the activation of expanded response capability that impacts or changes the activation of integrated response capability required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 3 STAFFING STUDY			
Continued from previous page	10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 2 through 6	<p>3.9 - Mobilization of Expanded Response Capability Staffing</p> <p>Identify appropriate alternate transportation resources and access enhancing measures that would be used to facilitate timely staff augmentation during or following an event that cause impeded access to the site.</p> <p>A listing of resource providers should be developed and made available to appropriate ERO personnel.</p> <p>Some arrangements may require a written agreement.</p>	
	10 CFR 73.58 10 CFR 50.54(p) 10 CFR 50.54(q) 10 CFR 50.54(f) letter, Enclosure 5 Staffing Assessment Actions 2, 5 and 6 NUREG 0800 Section 19.4 B.5.b Phase 1 Guidance Letter Dated 2/25/2005	<p>3.10 - Considerations for Program Documents</p> <p>Development of, and changes to, procedures or guidelines that implement extended loss of AC power and SAM strategies should be assessed to determine if emergency response staffing levels are impacted. The establishment of appropriate administrative controls should be considered.</p> <p>Determine if any changes are necessary to documents describing the emergency response drill and exercise program. In particular, standard objectives and extent-of-play may need to be revised to clarify the expected demonstration of functions that are dependent up the type of scenario event or accident. Note – guidance to meet the drill and exercise requirements of 10 CFR 50.155(e) was subsequently issued in NEI 13-06. Sites should follow guidance in that document, including any changes to objectives to extent-of-play.] For example, functions associated with an expanded response capability would not be demonstrated during a drill or exercise that involved a design basis accident affecting only one unit.</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 3 STAFFING STUDY	
<p>Continued from previous page</p> <p>Although this section of NEI 12-01 applies to staffing, the section itself addresses program document considerations including the control of changes. NEI 12-01 Section 4, Communications during an Extended Loss of AC Power, does not contain an equivalent section. The new rule, 10 CFR 50.155, imposes requirements on the configuration control of communications equipment supporting the various strategies of the rule. The use of this section to address communications is a logical extension of its purpose.</p>	<p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies or to the access enhancing measures put in place to support the respective strategies that impacts or changes the access enhancing measures required by the respective strategy. Addressed in the evaluation of NEI 12-01 Section 3.10 of this matrix, Considerations for Program Documents.</p>
<p>Changes impacting staffing or staffing assessments supporting (b)(1) through (b)(3) strategies should be evaluated per the following change control processes as applicable:</p> <ul style="list-style-type: none"> • 10 CFR 50.155(g) • 10 CFR 50.54(p) • 10 CFR 50.54(q) • 10 CFR 73.58 <p>Changes impacting communications capabilities supporting (b)(1) through (b)(3) strategies should be evaluated per the 10 CFR 50.155(g) and if applicable, 10 CFR 50.54(q). However, the evaluation of changes supporting (b)(1) and (b)(2) strategies must continue to comply with 10 CFR 50.155(c)(4) while changes supporting (b)(3) strategies must continue to conform with applicable EDMG guidance such as the B.5.b Phase 1 guidance letter dated February 25, 2005, Items B.1.i and B.2.b or NUREG 0800 Section 19.4, Acceptance Criteria 12. Licensees should refer to site specific NRC SER for EDMGs when evaluating what constitutes a “change” in communication capability supporting (b)(3) strategies.</p>	<p>Verify the applicable change control process (e.g., 10 CFR 50.155(g) as implemented in the FLEX program document) contains adequate administrative controls for the identification of impacts to staffing and communications assessments that may impact the implementation of 10 CFR 50.155(b) strategies. Specific elements to consider as it relates to a BDB event:</p> <ul style="list-style-type: none"> - Utilization of RP, Security and administrative support resources - Changes to work areas to be utilized by staff responding to an event - Changes to expanded response capabilities and procedures - Changes to access enhancing measures <p>Change control processes defined by 10 CFR 50.54(p), 10 CFR 50.54(q) and 10 CFR 73.58 in addition to 10 CFR 50.155(g) should also be considered for the above changes.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
None	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Action 1	4.1 - Required Emergency Communications Capabilities Ensure availability of existing capabilities consistent with the assumptions listed in NEI 12-01 Section 2, in particular the availability of primary and backup power sources for each communication system or piece of equipment identified. Ensure each piece of equipment/communications channel is used solely for the purpose indicated (don't double credit available equipment). Consider some communications capabilities in alternate facilities at offsite locations instead of their normal locations in on-site facilities.	None
	None	4.1.1 - Notifications to, and communications with OROs Provides minimum communications links for Control Room, TSC and EOF	None
	None	4.1.2 - Notifications to, and communications with the Nuclear Regulatory Commission Provides minimum communications links for Control Room, TSC and HPN	None

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
<p>“existing capabilities” as used in the context of NEI 12-01 Section 4.1 means the capabilities that existed prior to communications capability enhancements made in response to the 10 CFR 50.54(f) letter.</p>	<p>None</p>
<p>This section is intended to define minimum communications capabilities supporting the Emergency Plan.</p>	<p>Use 10 CFR 50.155(g) to evaluate changes in capability supporting strategies required by (b)(1) through (b)(3). Use 10 CFR 50.54(q) to evaluate changes in capability supporting the Emergency Plan, if applicable.</p>
<p>This section is intended to define minimum communications capabilities supporting the Emergency Plan.</p>	<p>Use 10 CFR 50.155(g) to evaluate changes in capability supporting strategies required by (b)(1) through (b)(3). Use 10 CFR 50.54(q) to evaluate changes in capability supporting the Emergency Plan, if applicable.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
None	None	4.1.3 - Communications between licensee emergency response facilities Provides minimum communications links for Emergency Response Facilities (Control Room, TSC, OSC, EOF and JIC)	None
	None	4.1.4 - Communications with field/offsite monitoring teams Provides minimum communications links for field teams	None
	None	4.1.5 - Communications with other Federal agencies as described in the site emergency plan Provides minimum communications links with other Federal agencies (as needed to provide coordination with Federal agencies)	None
	None	4.1.6 - Communications with on-site and inplant response teams Assessment conducted in two phases as described in subsection 4.1.6.1 and 4.1.6.2	None

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
<p>This section is intended to define minimum communications capabilities supporting the Emergency Plan.</p>	<p>None. Use 10 CFR 50.155(g) to evaluate changes in capability supporting strategies required by (b)(1) though (b)(3). Use 10 CFR 50.54(q) to evaluate changes in capability supporting the Emergency Plan, if applicable.</p>
<p>This section is intended to define minimum communications capabilities supporting the Emergency Plan.</p>	<p>None. Use 10 CFR 50.155(g) to evaluate changes in capability supporting strategies required by (b)(1) though (b)(3). Use 10 CFR 50.54(q) to evaluate changes in capability supporting the Emergency Plan, if applicable.</p>
<p>This section is intended to define minimum communications capabilities supporting the Emergency Plan.</p>	<p>None. Use 10 CFR 50.155(g) to evaluate changes in capability supporting strategies required by (b)(1) though (b)(3). Use 10 CFR 50.54(q) to evaluate changes in capability supporting the Emergency Plan, if applicable.</p>
<p>None</p>	<p>None</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
None	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Action 1	4.1.6.1 - Phase 1 assessment Provides minimum communications links necessary to support the functions of radiological monitoring, firefighting, search and rescue, emergency repairs and any two severe accident mitigation strategies	None
10 CFR 50.155(c)(4) 10 CFR 50.155(e) 10 CFR 50.155(g)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 NEI 99-04	4.1.6.2 - Phase 2 assessment Provides site specific minimum communication links needed to implement any two strategies developed in response to NRC Order EA-12-049 for the OSC and other site-specific locations as necessary	VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(C)(4), Communications Equipment, pages 125 and 126 VI. Section-by-Section Analysis, Paragraph 10 CFR 50.155(e), Drills or Exercises, pages 127 and 130
	None	4.1.7 - Other communications links based on site-specific needs identified during the [Phase 2] assessment	

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
None	None. Action completed in licensee response described in Action #5 in NEI 12-01 Table 1.1
<p>Communications assessments were completed under the 10 CFR 50.54(f) letter and submitted per the required actions of that letter. From the Statement of Considerations, there is no intent to bind current Licensees to providing the communications capabilities discussed in responses to the 50.54(f) letter as part of 10 CFR 50.155 implementation. However, licensees that performed these communication assessments should review commitments made in the responses submitted under the 10 CFR 50.54(f) letter and confirm they comply with 10 CFR 50.155(c)(4). Commitments found to meet the communications requirements of the rule should be treated as obligations subject to the 10 CFR 50.155(g) change control process while remaining commitments remain under licensee control per NEI 99-04 and site specific commitment control process. Additionally, Licensees should address the potential impact of plant changes on communications capabilities needed to support 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies to ensure the capabilities remain adequate.</p> <p>Licensees that make changes to communications capability related commitments should consider the acceptable approaches for addressing the communications requirements of 10 CFR 50.155(c)(4) provided in RG 1.228, "Integrated Response Capabilities for Beyond Design-Basis Events".</p> <p>Feedback from drills or exercises may also prompt a communications re-evaluation.</p>	<ol style="list-style-type: none"> 1. Verify drill or exercise critiques and training feedback mechanisms include consideration of staffing and communications capabilities and assessments in the performance of 10 CFR 50.155 related drills, exercises and training. 2. Verify the applicable change control process (e.g., 10 CFR 50.155(g) as implemented in the FLEX program document) contains adequate administrative controls for the identification of potential impacts to communications capabilities required to implement of 10 CFR 50.155(b) strategies. Specific elements to consider as it relates to a BDB event include: <ul style="list-style-type: none"> • Changes to capabilities and use of the plant paging system • Changes to communications capabilities to off-site response organization facilities Change control processes defined by 10 CFR 50.54(p), 10 CFR 50.54(q) and 10 CFR 73.58 in addition to 10 CFR 50.155(g) should also be considered for the above changes. 3. Include a demonstration of the associated communications capability when conducting the initial drill or exercise that demonstrates the capability to transition to and use one or more of the strategies and guidelines in either paragraphs (b)(1), (b)(2) or (b)(3) of 10 CFR 50.155. This drill or exercise must be completed within four years of the effective date of the rule. 4. Confirm communications capabilities committed to in response to the 50.54(f) letter comply with the requirements of 10 CFR 50.155(c)(4). <ol style="list-style-type: none"> a. Determine which commitments will remain commitments subject to licensee control per NEI 99-04 and the site specific commitment change process. b. Determine which commitments should be treated as obligations subject to the change control process defined in 10 CFR 50.155(g). c. Treat as obligations all communications capabilities credited with supporting 10 CFR 50.155(b)(1) and (b)(2) strategies, although not necessarily included in the communications assessments (e.g., may be included in the Final Integrated Plan (FIP) or Mitigation Strategies Assessment (MSA)) performed in response to the 50.54(f) letter necessary for compliance with 10 CFR 50.155(c)(4). d. Treat all communications capabilities credited with supporting 10 CFR 50.155(b)(3) strategies as obligations subject to the change control process in 10 CFR 50.155(g). <p>None unless changes are made to 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact communications required by the respective strategy. Changes are addressed under NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.2 - Plant Paging (Announcement) System Perform this assessment if the plant paging (announcing) system is described in the site emergency plan as a method to communicate initial response instructions to the plant staff. After the initial announcement for personnel to report to assigned emergency response facilities or assembly area, the plant paging system is no longer required.	(continued from previous Page Statements of Consideration)
10 CFR 50.155(c)(4)	None	4.2.1 - The following assessment actions should be performed:	
10 CFR 50.155(e) (continued from previous page)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.2.1.1 - Determine if the plant-paging system is powered from a battery-backed source and would remain available to provide the initial emergency declaration and direction announcement to the plant staff.	
		4.2.1.2 - If the plant-paging system is powered from a battery-backed source, then no further action is required in this area.	
		4.2.1.3 - If portions of the plant-paging system are not powered from a battery-backed source, then reasonable alternate methods should exist to provide emergency notification to plant staff in the areas that would not receive an announcement. These methods should be capable of notifying essentially 100% of the plant staff within approximately 30 minutes	

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page)	None unless the emergency plan is changed to include the plant paging system. Changes are addressed under NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.
	None
	None unless the emergency plan is changed to include the plant paging system or if the power supply to the plant paging system is changed in a way that impacts capabilities assumed in the assessment. Changes are addressed in the evaluation of NEI 12- 01 Section 4.1.6.2, Phase 2 Assessment.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
10 CFR 50.155(c)(4)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 (B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.2.1.4 - If the plant-paging system is not powered from a battery-backed source, then perform some combination of the following actions: 1. Provide a battery-backed power source for all portions of the plant-paging system 2. Establish reasonable alternate methods as needed to provide emergency notification to the plant staff. These methods should be capable of notifying essentially 100% of the plant staff within approximately 30 minutes.	(continued from previous Page Statements of Consideration)
10 CFR 50.155(e) (continued from previous page)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.3 - Communications Equipment at ORO Facilities Some communications capability should be available at the ORO facilities that normally receive licensee notifications of an emergency declaration or a Protective Action Recommendation (as described in the site emergency plan). Through discussions with ORO and other appropriate personnel, identify the communications equipment that would remain operable during an extended loss-of-grid event. This determination should be made consistent with the assumptions listed in Section 2.	

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
<p>10 CFR 50.155(c)(4)</p> <p>10 CFR 50.155(e) (continued from previous page)</p>	<p>10 CFR 50.54(f) letter, Enclosure 5</p> <p>Communications Assessment Actions 1, 2 and 3</p> <p>B.5.b Phase 1 Guidance Letter Dated 2/25/2005</p> <p>NUREG 0800 Section 19.4</p>	<p>4.4 - Notification of the Emergency Response Organization (ERO)</p> <p>To promote timely staff augmentation by the ERO, licensees should verify the following:</p> <p>ERO members can be notified of the emergency using a method that would be operable under the assumed event conditions (e.g., satellite pagers), AND/OR</p> <p>ERO members are trained to automatically respond to their assigned facilities or a designated staging area when made aware of an area wide loss-of-grid (e.g., by direct observation, media reports, word-of-mouth, etc.).</p> <p>The information developed from this section should be included in the licensee response described in Action #4 of Table 1.1.</p>	<p>(continued from previous Page Statements of Consideration)</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page Interpretation)	None unless changes are made to the communications capabilities, training or procedures that impacts the capability to notify the Emergency Response Organization during an area wide loss of grid. Changes are addressed in the evaluation of NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
10 CFR 50.155(c)(4) 10 CFR 50.155(e) (continued from previous page)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.5 - Equipment Location Requirements To be assumed operable, a piece of on-site communications equipment should be in a location, and maintained in a manner, that maximizes survivability following a beyond design basis external event. In particular, the location or manner should reasonably preclude wetting from flooding or impact damage from a seismic event. The equipment itself does not need to be seismically qualified. Equipment should be stored, or otherwise available, in locations that can be readily accessed when needed. To the degree practical, consider potential constraints to equipment access or movement when When selecting storage locations, consider criteria presented in regulatory and industry guidance applicable to equipment associated with NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (e.g., FLEX equipment). The above guidance applies to equipment at the point of use (e.g., a radio) as well as any supporting infrastructure components. Such components may include portable power sources, and radio system repeaters and antennas.	(continued from previous Page Statements of Consideration)

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page Interpretation)	<p>None unless changes are made to communications equipment storage locations for communications equipment needed to support 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact communication capabilities required by the respective strategy. Changes are addressed in the evaluation of NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.</p> <p>Licensees should review site specific NRC SERs for EDMGs when evaluating what constitutes a “change” in communication storage locations supporting (b)(3) strategies.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
<p>10 CFR 50.155(c)(4)</p> <p>10 CFR 50.155(e) (continued from previous page)</p>	<p>10 CFR 50.54(f) letter, Enclosure 5</p> <p>Communications Assessment Actions 1, 2 and 3</p> <p>B.5.b Phase 1 Guidance Letter Dated 2/25/2005</p> <p>NUREG 0800 Section 19.4</p>	<p>4.6 - Performance Characteristics</p> <p>The assessment should confirm that the systems and equipment identified for usage will support communications among and between:</p> <p>Licensee emergency response facilities, including Security</p> <p>Field/offsite monitoring teams and the location controlling deployment of the teams (e.g., the EOF)</p> <p>The Shift Communicator, Key TSC and EOF Communicators, and the ORO contact points.</p> <p>ENS and HPN communicators and the NRC staff.</p> <p>On-site and in-plant teams and the location controlling deployment of the teams (e.g., the OSC)</p> <p>The assessment should also verify that a radio system(s) used by ERO personnel possesses the necessary design and operating characteristics to adequately support</p> <p>Expected reliance upon “multi-use” equipment should be minimized. This means that communications equipment used to implement emergency response functions should not be relied upon to simultaneously support other functions (e.g., Security). In cases where multiple-usage is unavoidable, the assessment should consider the capability of the equipment to effectively perform under the expected conditions and the need for specific multi-use protocols.</p>	<p>(continued from previous Page Statements of Consideration)</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page)	<p>None unless changes are made to communications equipment performance characteristics for communications equipment needed to support 10 CFR 50.155(b)(1) through (b)(3) mitigation strategies that impact communication capabilities required by the respective strategy. Changes are addressed under NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.</p> <p>Licenses should review site specific NRC SERs for EDMGs when evaluating what constitutes a “change” in communication performance characteristics supporting (b)(3) strategies.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
10 CFR 50.155(c)(4) 10 CFR 50.155(e) (continued from previous page)	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	4.7 - Other Assessment Considerations A portable backup AC power source for communications systems and components may be credited as operable provided that it is consistent with the assumptions and requirements discussed above, including location requirements. The assessment should consider the amount of power source fuel available on-site (e.g., available fuel will support the expected run time). For battery-operated equipment, there should be a sufficient number of on-site and charged batteries to support operation of required equipment. This number should be determined with consideration given to the following items. A sufficient number of charged batteries should be available at the start of an event to support performance of the required emergency response functions listed in Section 4.1, Required Emergency Communications Capabilities. Use the vendor's stated minimum reliable operability period for a fully-charged battery. This information may be modified if supported by a documented basis.	(continued from previous Page Statements of Consideration)

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
<p>These additional assessment considerations are only applicable to communications capabilities supporting (b)(1) and (b)(2). Considerations for communications capabilities supporting (b)(3) are contained in NUREG 0800 Section 19.4 Acceptance Criteria Item 12 and the B.5.b Guidance Letter dated 2/25/2005, Items B.1.i and B.2.b.</p>	<p>None unless changes to communications capability requires an assessment of the modified capability. If an assessment is required, these considerations should be considered. Addressed in the evaluation of NEI 12-01 Section 4.1.6.2, Phase 2 Assessment.</p> <p>Licenses should review site specific NRC SERs for EDMGs when evaluating what constitutes a “change” in communication assessment considerations such as power supplies, quantity of batteries and radios and functionality duration for fully charged batteries supporting (b)(3) strategies.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
<p>10 CFR 50.155(c)(4)</p> <p>10 CFR 50.155(e)</p> <p>Continued from previous page</p>	<p>10 CFR 50.54(f) letter, Enclosure 5</p> <p>Communications Assessment Actions 1, 2 and 3 (continued from the previous page)</p> <p>B.5.b Phase 1 Guidance Letter Dated 2/25/2005</p> <p>NUREG 0800 Section 19.4</p>	<p>4.7, Continued from the previous page:</p> <p>The availability of on-site battery charging capability. Credit may be given to power source(s) and battery charging equipment consistent with the assumptions and requirements discussed above, including location requirements.</p> <p>Delivery of replacement batteries may be assumed to occur any time after T + 24 hours. The assessment should consider whether the batteries are delivered in a charged or uncharged state, and if uncharged, the time required for on-site charging.</p> <p>Manual actions taken by emergency responders to facilitate the use of a particular means of communication may be credited provided that these actions are described in a response procedure or guideline. For example, radio communication relay zones may be employed if a procedure or guideline provides direction on where personnel need to be located and their equipment. The personnel necessary to implement these manual methods should be considered when determining required response staffing.</p> <p>A licensee should coordinate with the Institute of Nuclear Power Operations (INPO) to identify communications equipment that may be obtained from industry sources and consider methods for making this information readily available to emergency managers.</p>	<p>(continued from previous Page Statements of Consideration)</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page Interpretation)	(continued from previous page Gap Assessment / Recommended Action)

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
<p>10 CFR 50.155(c)(4)</p> <p>10 CFR 50.155(e)</p> <p>Continued from previous page</p>	<p>10 CFR 50.54(f) letter, Enclosure 5</p> <p>Communications Assessment Actions 1, 2 and 3</p> <p>B.5.b Phase 1 Guidance Letter Dated 2/25/2005</p> <p>NUREG 0800 Section 19.4</p>	<p>4.8 - Quality and Maintenance-Related Requirements</p> <p>Communications equipment, and related power sources and infrastructure, may be purchased and installed under the site requirements normally applied to other EP equipment. It is desirable that the equipment to be commonly available (e.g. commercial equipment) such that parts and replacements can be readily obtained.</p> <p>Programmatic controls should be applied to all communications-related equipment to ensure availability and reliability, including the performance of periodic inventory checks and operability testing.</p> <p>Supporting contracts with vendors should be periodically verified.</p> <p>The guidance contained in INPO 10-007, Equipment Important to Emergency Response, should be reviewed for applicability.</p> <p>4.9 - National Communications System (NCS) Services</p> <p>To enhance overall communications capabilities, each licensee should verify that they have arrangements in place to utilize the services offered by the NCS to the degree possible. These services include access to the Government Emergency Telecommunications Service (GETS), the Telecommunications Service Priority (TSP) program and the Wireless Priority Service (WPS). Information concerning these services may be obtained from their web site - http://www.ncs.gov/</p>	<p>(continued from previous Page Statements of Consideration)</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
<p>(continued from previous page)</p> <p>The National Communications System (NCS) and the associated website www.ncs.gov were disbanded by Executive Order 13618 on July 6, 2012. The guidance in NEI 12-01 states that licensees are to verify that they have arrangements in place to utilize the services offered by the NCS to the degree possible. Information related to communications services provided through NCS may be obtained on the Department of Homeland Security website https://www.dhs.gov/office-emergency-communications under the Response Support section of the web page.</p> <p>Services that were provided through NCSS include access to:</p> <ul style="list-style-type: none"> • Government Emergency Telecommunications Service (GETS) • Telecommunications Service Priority (TSP) • Wireless Priority Service (WPS) 	<p>Verify that communications equipment procurement specifications or purchasing documents are consistent with requirements normally applied to other EP equipment and should be commonly available, commercial grade with readily available parts and replacement.</p> <p>Verify that communications equipment necessary to implement 10 CFR 50.155(c)(4) or to implement 10 CFR 50.155(b)(3) strategies in support of (b)(1) and (b)(2) strategies is included in inventory checklists and is periodically verified functional with periodic maintenance tasks and frequencies defined.</p> <p>Verify communications equipment necessary to support (b)(3) is included in inventory checklists and is periodically verified functional with periodic maintenance tasks and frequencies defined.</p> <p>Verify that communications equipment contracts with vendors supporting communications equipment necessary to implement 10 CFR 50.155(c)(4) are maintained current and periodically verified.</p> <p>Verify agreements with communications providers of Emergency Services (e.g., satellite phone service) are maintained current and periodically verified.</p> <p>Verify agreements with communications service providers that enable access to Government Emergency Telecommunications Service (GETS), the Telecommunications Service Priority (TSP) programs and the Wireless Priority Service (WPS) are maintained current and periodically verified. Information related to these services may be obtained from https://www.dhs.gov/office-emergency-communications, under the Response Support section of the web page. Note that the National Communications Service (NCS) referenced in NEI 12-01 was disbanded by Executive Order 13618 on July 6, 2012 and the cited website is no longer functional.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 12-01 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER			
10 CFR 50.155(c)(4) 10 CFR 50.155(e) Continued from previous page	10 CFR 50.54(f) letter, Enclosure 5 Communications Assessment Actions 1, 2 and 3 B.5.b Phase 1 Guidance Letter Dated 2/25/2005 NUREG 0800 Section 19.4	<p>4.10 - Communications Provider Emergency Services</p> <p>To enhance overall communications capabilities, each licensee should verify that they have arrangements in place to utilize the emergency services offered by their communications service provider(s) to the degree possible. As one example, see services offered by Verizon - http://www.verizonbusiness.com/Products/communications/emergency/</p> <hr/> <p>4.11 - Personnel Training</p> <p>Response personnel should receive periodic training on the location and use of communications systems and equipment.</p>	(continued from previous page Statements of Consideration)
NOTES:			

Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER	
(continued from previous page Interpretation)	Verify agreements with communications providers of Emergency Services (e.g., satellite phone service) are maintained current and periodically verified.
	There are no direct training requirements associated with communications equipment defined in 10 CFR 50.155. However, to the extent that the deployment and use of communications equipment is necessary to successfully implement the strategies required by 10 CFR 50.155(b)(1) through (b)(3), training on communications location, deployment and use should be considered under 10 CFR 50.155(d).
NOTES:	

9 NEI 13-06 COMPARISON

Introduction

To assist in implementing 10 CFR 50.155, a gap assessment of NEI 13-06, Revision 1 has been performed. That process involved preparing a matrix to facilitate review of the following references to assess potential gaps that a licensee may encounter during implementation of 10 CFR 50.155 and identify the recommended actions to close those gaps .

NRC RG 1.228 "Integrated Response Capabilities for Beyond Design Basis Events" identifies methods and procedures the NRC considers acceptable for compliance with 10 CFR 50.155 "Mitigation of Beyond-Design-Basis Events." The staff position is that *NEI 13-06 provides an acceptable method for enhancing the on-site emergency response capabilities for beyond-design-basis events through training, drills or exercises, and facilities and equipment to support a multi-unit event response.* The NRC position does not include any exceptions or clarifications.

It is important to note that Revision 1 of NEI 13-06 was drafted based on an early version of the proposed 10CFR50.155 rule. As such, some sections of NEI 13-06 address proposed requirements of the early rule draft that do not exist in the final version. In particular, both the Multi Source Term Dose Assessment capability (MSTDA) and Severe Accident Mitigation Guideline (SAMG) requirements were removed from the draft final rule language. These capabilities have been implemented through the licensee Regulatory Commitment process,(i.e. process described in NEI 99-04) and are managed according to that process.

It should also be noted that NEI 12-06 has been revised since the publication of NEI 13-06. Changes to 12-06 have made some of the discussion in the Executive summary of 13-06 obsolete. Specifically, the sentence in the Executive Summary that quotes from NEI 12-06, Section 11.6, "*Where appropriate, the integrated FLEX drills should be organized on a team or crew basis and conducted periodically; with all time-sensitive actions to be evaluated over a period of not more than eight years.*" This quote is no longer accurate, as it was removed in Revision 4 of 12-06. NEI 12-06 now refers back to 13-06 for guidance related to drills, noting that *Industry guidance for conducting FLEX drills is provided in NEI 13-06.*

Summary of GAP Assessment/Recommended Actions

The recommended actions identified by the gap assessment review are provided in the "Gap Assessment / Recommended Action" column of the matrix and are summarized below.

1. To meet the 13-06 guidance a site must have the capability to predict offsite doses (including dose from multiple source terms) during an event involving an extended loss of all AC power affecting all onsite units. Previously, the commitment to perform this did not require the assumption of an extended loss of AC power. Even though not required by the rule, licensee regulatory commitments include the capability to predict dose from multiple source terms.
2. An ERO role identified as "Ultimate Decision Maker" is defined. This individual is assigned authority and responsibility for providing overall direction on the implementation of EOPs, FSGs, EDMGs and SAMGs for a unit or set of units.
3. On an eight (8) year frequency, sites must conduct drills demonstrating BDB strategies (including communications capabilities), including;
 - a. A drill that demonstrates the integrated use of FLEX strategies under the control of an Abnormal Operating Procedure (AOP) or Emergency Operating Procedure (EOP), as appropriate to the postulated scenario.

- b. A drill that demonstrates the transition from a controlling AOP, EOP or Extensive Damage Mitigation Guidelines (EDMG) into Severe Accident Management Guidelines (SAMGs), and the selection of appropriate severe accident management strategies. Even though not required by the rule, licensee regulatory commitments include SAMGs to be integrated with the EOP network.
- c. A drill that demonstrates the use of EDMG strategies.
- d. A drill or drills to demonstrate the capability to utilize equipment necessary to implement each strategy for responding to a beyond design basis event or severe accident.

It is important to note that while it is acceptable to use an EP exercise to accomplish the new drill requirements, it is recommended that exercises not be used to meet these requirements. Graded exercises serve a specific purpose to meet the regulatory required emergency planning requirements. Combining BDB drills with a graded exercise could lead to confusion and conflicts that interfere with objectives of either or both of the activities.

User Notes

Due to the large size of this matrix, it has been formatted to extend across two adjacent facing pages

Users performing gap assessments for implementation of 10 CFR 50.155 should consider the following guidance when performing their gap assessments:

- Information in the NEI 13-06 Section Guidance column of the matrix is only a summary of the guidance from the indicated section. Users are encouraged to refer to the specific section of NEI 13-06 for a full understanding of the fully stated guidance.
- The matrix follows the outline of NEI 13-06. An explanation of the information in each column of the matrix follows:
 - 10 CFR 50.155 Section – Sections of the rule that are applicable to the guidance in the section of NEI 13-06 being addressed.
 - Other Requirement or Guidance - Other documents that relate to the guidance in the section of NEI 13-06 being addressed.
 - Section Guidance – A general description or outline of the information provided in the section of NEI 13-06 being addressed.
 - Statements of Consideration – Provides the Statements of Consideration (SOC) section number and title when a SOC passage provides information relevant to the section of NEI 13-06 being addressed. In addition, a page reference is sometimes provided to indicate where the discussion on the specific subject can be found.
 - Interpretation – Background or further explanation of the guidance in NEI 13-06.
 - Proposed Action - Captures any generic actions being undertaken by the industry to address the item or recommends actions that should be taken by a utility.

Also see Section 3.0, General Matrix Usage, for general usage information.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 1 INTRODUCTION			
(a)(1)	NA	1.1 SCOPE AND PURPOSE OF NEI 13-06	V.C "Applicability", pg. 60 V.C "EDMGs" pg. 79 VI "Paragraph 50.155(a) "Applicability"", pg. 111
SECTION 2 MULTI-UNIT DOSE ASSESSMENT			
NA	MSTDA Commitment ⁽¹⁾	2.1 APPLICABLE ASPECTS OF NRC NTTF REPORT RECOMMENDATIONS 2.1.1 Recommendation 9 2.2 RELATED REFERENCE DOCUMENTS 2.3 RECOMMENDED ACTIONS 2.3.1 Industry Performance Standard for Multi-Unit Dose Assessment Current release from all units/release points Computerized Alternate methods if normal data sources unavailable May develop backup methods (e.g. manual) May require backup power or capabilities at location away from site Review with ORO agencies	SECTION 2 MULTI-UNIT DOSE ASSESSMENT IV.E "Multiple Source Term Dose Assessment", pg. 28

Interpretation	Gap Assessment / Recommended Action
SECTION 1 INTRODUCTION	
None	None
SECTION 2 MULTI-UNIT DOSE ASSESSMENT	
<p>Section IV Public Comment and Changes to the Rule provides the NRC response to comments and the draft rule.</p> <p>This requirement was removed from the final language as the NRC concluded that there is not sufficient risk associated with events that challenge multiple source terms to find that substantial additional protection to public health and safety could be achieved through the imposition of the subject requirements</p>	<p>All sites should have Multi Source Term Dose Assessment (MSTDA) capability in place as a result of the industry-wide commitment. Controls to ensure this capability is maintained are typically managed through the Site commitment management program.</p> <p>Section 2.3.1 of 13-06 states that the capability should be available to support responses during events both within and beyond the plant design basis. In particular, the capability should exist to project offsite doses during an extended loss of AC power affecting all onsite units. There exists a potential gap in that not all licensees provide this capability as part of their implementation of the multi-source term dose assessment commitment. This may require the addition of backup power to onsite dose assessment computing platforms or ensuring the availability of computing platforms away for the site.</p> <p>Specific actions include;</p> <ol style="list-style-type: none"> 1) Maintain MSTDA Commitment consistent with Licensee specific letter, and 2 confirm capability to project offsite doses during an extended loss of AC power (ELAP)

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 2 MULTI-UNIT DOSE ASSESSMENT			
NA	MSTDA Commitment ⁽¹⁾	<p>2.3.2 Emergency Classification and Protective Action Recommendations</p> <p>Results should be assessed in accordance with the licensee’s existing emergency classification scheme and Protective Action Recommendation (PAR) decision-making process.</p> <p>Verify that the capability exists to issue a PAR for areas beyond the (EPZ) boundary</p> <p>Address the following points in procedure or guideline that implements the multi-unit dose assessment capability.</p> <ul style="list-style-type: none"> • Projected doses should be compared against EALs to determine if a change in the emergency classification is warranted. • Projected doses should be compared against appropriate decision-making criteria to determine if a change in PARs is warranted. 	Continued from previous page
		<p>2.3.3 Training</p> <p>Training on MSTDA is to be per the SAT process</p>	None
		<p>2.3.4 Performance Enhancing Experience</p> <p>Periodic opportunities for a performance enhancing experience should be provided to personnel responsible for performing multi source term dose assessment</p>	None

Interpretation	Gap Assessment / Recommended Action
SECTION 2 MULTI-UNIT DOSE ASSESSMENT	
Continued from previous page	Continued from previous page
<p>Training on new requirements should be performed per the SAT process. However, per 3.3.1 and the SOC, elements already covered under other NRC regulations can be addressed in a non-SAT training program that is acceptable for meeting that specific regulatory requirement (e.g., 10 CFR part 50, appendix E, section IV.F)</p>	None
None	None

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
NA	MSTDA Commitment (1)	<p>2.3.5 Quality and Maintenance-Related Requirements</p> <p>Programmatic equipment/software controls such as periodic inventory and testing</p> <p>2.3.6 Considerations for Program Documents</p> <p>Capability described in a controlled document, but not necessarily in E plan</p>	None
SECTION 3 TRAINING			
NA	NA	<p>3.1 APPLICABLE ASPECTS OF NRC NTTF REPORT RECOMMENDATIONS</p> <p>Background information - no requirements</p> <p>3.1.1 Recommendation 4</p> <p>3.1.2 Recommendation 8</p> <p>3.1.2 Recommendation 8</p> <p>3.1.3 Recommendation 9</p> <p>3.2 RELATED REFERENCE DOCUMENTS</p> <p>3.3 RECOMMENDED ACTIONS</p>	V.C "Final Rule Regulatory Bases", pg. 93
(d) [Rule does not extend to SAMG training(2)]	NA	<p>3.3.1 BDB Event Response Training</p> <p>Broad discussion of training expectations. Applies to FSG, EDMG, SAMG</p>	
(d)	NA	<p>3.3.2 Plant-Referenced Simulator</p> <p>Update simulator to reflect new equipment</p> <p>Increasing the capability of the simulator to model a beyond design basis event or severe accident is not required</p>	None

Interpretation	Gap Assessment / Recommended Action
None	The NEI BDB Program Manual template is intended to be the location to place the required material.
SECTION 3 TRAINING	
<p>The SOC recognizes that training exists for elements of the rule that have already been implemented. The SOC explains that the SAT process be used for any "newly identified training requirements supporting the effective use of the strategies and guidelines that are required by this rule".</p>	<p>Training on new requirements identified during the implementation of the MBDBE rule are required to be performed per the SAT process.</p> <p>However, elements already covered under other NRC regulations can be addressed in a non-SAT training program that is acceptable for meeting that specific regulatory requirement (e.g., 10 CFR part 50, appendix E, section IV.F)</p>
<p>11.6 of NEI 12-06 states; "ANSI/ANS 3.5, Nuclear Power Plant Simulators for use in Operator Training" certification of simulator fidelity (if used) is considered to be sufficient for the initial stages of the beyond-design-basis external event scenario until the current capability of the simulator model is exceeded. Full scope simulator models will not be upgraded to accommodate FLEX training or drills."</p>	<p>As noted in the interpretation column, full scope simulators are not required to be upgraded to accommodate FLEX training or drills. As such, there should be no gap to address within simulator capabilities.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 3 TRAINING			
(d)	NA	3.3.3 Ultimate Decision-Maker Qualifications 1) UDM is to provide overall direction on implementation of EOPs, FSGs, EDMGs, and SAMGs 2) Requirements should ensure that each UDM-qualified individual has sufficient technical understanding and leadership ability to make timely and informed decisions during a beyond design basis event or severe accident. 3) Qualification and Training will be required	None
		3.3.4 Training Development Guidance from Regulatory Responses Training programs should also address training-related actions described in response to Order EA-12-049 and 50.54(f) responses	None
		3.3.5 Considerations for Program Documents T&Q for severe accident/BDB event should be described in a controlled document. Does not need to be described in Emergency Plan.	None
SECTION 4 EP FACILITIES AND EQUIPMENT			
NA	NA	4.1 APPLICABLE ASPECTS OF NRC NTTF REPORT RECOMMENDATIONS	None
		4.1.1 Recommendation 4	
		4.1.2 Recommendation 9	
		4.2 RELATED REFERENCE DOCUMENTS	

Interpretation	Gap Assessment / Recommended Action
SECTION 3 TRAINING	
<p>Draft Reg Guide 1.228 notes that the UDM is part of the Command and Control Structure required under §50.155(b)(6)</p>	<p>The function of the Ultimate Decision Maker (UDM) is defined in NEI 14-01. This is function and will require new training to be developed per the SAT process. It is expected that most sites will incorporate the UDM role into an existing ERO position.</p>
None	None
None	<p>If not already created, the BDB training program needs to be described in a controlled document.</p>
SECTION 4 EP FACILITIES AND EQUIPMENT	
<p>As used here, EP facilities and equipment refers to those facilities in which ERO members would perform their assigned functions during a Beyond Design Basis event response, and the necessary equipment located therein. It does not include the systems, structures, components or portable equipment used to implement accident mitigating or management strategies described in Abnormal/Emergency Operating Procedures, or FLEX Support, Severe Accident Management or Extensive Damage Mitigation Guidelines.</p>	None

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 4 EP FACILITIES AND EQUIPMENT			
(c)(4)	NA	4.3 RECOMMENDED ACTIONS	V.C "Final Rule Regulatory Bases, Onsite and offsite communications capability", pg. 101
		4.3.1 Industry Performance Standard for EP Facilities and Equipment Implement facility and equipment enhancements identified in 50.54(f) responses For EP facility and equipment enhancements not addressed by the requirements or guidance discussed above, the following approaches are recommended. <ul style="list-style-type: none"> • Determine applicable design and configuration control measures. • Items may be procured and installed under the commercial and site requirements normally applied to EP facilities and equipment. • For multi-unit sites, ensure that sufficient quantities of radiation protection equipment and supplies are, or can be made, available to support protracted operation of an expanded Emergency Response Organization (ERO). • Programmatic controls should be developed to ensure the availability and reliability of EP facilities and equipment, including the performance of periodic inventory checks, functionality testing and maintenance. • Supporting contracts with vendors should be periodically verified. 	VI "Paragraph 50.155(c) "Equipment"", pg. 125
		4.3.2 Considerations for Program Documents Facilities and equipment should be described in a controlled document. Does not need to be described in Emergency Plan.	None

Interpretation	Gap Assessment / Recommended Action
SECTION 4 EP FACILITIES AND EQUIPMENT	
<p>Communication capability enhancements made by licensees in response to the § 50.54(f) request do not need to meet the design capabilities for the communications system required by Part 50, Appendix E or testing frequencies described for primary and backup onsite and offsite communications systems.</p> <p>Unless a licensee has implemented communications systems enhancements as a part of their emergency plans, because enhancements in response to the § 50.54(f) assessment are intended as back up capabilities to the emergency plan communications capabilities, it is not necessary for the enhanced communications capabilities to meet the 15 minute notification requirement applicable to emergency plan communications capabilities.</p>	<p>Licensees have made these enhancement consistent with their responses to the 50.54(f) letter, including responses to the NRC Generic Technical Issues letter issued on January 23, 2013 (ML13010A162).</p> <p>This section provides guidance on any additional facility enhancements not addressed by the site 50.54(f) response.</p> <p>Maintain enhancements made to EP facilities and equipment in response to the § .54(f) letter consistent with the site commitment management program.</p>
None	The NEI BDB Program Manual template provides a format that can be used to document this information

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
NA	NA	5.1 APPLICABLE ASPECTS OF NRC NTF REPORT RECOMMENDATIONS	V.C. "Drills or exercises", Pg. 95
		5.1.1 Recommendation 4	VI. "Paragraph 50.155(e) "Drills or exercises"", pg 127
		5.1.2 Recommendation 8	VI. "10 CFR Part 50 Appendix E, Section IV, Training", pg. 137
		5.1.3 Recommendation 9	
		5.2 RELATED REFERENCE DOCUMENTS	
(e) [NOTE: Rule does not extend to SAMG drills(2)]	NA	5.3 RECOMMENDED ACTIONS	
		5.3.1 Industry Performance Standards for BDB Event Response Drills 1) A drill that demonstrates the integrated use of FLEX strategies under the control of an Abnormal Operating Procedure (AOP) or Emergency Operating Procedure (EOP), as appropriate to the postulated scenario. 2) A drill that demonstrates the transition from a controlling AOP, EOP or Extensive Damage Mitigation Guidelines (EDMG) into Severe Accident Management Guidelines (SAMGs), and the selection of appropriate severe accident management strategies. (note that this is not a regulatory requirement but instead is voluntary) 3) A drill that demonstrates the use of EDMG strategies. 4) A drill or drills to demonstrate the capability to utilize equipment necessary to implement strategies for responding to a beyond design basis event or severe accident.	

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
<p>Additional information is contained in Section VI. Section-by-Section Analysis, under § 50.155(e), "Drills or exercises "The SOC notes that the drills or exercises satisfy the SAT element for evaluations and revision of the training based on the performance of trained personnel in the job setting found in § 55.4.</p>	<p>While Section 5 of NEI 13-06 is titled Drills and Exercises, it is important to note that the Rule language is Drills or Exercises. Graded EP Exercises should not be used to meet these requirements.</p> <p>It is expected that for most sites Section 5 describes all new material that will need to be developed and implemented.</p> <p>The rule requires drills or exercises that demonstrate;</p> <p>1) 50.155(b)(1) [FLEX], OR 50.155(b)(2) [Reevaluated Flood or Seismic hazard], AND 2) 50.155(b)(3) [EDMG]</p>
<p>None</p>	<p>Sections 5.3.1 through 5.3.3 contain general guidance for all BDB drills or exercises.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e) [NOTE: Rule does not extend to SAMG drills(2)]	NA	<p>5.3.2 Common BDB Event Response Drill Attributes</p> <p>This section contains elements of the drills that are common to all the DBD drills.</p>	<p>V.C. "Drills or exercises", Pg. 95</p> <p>VI. "Paragraph 50.155(e) "Drills or exercises"", pg 127</p> <p>VI. "10CFR Part 50 Appendix E, Section IV, Training", pg. 137</p>
(e)	NA	<p>5.3.3 Use of a Plant-Referenced Simulator during BDB Event Response Drills</p> <p>Drills should utilize the capabilities of the plant-referenced simulator(s) to the degree practicable</p> <p>In cases where the postulated drill scenario events exceed the limits of the simulator model, or such limits would be exceeded soon after the drill is commenced, the simulator should not be used.</p> <p>For a multiple-unit site with one plant-referenced simulator, the simulator may be used during a drill and the resulting data taken as representative of all onsite units if consistent with the postulated scenario conditions (i.e., the postulated events affect all onsite units in a similar manner).</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
None	Sections 5.3.1 through 5.3.3 contain general guidance for all BDB drills or exercises.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	5.3.4 Drill Demonstrating Integrated Use of FLEX Strategies Under the Control of an AOP or EOP	V.C. "Drills or exercises", Pg. 95 VI. "Paragraph 50.155(e) "Drills or exercises"", pg 127
		5.3.4.1 Organizations and facilities <ul style="list-style-type: none"> • A simulated Control Room for all on-site units. • The primary EOF or alternate EOF, if the use of the facility is anticipated during the response to the postulated event. • An offsite facility to which the onsite ERO would report during the period when the site is inaccessible, if the use of the facility is anticipated during the response to the postulated event. • Offsite Response Organizations (OROs) should be invited to participate; however, their participation is not required. • The National SAFER Response Center should be invited to participate; however, actual delivery of equipment is not required. 	VI. "10CFR Part 50 Appendix E, Section IV, Training", pg. 137

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
<p>The drill or exercise requirement extends to strategies and guidelines developed in response to the reevaluated seismic and or flooding hazard, as required by 50.155(b)(2).</p> <p>Licensees that comply with 50.155(b)(2) by developing event-specific approaches that rely on normal operating procedures or AOPs such as severe weather preparation procedures that are used routinely, would generally not treat these approaches as strategies and guidelines for the purposes of the drill requirements and would use the strategies and guidelines developed to comply with 50.155(b)(1) instead in their drills or exercises.</p> <p>Conversely, licensees that comply with 50.155(b)(2) by developing targeted or scenario specific mitigation strategies, possibly including unconventional measures, would be expected to demonstrate these event-specific approaches under the drill requirements.</p>	<p>This section contains specific guidance on performing FLEX drills or exercises. These drills or exercises are required by the rule per 50.155 €</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	<p data-bbox="565 352 922 382">5.3.4.2 Scope and extent-of-play</p> <p data-bbox="516 422 922 516">Drill Manager should consider the following items when developing the drill.</p> <ul data-bbox="516 562 958 1482" style="list-style-type: none"> <li data-bbox="516 562 958 625">• “Drill” means a performance enhancing experience <li data-bbox="516 632 958 726">• Control Room players should process through the operating procedures and guidelines <li data-bbox="516 732 958 827">• The drill duration need not exceed the assumed time necessary for augmented ERO personnel to access the site. <li data-bbox="516 833 958 907">• The arrival times of response personnel should reasonably reflect the scenario. <li data-bbox="516 913 958 1037">• Sufficient time should be allowed for the ERO to assume command and control of the event response from the Shift Manager. <li data-bbox="516 1104 958 1241">• Drill players should use the communications systems and equipment that would be employed during an actual response to the postulated event. <li data-bbox="516 1247 958 1310">• A control cell should be established for non-participating organizations. <li data-bbox="516 1316 958 1482">• Appropriate personnel at ERO facilities should demonstrate requesting and coordinate the delivery of NSRC equipment. Activation of the NSRC is not required. 	Continued from previous page

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
Continued from previous page	Continued from previous page

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	5.3.4.3 Scenario and implementation <ul style="list-style-type: none"> • Determine the strategies and guidelines to be demonstrated during the drill. • The initiating event should occur during minimum on-shift staffing. • The drill should be initiated by a beyond design basis event that results in an extended loss of AC power (ELAP) simultaneously affecting all onsite units. • The scenario conditions should be generally consistent with the assumptions listed in NEI 13-06 and NEI 12-06. • Controllers should identify any instances where assignments/deployments exceed to the number of available individuals • The scenario need not include failure of portable equipment. • The drill scenario need not include a radiological release. • The scenario may assume that requested response assistance provided by OROs and other offsite resource providers (e.g., corporate support) is available within reasonably expected timeframes. 	Continued from previous page
Rule does not extend to SAMG(2)	NA	5.3.5 Drill Demonstrating the Transition from a Controlling AOP, EOP or EDMG into SAMGs	None

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
Continued from previous page	Continued from previous page
SAMGs are not included in the final rule language. As such, there is no regulatory requirement to conduct a SAMG drill	None

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
Rule does not extend to SAMG(2)	NA	<p>5.3.5.1 Organizations and facilities</p> <ul style="list-style-type: none"> • A simulated Control Room for all on-site units. • The emergency response facilities with personnel with responsibility for evaluation of SAMG strategies and related decision-making. • Offsite Response Organizations (OROs) should be invited to participate; however, their participation is not required. • Participation by the NSRC is not required. 	None
		<p>5.3.5.2 Scope and extent-of-play</p> <ul style="list-style-type: none"> • "Drill" means a performance enhancing experience during which participant performance is assessed against a certain standard. • Control Room players should process through the procedures and guidelines that would be used to respond to the postulated event. • The drill should demonstrate the ability of the ERO decision-maker to assume command and control from the Shift Manager. • Drill players should use the communications systems and equipment that would be employed during an actual response to the postulated event. • A control cell should be established for non-participating organizations. • The drill should facilitate demonstration of the evaluation and decision-making for at least two SAMG strategies. 	None

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
SAMGs are not included in the final rule language. As such, there is no regulatory requirement to conduct a SAMG drill	None
SAMGs are not included in the final rule language. As such, there is no regulatory requirement to conduct a SAMG drill.	None

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
Rule does not extend to SAMG(2)	NA	<p>5.3.5.3 Scenario and implementation</p> <ul style="list-style-type: none"> • The drill initial conditions should reflect the occurrence of an event that results in fuel damage, and driving entry into SAMGs for at least one unit. • All ERO facilities may be assumed to be activated. • The scenario may assume that requested response assistance provided by OROs and other offsite resource providers (e.g., corporate support) is available within reasonably expected timeframes. 	None
(e)	NA	<p>5.3.6 Drill Demonstrating the Use of EDMG Strategies</p> <p>5.3.6.1 Organizations and facilities</p> <ul style="list-style-type: none"> • Appropriate on-shift personnel should be selected based on whether or not the drill scenario assumes that the control room command and control structure remains available. <ul style="list-style-type: none"> o If available, establish a simulated Control Room for all on-site units. o If not available, personnel should be those expected to respond to an event involving a loss of large areas of the plant due to explosions or fire, and causing a loss of the normal on-shift command and control structure. • On-site facilities that would be expected to be available. • Offsite Response Organizations (OROs) should be invited to participate; however, their participation is not required. • Participation by the NSRC is not required. 	<p>V.C. "Drills or exercises", Pg. 95</p> <p>VI. "Paragraph 50.155(e) "Drills or exercises"", pg 127</p> <p>VI. "10CFR Part 50 Appendix E, Section IV, Training", pg. 137</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
<p>SAMGs are not included in the final rule language. As such, there is no regulatory requirement to conduct a SAMG drill.</p>	<p>None</p>
<p>V.C Final Rule Regulatory Bases addresses drills or exercises in the section titled Drills or Exercises.</p> <p>The SOC notes that the drills or exercises satisfy the SAT element for evaluations and revision of the training based on the performance of trained personnel in the job setting found in § 55.4.</p> <p>The rule specifically requires drills or exercises that demonstrate § 50.155(b)(3) [EDMG]</p> <p>Section VI. Section-by-Section Analysis, provides additional information under § 50.155(e), "Drills or exercises" starting on page 127.</p>	<p>This section provides specific guidance on the elements that should be included in an EDMG scenario drill or exercise.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	<p>5.3.6.2 Scope and extent-of-play</p> <ul style="list-style-type: none"> • Drill means a performance enhancing experience. • Operators and other appropriate players should process through the operating procedures that would be used to respond to the postulated event. • The arrival times of response personnel should be consistent with those described in the site emergency plan. • Sufficient drill time should be allowed for the appropriate augmented ERO position to demonstrate the ability to assume command and control. • Drill players should use the communications systems and equipment that would be employed during an actual response to the postulated event. • A control cell should be established for non-participating organizations. • The drill should demonstrate the evaluation and decision-making for at least two extensive damage mitigating strategies. 	Continued from previous page

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
Continued from previous page	Continued from previous page

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	<p>5.3.6.3 Scenario and implementation</p> <ul style="list-style-type: none"> • The start time should occur during a period of minimum on-shift staffing. • The drill should be initiated by an event involving a loss of large areas of the plant due to explosions or fire. • Controllers should track the assignment/deployment of on-shift personnel, and promptly identify any instances where such assignments/deployments exceed to the number of available individuals. • The scenario need not include failure of portable equipment. • The drill scenario need not include a radiological release. • The scenario may assume that requested response assistance provided by OROs and other offsite resource providers (e.g., corporate support) is available within reasonably expected timeframes. 	Continued from previous page
		<p>5.3.7 Drills Demonstrating the Use of Strategy-Related Equipment</p>	V.C. "Drills or exercises", Pg. 95
		<p>5.3.7.1 Equipment capability demonstration</p> <p>For each FSGs, SAMGs and EDMG strategy, the capability to utilize the key equipment necessary for performing an implementing method should be periodically demonstrated.</p>	<p>VI. "Paragraph 50.155(e) "Drills or exercises"", pg. 127</p> <p>VI. "10CFR Part 50 Appendix E, Section IV, Training", pg. 137</p>

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
Continued from previous page	Continued from previous page
None	<p>This involves the demonstration of the capability to use utilize key equipment necessary for the implementation of FLEX, EDMG, and SAMG. This includes both installed equipment, portable equipment, and debris removal equipment. Each of these must be demonstrated through a drill or out-of-sequence activity every 8 years.</p> <p>The deployment of on-shift personnel must not exceed the number of available personnel.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	<p>5.3.7.2 Installed equipment demonstration</p> <p>The capability to implement a strategy using installed plant equipment may be demonstrated during a drill or as an out-of-sequence activity. The licensee may include an out-of-sequence demonstration within the scope of another scheduled activity. Actual manipulation or operation of equipment is not required.</p>	<p>V.C. "Drills or exercises", Pg. 95</p> <p>VI. "Paragraph 50.155(e) "Drills or exercises"", pg. 127</p> <p>VI. "10CFR Part 50 Appendix E, Section IV, Training", pg. 137</p>
		<p>5.3.7.3 Portable equipment demonstration</p> <p>The capability to implement a strategy using portable equipment may be demonstrated during a drill or as an out-of-sequence activity. The licensee may include an out-of-sequence demonstration within the scope of another scheduled activity. Actual connection/hookup or operation of equipment is not required.</p>	
		<p>5.3.7.4 Overlapping strategies</p> <p>If the same (or essentially the same) strategy is described in two or more guideline sets, then the capability to implement that strategy need be demonstrated only once over a given 8-year period.</p>	
		<p>5.3.7.5 Debris removal equipment</p> <p>The capability to mobilize equipment used for debris removal may be demonstrated during a drill or as an out-of-sequence activity. Demonstration credit may also be given for performance during an actual event (e.g., the same equipment is used to clear site roads following a heavy snowfall).</p>	

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
None	<p>This involves the demonstration of the capability to use utilize key equipment necessary for the implementation of FLEX, EDMG, and SAMG. This includes both installed equipment, portable equipment, and debris removal equipment. Each of these must be demonstrated through a drill or out-of-sequence activity every 8 years.</p> <p>The deployment of on-shift personnel must not exceed the number of available personnel.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 13-06 Section Guidance	Statements of Consideration (ADAMS Accession No. ML16292A026)
SECTION 5 DRILLS AND EXERCISES			
(e)	NA	<p>5.3.7.6 Staffing assumptions</p> <p>For a mitigating strategy expected to be implemented within the assumed elapsed time necessary for ERO personnel to access the site, the following guideline should be considered.</p> <ul style="list-style-type: none"> • The number of individuals performing the demonstration should be consistent with the number expected to be available during a real event; this number may be determined from a staffing assessment. 	Continued from previous page
		<p>5.3.8 BDB Event Response Drill Objectives</p> <p>Appendix A, BDB Event Response Drill Objectives, presents generic drill objectives</p>	None
		<p>5.3.9 Considerations for Program Documents</p> <p>The drills conducted to demonstrate responses to a beyond design basis event or severe accident need not be described in the site emergency plan; however, these activities should be described in a document maintained through a fleet or site document control</p>	None

Notes: (1) In mid-2013 each site submitted a Commitment to the NRC for multi-source dose assessment capability. These Commitments were in response to a letter from Joseph E. Pollock (NEI) to James T. Wiggins (NRC) on January 28, 2013, and clarified in a letter dated March 14, 2013. Licensees should review the language of their specific commitment letter. (2) SAMG requirements have been removed from the rule language.

Interpretation	Gap Assessment / Recommended Action
SECTION 5 DRILLS AND EXERCISES	
Continued from previous page	Continued from previous page
None	Utilize Appendix A when developing site specific BDB drill objectives.
None	The NEI BDB Program Manual template is intended to be the location to place the required material.

10 NEI 14-01 ICOMPARISON

Introduction

An assessment of NEI 14-01, Revision 1 guidance against the requirements in 10 CFR 50.155 was performed to assist in implementing the new rule. The assessment involved preparing a matrix to facilitate review of the following references to assess potential gaps that a licensee may encounter during implementation of 10 CFR

50.155 and identify the recommended actions to close those gaps:

- 10 CFR 50.155 sections applicable to Beyond Design Basis (BDB) event integrated response capabilities including the applicable portions of the associated statements of consideration.
- NEI 14-01 Revision 1, Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents.
- Other NRC requirements or guidance supporting the development of NEI 14-01 Revision 1 as listed in the “Other Requirement or Guidance” column of the gap assessment matrix.

The new rule limits the scope of the integrated response capability to the strategies, guidelines, and alternative approaches under § 50.155(b).

During the development of the rule, other guideline sets were considered for inclusion within the integrated response capability. The guideline sets considered included fire response procedures, alarm response procedures, and abnormal operating procedures (AOPs). These guideline sets are not included in the final rule. In keeping with the basis for a functional integration of the strategies and guidelines with EOPs, 10 CFR 50.155 requires that the § 50.155(b) strategies, guidelines, and alternative approaches be integrated “with the Emergency Operating Procedures (EOPs).” The rule language is intended to communicate the NRC’s expectation that the EOPs retain their role as the primary means of directing emergency operations and that the strategies and guidelines that are required under this rule are integrated with EOPs to support their implementation.

NEI 14-01 provides guidance for ensuring that EOPs, EDMGs, FSGs and SAMGs are integrated in a cohesive, effective and usable manner. It also addresses recommendations for the development of mitigation and management guidelines, and command and control structures, for responding to beyond design basis events and severe accidents.

As a result of the rulemaking the PWR Owner’s Group in conjunction with the BWR Owner’s Group developed a project plan to provide high level guidance to the industry. There are two major tasks of the project:

- Revise Procedure Usage Standard for Response to Plant Transients
- Develop Beyond Design Basis Events Guideline Standard

Based upon the timeline associated with the project plan the guidance should be available for implementation when the rule becomes effective.

Summary of Major Gap Assessments / Recommended Actions

The recommended actions identified by the gap assessment review are provided in the “GAP Assessment / Recommended Action” column of the matrix and are summarized below.

- Verify Severe Accident Management Guidelines (SAMGs) are revised and maintained in accordance to the new Owners Group guidance by the utility commitment date in the letter sent to the NRC.

- Integrate the appropriate guidelines (FSGs, EDMGs) with the EOPs in accordance with the revised Owner's Group guidance. Provide the necessary training of any new tasks on the procedure integration using the SAT process.
- Designate a member of the Emergency Response Organization (ERO) as the Ultimate Decision Maker (UDM). Provide the necessary training required for the position to ERO personnel designated.

The Owners' Group guidance mentioned in the bullets above was prepared by the PWROG and BWROG in support of NEI 14-01 and implementation of 10 CFR 50.155. The tasks and guidance undertaken by the Owners' Groups are summarized below. Contact your PWROG and BWROG representatives to determine the status of this work and to obtain copies of the documents described.

PWROG Tasks

Task 1: Revise Procedure Usage Standard for Response to Plant Transients

This task reviews and revises "Procedure Usage Standard for Response to Plant Transients" developed under PA-OSC-295 to address certain requirements of 10 CFR 50.155 associated with integrated procedure response capabilities.

This task includes the following subtasks:

1. Describe usage differences between procedures and guidelines
2. Describe usage requirements for beyond design basis guidelines
3. Describe parallel usage requirements for the following:
 - a. Emergency Operating Procedures
 - b. Abnormal Operating Procedures
 - c. Severe Accident Management Guidelines
 - d. FLEX Support Guidelines
 - e. Extensive Damage Mitigation Guidelines
 - f. Targeted Hazard Mitigation Strategies for a BDB Hazard (e.g., special response measures for an extraordinary flooding or seismic event)
4. Provide discussion for prioritization of concurrent events (including a fire). Provide prioritization considerations to be used by the Ultimate Decision Maker during BDB Hazard.

Task 2: Develop Beyond Design Basis Events Guideline Standard

This task develops a generic standard for addressing certain requirements of 10 CFR 50.155 with regards to integration of beyond design basis event mitigation guidance. This standard should not require the same degree of documentation and rigor as design basis procedures; however, it may provide a vehicle for detailing the history associated with development of various BDBE mitigation programs, integration of the programs and maintenance of the integrated program required by 10 CFR 50.155.

This task includes the following subtasks:

1. Documentation requirements for deviations from generic industry BDBE mitigation guidance
2. Development, Verification and Validation, and Maintenance of:
 - a. Severe Accident Management Guidelines
 - b. Flex Support Guidelines
 - c. Extensive Damage Mitigation Guidelines
 - d. Targeted Hazard Mitigation Strategies for a BDB Hazard (e.g., special response measures for an extraordinary flooding or seismic event)
 - e. User aid associated with SAMG/FSG/EDMG (or other BDBE guidelines which may combine the requirements of SAMG/FSG/EDMG to the extent possible)

3. Describe framework for integration of mitigation strategies for transient procedures and BDBE guidelines (assume multiple events)
4. Describe documentation requirements for deviations from generic industry BDBE mitigation guidance.

BWROG Tasks

Task 1: Revise BWROG Emergency Procedure Guideline/Severe Accident Guideline documents and/or develop standalone guidance documents to address certain requirements of 10 CFR 50.155 associated with integrated procedure response capabilities.

This task includes the following subtasks:

1. Describe usage differences between procedures and guidelines
2. Describe usage requirements for beyond design basis guidelines
3. Describe parallel usage requirements for the following:
 - a. Emergency Operating Procedures
 - b. Abnormal Operating Procedures
 - c. Severe Accident Management Guidelines
 - d. Flex Support Guidelines
 - e. Extensive Damage Mitigation Guidelines
 - f. Targeted Hazard Mitigation Strategies for a BDB Hazard (e.g., special response measures for an extraordinary flooding or seismic event)
5. Provide discussion for prioritization of concurrent events (including a fire). Provide prioritization considerations that will be used to by the Ultimate Decision Maker during BDB Hazard.

Task 2: Revise BWROG Emergency Procedure Guideline/Severe Accident Guideline documents and/or develop standalone guidance documents to address certain requirements of 10 CFR 50.155 with regards to integration of beyond design basis event mitigation guidance.

This task includes the following subtasks:

1. Documentation requirements for deviations from generic Owners' Group guidance
2. Development, Verification and Validation, and Maintenance of:
 - a. Severe Accident Management Guidelines
 - b. Flex Support Guidelines
 - c. Extensive Damage Mitigation Guidelines
 - d. Targeted Hazard Mitigation Strategies for a BDB Hazard (e.g., special response measures for an extraordinary flooding or seismic event)
 - e. User aid associated with SAMG/FSG/EDMG (or other BDBE guidelines which may combine the requirements of SAMG/FSG/EDMG to the extent possible)
5. Describe framework for integration of mitigation strategies for transient procedures and BDBE guidelines (assume multiple events)
6. Describe documentation requirements for deviations from generic industry BDBE mitigation guidance.

Task 3: Revise BWROG Emergency Procedure Guideline/Severe Accident Guideline documents and/or develop standalone guidance documents to address certain requirements of 10 CFR 50.155 with regards to integration of beyond design basis event mitigation guidance.

This task includes the following subtasks:

1. Programmatic Control Document guidance
2. SAMG Validation scenario set

User's Notes

The matrix follows the outline of NEI 14-01. Due to the large size of this matrix, it has been formatted to extend across two adjacent facing pages. An explanation of the information in each column of the matrix follows:

- 10 CFR 50.155 Section – Sections of the rule that are applicable to the guidance in the section of NEI 14-01 being addressed.
- Other Requirement or Guidance - Other documents that relate to the guidance in the section of NEI 14-01 being addressed.
- Section Guidance – A general description or outline of the information provided in the section of NEI 14-01 being addressed.
- Statements of Consideration – Provides the Statements of Consideration (SOC) section number and title when a SOC passage provides information relevant to the section of NEI 14-01 being addressed. In addition, a page reference is sometimes provided to indicate where the discussion on the specific subject can be found.
- Interpretation – Background or further explanation of the guidance in NEI 14-01.
- Proposed Action - Captures any generic actions being undertaken by the industry to address the item or recommends actions that should be taken by a utility.

ALSO SEE SECTION 3.0, GENERAL MATRIX USAGE, FOR GENERAL USAGE INFORMATION.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 1 INTRODUCTION		
b(4)	RG1.228	1. INTRODUCTION Background information - no requirements
SECTION 2 PROCEDURE INTEGRATION		
b(4)	RG1.228 Individual site commitment letter based on NEI Letter dated 10/26/15 Project #689	2. PROCEDURE INTEGRATION 2.1 Overview 2.2 Procedures and Guidelines
		2.3 Emergency Response Procedure and Guideline Sets Background information - no requirements
		2.4 Integration of Procedure and Guideline Sets Each licensee’s emergency response procedure and guideline sets should address the following considerations: <ul style="list-style-type: none"> • A programmatic control document describing the framework for integration of mitigation and management strategies in response to a beyond design basis event or severe accident should be developed and maintained. The site-specific framework should consider the generic technical guidance provided by the appropriate Owners Group. Deviations from the generic technical guidance should be documented along with the supporting rationale. • Strategies should be available to address potential or actual fuel damaging conditions present in the reactor core or the spent fuel pool. 2.4 Integration of Procedure and Guideline Sets Each licensee’s emergency response procedure and guideline sets should address the following considerations: <ul style="list-style-type: none"> • A programmatic control document describing the framework for integration of mitigation and management strategies in response to a beyond design basis event or severe accident should be developed and maintained. The site-specific framework should consider the generic technical guidance provided by the appropriate Owners Group. Deviations from the generic technical guidance should be documented along with the supporting rationale. • Strategies should be available to address potential or actual fuel damaging conditions present in the reactor core or the spent fuel pool.

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 1 INTRODUCTION		
None	None	None
SECTION 2 PROCEDURE INTEGRATION		
None	None	Ensure that you understand the context and cautions for applying the guidance.
V.C - Integrated Response Capability Pages 66-84	<p>Each utility to develop an overall integration strategy for their different guidelines that meets the intent of the rule.</p> <p>Though not included in the final rule SAMGs are required to be integrated with the EOP network.</p>	Use the guidelines developed by the respective Owner's Group to achieve the procedural integration required by the rule.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 2 PROCEDURE INTEGRATION		
b(4)	RG-1.228	<p>2.4 Integration of Procedure and Guideline Sets (continued)</p> <ul style="list-style-type: none"> • Strategies should be reviewed to identify potential gaps or inconsistencies. • Each strategy should be included within a controlling procedure or guideline. Where appropriate, expectations concerning parallel processing of procedures and/or guidelines should be described. • Criteria such as plant conditions and parameters that require a transition from one controlling procedure or guideline to another should be clearly identified. • Criteria for implementing the actions described in a supporting procedure or guideline should be clearly identified in the controlling procedure or guideline. • Strategies should be available to address a beyond design basis event or severe accident occurring during any mode of operation, consistent with the associated NRC staff-endorsed guidance. The degree to which a controlling procedure may or may not be fully applicable during some plant operating modes should be considered. • Strategies should be available to address an event involving a loss of large areas of the plant due to explosions or fire, including the possible loss of the Control Room command and control structure, consistent with the associated NRC staff-endorsed guidance in NEI 06-12. The degree to which a controlling procedure may or may not be fully applicable during some plant operating modes should be considered. • Integration of EDMGs should reflect site-specific commitments made in response to NRC security orders. • Integration of FSGs should reflect site-specific commitments related to NRC Order EA-12-049.
		<p>2.5 Coordination with Fire Response Strategies</p> <ul style="list-style-type: none"> • While recognizing that concurrent events such as a fire could occur during a beyond design basis event and severe accident, it is not possible to predict resulting strategy impacts in any reliable/certain manner beforehand. • For this reason, programmatic documents, and/or procedures and guidelines, should provide direction for selecting the appropriate strategy at the time of the emergency.

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 2 PROCEDURE INTEGRATION		
V.C - Integrated Response Capability Pages 66-84	Each utility to develop an overall integration strategy for their different guidelines that meets the intent of the rule.	Use the guidelines developed by the respective Owner's Group to achieve the procedural integration required by the rule.
V.B - Guideline Sets Excluded From Final Rule p. 59	None	<ul style="list-style-type: none"> • Follow guidance from Owners Group on fire response strategy • Provide UDM training on selecting the appropriate strategy for the given situation.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 3		
	Individual site commitment letter (dated 12/15) based on NEI Letter dated 10/26/15 Project #689 NRC IP 71111, ATT. 18 ROP	<p>3.1 Overview Background information - no requirements</p> <hr/> <p>3.2.1 Development of Generic Severe Accident Management Guidance Background information - no requirements.</p> <hr/> <p>3.2.2 Principles for SAMGs The following principles should be applied to the development and implementation of SAMGs:</p> <ul style="list-style-type: none"> • Site-specific strategies and implementing methods should be based upon existing plant systems, structures and components, and available portable equipment. Modifications to the plant design are permitted but not required. • Any plant system, structure or component, and available portable equipment, may be used to implement an accident management strategy, irrespective of safety classification or other design-related criteria. In addition, the normally-applied controls on the use or configuration of a plant system, structure or component may be altered if necessary to implement a strategy (e.g., establishing a system lineup not described in the facility licensing basis). • The inclusion of a plant system, structure or component within a severe accident management strategy implementing method does not impose any additional design or maintenance-related requirements on that item (i.e., beyond those associated with the existing specifications and programs). For example, the design-basis safety classification of a plant system, structure or component – safety-related, important to safety, etc. – is not changed because of its employment within a strategy implementing method. • Strategies should reflect a best-estimate understanding of accident progression and consequences. • SAMG entry conditions and operator actions should be symptom-based and clearly linked to specific plant parameters. Identification of the initiating event should not be required in order to determine which strategy should be implemented. • The best possible operational guidance should be specified to restore and maintain key plant parameters within limits which define controlled and stable plant conditions, irrespective of licensing or design basis assumptions or commitments.

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 3		
<p>V.B - Severe Accident Management Guideline and Multiple Source Term Dose Assessment p.56</p>	<p>None</p>	<p>Sites to maintain SAMGs in accordance with their individual commitment letters to the NRC.</p> <p>Reference NEI letter to the NRC.</p> <p>Individual site commitment letter based on NEI Letter dated 10/26/15 Project #689</p> <p>Licensee's should reference NEI 14-01 SAMG requirements into their SAMG Program document.</p>

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 3		
	<p>Individual site commitment letter (dated 12/15) based on NEI Letter dated 10/26/15 Project #689</p> <p>NRC IP 71111, ATT. 18</p> <p>ROP</p>	<p>3.2.2 Principles for SAMGs (continued)</p> <ul style="list-style-type: none"> • Operator actions and decision-making criteria (e.g., a parameter value or trend that prompts a given action) should be determined using best-estimate assumptions and calculations, irrespective of licensing or design basis analytical assumptions and calculations. • The capability to assess decision-making criteria (e.g., a parameter value or trend that prompts a given action) should accommodate the use of any available indications. Potential uncertainties in instrumentation readings caused by anticipated severe accident environmental conditions should be considered during the development of decision-making criteria. • SAMG strategies may employ implementing methods or capabilities described in FLEX Support Guidelines (FSGs) or Extensive Damage Mitigation Guidelines (EDMGs). • Computational aides should be provided when direct diagnosis of key plant conditions cannot be determined solely from instrumentation. <hr/> <p>3.2.3 Considerations for Site-Specific SAMGs</p> <p>3.2.3.1 Document Development</p> <ul style="list-style-type: none"> • Site-specific severe accident management strategies, and associated implementing guidance, should be based on the generic technical guideline documents developed by the applicable Owners Group.
	<p>Industry Commitment</p>	<p>3.2.3.2 Document Verification & Validation</p> <ul style="list-style-type: none"> • Guidelines for responding to a severe accident should be verified and validated in accordance with an applicable fleet or site procedure development process. • Verification and validation processes should assess the technical accuracy and adequacy of the instructions, and the ability of personnel to follow and implement them. • Guidelines should be verified and validated using existing plant capabilities. Increasing the capability of the plant-referenced simulator to specifically model the conditions of the reactor core or stored spent fuel during a beyond design basis event or severe accident is not required. • The verification and validation process should accommodate the differences between non-severe and severe accident conditions. • Due to the unbounded nature of severe accident sequences and potential resulting conditions, a limited number of scenarios should be developed for the SAMG validation process (i.e., a sample group). <hr/> <p>3.2.3.3 Document Updating & Maintenance</p> <ul style="list-style-type: none"> • Review, revision, approval, distribution and placement of SAMGs should be performed in accordance with the appropriate fleet or site document control process. • A revision to the applicable generic severe accident technical guidelines should be assessed and implemented within 2 refueling outages or 3 years of the publication date, whichever is greater. <hr/> <p>3.2.3.4 User Aids</p> <ul style="list-style-type: none"> • The development, verification and validation of user aids should be consistent with applicable fleet and/or site policies.

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 3		
V.B - Severe Accident Management Guideline and Multiple Source Term Dose Assessment p.56	None	Sites to maintain SAMGs in accordance with their individual commitment letters to the NRC. Reference NEI letter to the NRC.
None	None	Sites to maintain SAMGs in accordance with their individual commitment letters to the NRC. Reference NEI letter to the NRC.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 3		
	Industry Commitment	3.2.3.5 Priority Setting for Document Changes <ul style="list-style-type: none"> Each licensee should update the condition screening and evaluation requirements described in their corrective action program(s) as needed to promote the appropriate prioritization of corrective actions associated with severe accident management response capabilities.
b(1)	RG 1.228	3.3 Flex Support Guidelines (FSGs) <ul style="list-style-type: none"> The development, verification, validation and maintenance of FSGs should be performed in accordance with each licensee's procedure/guideline development processes, and the guidance provided in NEI 12-06.
b(3)	RG 1.228	3.4 Extensive Damage Mitigation Guidelines <ul style="list-style-type: none"> The development, verification, validation and maintenance of EDMGs should be performed in accordance with each licensee's procedure/guideline development processes, and the guidance provided in NEI 06-12.
SECTION 4 COMMAND AND CONTROL		
b(5) b(6)		4. Command and Control
		4.1 Overview Background information - no requirements
		4.2 Command and Control Key Functions <ul style="list-style-type: none"> Command and control structures should clearly identify the Emergency Response Organization (ERO) position(s) with the ultimate authority for making decisions necessary for the implementation of emergency response procedures and guidelines during a beyond design basis event or severe accident. The position with this authority is referred to as the Ultimate Decision-Maker (UDM). The position(s) assigned the UDM function should have the authority and capability of performing the following key command and control functions: <ul style="list-style-type: none"> Selection of the procedure or guideline set(s) most appropriate to address the event and/or plant conditions. Determination of the strategy(ies) to be implemented, and the necessary conditions and timing for implementation. Direction of the onsite and offsite resources needed to implement the selected strategy(ies). Direction of an action not contained in, or contrary to, procedures or guidelines, if it is determined that the action will provide greater protection of public health and safety. Interface with the ERO position holding overall command and control authority within the site ERO (and fleet-level ERO, if applicable), if the two authorities are held by different positions. The qualifications for an UDM are discussed in NEI 13-06, Enhancements to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents.

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 3		
None	None	Sites to maintain SAMGs in accordance with their individual commitment letters to the NRC. Reference letter to the NRC.
See discussion above.	None	Implement Owner's Group guidance.
V.C - EDMGs P.79	None	Depending upon the site-specific commitment, implement guidance in NEI 06-12 R2 or R3 for EDMG development. Individual Licensees should determine which version is applicable.
SECTION 4 COMMAND AND CONTROL		
V.C - Command and Control Page 85	None	Modify existing ERO structure to support implementation of the BDBEE criteria (i.e., assign the UDM function and associated qualification requirement to the appropriate ERO position). Revise ERO and other procedures as needed to reflect the UDM assignment.

10CFR 50.155 Section	Other Requirement or Guidance	NEI 14-01 Section Guidance
SECTION 4 COMMAND AND CONTROL		
b(5) b(6)		<p>4.3 Command and Control Structure Considerations</p> <p>Procedures or guidelines used by the ERO should provide for implementation of command and control structures consistent with the following considerations:</p> <ul style="list-style-type: none"> • The UDM authority and responsibilities should be integrated into ERO command and control structures and protocols. It is not necessary to create a new ERO position or title. • The Shift Manager should serve as the UDM during the implementation of Abnormal Operating Procedures (AOPs) and Emergency Operating Procedures (EOPs). • Following a transition into Severe Accident Management Guidelines (SAMGs), the UDM authority and responsibilities may be retained by the Shift Manager, or transferred to an UDM-qualified individual located in another facility. • Following the transfer of the UDM function to an ERO position-holder located outside the Control Room (e.g., in the TSC), the support staff assisting with strategy evaluation and selection should include at least one member who holds an active SRO license, or has successfully completed an SRO licensing or certification program in the past, applicable to the affected onsite unit(s). • Following an event associated with loss of large areas of the plant due to explosions or fire, and causing a loss of the Control Room command and control structure, a procedure or guideline should describe the position(s) that could assume command and control of the event response. Due to the contingent and short-term nature of this assignment, and the initial focus on implementation of pre-planned EDMG strategies, it is not necessary for this position(s) to hold a UDM qualification. A procedure or guideline should specify how command and control are subsequently transferred to a position which does possess a UDM qualification. • The UDM is able to direct changes to a pre-planned fire response strategy if necessary to support implementation of an accident or event mitigation or management strategy • The UDM assignment(s) should be consistent with the licensee’s staffing assessments performed in accordance with NEI 12-01 • The authorities and responsibilities necessary to coordinate the acquisition and delivery of offsite resources are defined. • At sites operating within a fleet structure, fleet-level command and control capabilities should be integrated into the licensee’s command and control structures if such support will be relied upon during a beyond design basis event or severe accident. • Specific UDM authorities and/or responsibilities that may be delegated, if any, are defined. • Where appropriate, procedures and guidelines should contain guidance concerning the implementation of emergency response actions in accordance with 10 CFR 50.54(x) and the associated approval of such actions in accordance with 10 CFR 50.54(y).

Statements of Consideration (ADAMS Accession No. ML16292A026)	Interpretation	Gap Assessment / Recommended Action
SECTION 4 COMMAND AND CONTROL		
V.C - Command and Control Page 85	None	Assess ERO and other procedures to ensure that all considerations are addressed, or revise as needed.

11 RG 1.226 TO JLD-ISG 1201-01 COMPARISON

Introduction:

RG 1.226 will generally allow use of the same actions used by utilities for compliance with the NRC order EA-12-049.

On December 15, 2016, NRC issued SECY-16-0142, Draft Final Rule – Mitigation of Beyond-Design-Basis Events (RIN 3150-AJ49) to obtain Commission approval to publish a final rule that establishes requirements for nuclear power reactor licenses and applicants. As part of the draft final rule package, a pre-decisional version of Regulatory Guide (RG) 1.226, “Flexible Mitigation Strategies for Beyond-Design-Basis Events” was also issued. RG 1.226 endorses, with clarifications, the methods and procedures promulgated by the Nuclear Energy Institute (NEI) in technical document NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”, Revision 4, as a process the NRC considers acceptable for meeting, in part, the regulations in 10 CFR 50.155. Additionally, RG 1.226 provides guidance in areas that are not covered in NEI 12-06 for meeting 10 CFR 50.155.

On February 8, 2017, NRC issued 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 Events”. JLD-ISG-2012-01 endorses, with exceptions, additions and clarifications, the methodologies described in the industry guidance document, Nuclear Energy Institute (NEI) 12-06, Revision 4 as one acceptable approach for satisfying Order EA-12-049 requirements.

Summary of Major Gap Assessments/Recommended Actions:

Since both NRC guidance documents endorse, with exceptions, additions and clarifications, the same industry guidance document for satisfying essentially the same set of NRC requirements, it would be expected that the endorsements should be consistent, and for the most part they are. The table below summarizes the significant gaps identified in a detailed comparison of RG 1.226 with JLD-ISG-2012-01 Revision 2.

Description of Difference	Impact to Licensees	Recommended Resolution
RG 1.226 endorses NEI 12-06, Revision 4, but its implementation section allows use of other NRC acceptable methods	NEI 12-06 revision 0 and 2 do not include all the provisions included in revision 4 relative to Change Control, MSA and Out of service time. Some plants that responded under licensing conditions for compliance with mitigating strategies actions per NEI 12-06, revision 0 will have to request approval to upgrade to revision 2 or 4.	<p>Best Option: Comply with NEI 12-06 revision 4</p> <p>Alternate Option: Document clearly which sections of which revision the site is complying with and how that is consistent with the remainder of the selected compliance version of NEI 12-06. An example is; JLD-ISG-2012-01 Rev 2 did not take a position on the acceptability of 11.8.3.a.iii for change control.</p>

<p>The ISG recognizes that FLEX equipment may be pre-staged for up to 45 days to reduce the risk of maintenance or outage activities. All other instances of unavailability due to the lack of reasonable protection is limited to 14 days. The</p>	<p>During the ISG public comment period, the NRC Staff requested stakeholder feedback on the allowance of 45 days for reasonable protection. From the comments received, the NRC Staff concluded that the 45 day</p>	<p>Best Option: Utilize NEI-12-06, Revision 4 guidance Alternate Option: Recognize and</p>
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Description of Difference	Impact to Licensees	Recommended Resolution
<p>RG 1.226 discussion on this topic only includes the 14 day allowed outage time with no mention of the exception for 45 days if deployed to reduce the risk of maintenance or outage activities. However, in the NRC Staff's concluding position, the Staff states that Section 11.5.4 provides an acceptable method for controlling unavailability of the equipment to satisfy that element of reasonable protection.</p> <p>Note there is a distinction for deployed equipment for maintenance or outage activities with regard to reasonable protection.</p>	<p>allowance was acceptable with no change required to the ISG because NEI 12-06 Rev 4 already incorporates this guidance. The NRC Staff felt it important enough to differentiate the two separate allowed outage times for reasonable protection of equipment in the ISG, but makes no such distinction in RG 1.226. This may lead to confusion during FLEX inspections.</p>	<p>communicate the difference at the MBDBEE Rulemaking workshop and emphasize that RG 1.226 endorses all of NEI 12-06 Rev 4 Section 11.5.4 which includes the 45 day allowed outage time for equipment protection when used to reduce risk of maintenance or outage activities</p>
<p>Susquehanna Steam Electric Station is included as a separate bullet in the ISG but combined with the bullet for Salem Nuclear Generating Station in RG 1.226</p>	<p>No technical impact. Might be harder for someone to find it when needed.</p>	<p>None</p>
<p>RG 1.226 adds a new Section 7, Coordination with Severe Accident Management Guidelines. Section 7 in the ISG is Section 8 in RG 1.226.</p>	<p>None. This added section endorses, with no exceptions, clarifications or additions, NEI 12-06 Rev 4 Section 3.2.10 and 11.4.</p>	<p>Recognize and communicate the difference at the MBDBEE Rulemaking workshop and emphasize that RG 1.226 endorses NEI 12-06 Rev 4 Section 3.2.10 and 11.4. (reference SRM-COMSECY-15-</p>

User's Notes:

Due to the large size of this matrix, it has been formatted to extend adjacent facing pages.

A detailed and systematic review of the two documents was performed to identify any substantial differences between them. The results of the gap analysis determined that the substantial differences are limited to the first two items documented in the Table above.

The following table contains only the changes identified in the review that might require an evaluation by utilities. The gap analysis showing all the results is not included herein due to its size and expected limited use by our members, but it is available on NEI's Member Website as Addendum 1 to NEI 17-03.

ISG-2012-01 rev 2	RG 1.226
<p>RATIONALE</p> <p>1. Order EA-12-049 requires that licensees shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and SFP cooling capabilities following a beyond-design-basis external event. The three-phase approach described in the order is a conceptual framework built upon the need for a licensee to address challenges to the safety functions when they occur, using installed structures, systems, and components for a coping period until portable mitigating equipment can be used to address those challenges. The finite level of resources on site makes the arrangement of offsite resources necessary to address potential widespread catastrophes, such as the occurrence at Fukushima, where the restoration of offsite power is precluded by damage. Licensees' emergency operating procedures will provide the command and control structure in response to beyond-design-basis external events. Additional guidance documents will be developed for deployment of the FLEX strategies in support of the emergency operating procedures.</p> <p>2. The NRC has previously provided regulatory guidance for the development, implementation, and maintenance of guidance and strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire. This was done through the endorsement of NEI 06-12, "B.5.b Phase 2 & 3 Submittal Guideline," Revision 2, issued December 2006 [Reference 43], for holders of and applicants for operating licenses issued under 10 CFR Part 50, and Revision 3 of NEI 06-12, issued July 2009 [Reference 44], for holders of and applicants for combined licenses under 10 CFR Part 52. This regulatory guidance continues to provide an acceptable means of meeting the requirement to develop, implement, and maintain the necessary guidance and strategies for the subset of beyond-design-basis external events addressed by 10 CFR 50.54(hh)(2).</p>	<p>Reason for Issuance</p> <p>One of the primary lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant was the significance of the challenge presented by a loss of multiple safety-related systems following the occurrence of a BDBEE. In the case of the Fukushima Dai-ichi accident, the loss of all alternating current power led to loss of core cooling, and ultimately to core damage and a loss of containment integrity. The design basis for U.S. nuclear plants includes bounding analyses with margin for external events expected at each site. Extreme external events (e.g., seismic events, external flooding, etc.) beyond those accounted for in the design basis, while unlikely, could present challenges to nuclear power plants. In response to lessons learned from the Fukushima Dai-ichi accident, the NRC promulgated 10 CFR 50.155, "Mitigation of Beyond-Design-Basis Events," to improve the capability of nuclear power plants to address BDBEEs. As one method of addressing the challenges that may be presented by these types of events, this RG endorses, with clarifications as detailed in this RG, the principles and processes in NEI 12-06, Revision 4, as acceptable for use by applicants and licensees to define and deploy strategies that will enhance their ability to cope with conditions resulting from BDBEEs.</p>

RG 1.226 Differences	Impact of Change
<p>1. RG 1.226 changes the reference from EA-12-049 to 10 CFR 50.155,</p> <p>2. Both documents endorse NEI 12-06, revision 4.</p> <p>3. ISG notes that B5b (50.54)(hh)(2) requirements are not contained in the guidance of NEI 12-06. (Note that 50.155 will now incorporate 50.54(hh)(2) within its scope)</p>	<p>1. Regulation documentation change. Editorial, no evaluation needed.</p> <p>2. Each site will need to evaluate NEI 12-06 rev 4 for changes that may be required. Note that ISG-2012-01 allowed for previous revisions of NEI 12-06 to be acceptable means. This remains an option as outlined below in Implementation section.</p> <p>3. Sites should verify that they are in compliance with regulatory guidance pertaining to program currently known as B5b or 50.54(hh)(2). (reference phase I guidance letter of 2/25/2005, NEI 06-12, Revision 2, and SRP 19.4)</p>

ISG-2012-01 rev 2	RG 1.226
<p>RATIONALE (continued)</p> <p>3. The approach described in NEI 12-06, Revision 4, for development, implementation, and maintenance of mitigating strategies for beyond-design-basis external events provides a framework and methodology for such strategies to address those events that are not covered within the requirements of 10 CFR 50.54(hh)(2), subject to the exceptions, additions, and clarifications in the enclosure to this ISG.</p> <p>4. The approach described in NEI 12-06, Revision 4, and its Section H.4.5 for the performance of assessments of the mitigating strategies under the reevaluated seismic and flooding hazards developed in response to the March 12, 2012, 50.54(f) letter provides an appropriate methodology for licensees to address the reevaluated seismic and flooding hazards in a manner that aligns with the proposed mitigation of beyond-design-basis events rulemaking.</p>	<p>Continued from previous page</p>
<p>APPLICABILITY</p> <p>This ISG shall remain in effect until it has been superseded, withdrawn, or incorporated into a regulatory guide or the Standard Review Plan (SRP).</p> <p>GUIDANCE</p> <p>As discussed above, this ISG is applicable to holders of power reactor operating licenses, construction permits, or combined licenses.</p> <p>The NRC staff considers that the development, implementation, and maintenance of strategies and guidance in conformance with the guidelines provided in NEI 12-06, Revision 4, are an acceptable means of meeting the requirements of Order EA-12-049, subject to the exceptions, additions, and clarifications in the enclosure to this ISG. However, NRC endorsement of NEI 12-06, Revision 4, does not imply NRC endorsement of references listed in NEI 12-06, Revision 4.</p>	<p>Applicability</p> <p>This RG applies to applicants and licensees subject to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," and all applicants and licensees for a power reactor combined license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants" (Ref. 3).</p> <p>Applicable Regulations</p> <p>10 CFR 50.155, "Mitigation of Beyond-Design-Basis Events," requires nuclear power reactor licensees to develop, implement, and maintain an integrated response capability that includes strategies and guidelines to mitigate a Beyond-Design-Basis External Event (BDBEE)</p>

RG 1.226 Differences	Impact of Change
Continued from previous page	Continued from previous page
<ol style="list-style-type: none">1. Issuance of the RG will cause the ISG to be withdrawn 3 years after the Rule is in effect.2. ISG endorses NEI 12-06, rev 4. RG-1.226 also endorses rev 4 of NEI 12-06 (but not in this section).	<ol style="list-style-type: none">1. Evaluation will be necessary to ensure compliance with the RG2. Need to understand how order inspections will occur if scheduled after ISG is no longer in effect. The population that could be impacted is small because of the ISG will remain in effect for 3 years after the Rule is effective.

12 RG 1.227 TO JLD-ISG-2012-03 COMPARISON

Introduction:

RG 1.227 will generally allow use of the same actions used by utilities for compliance with NRC order EA-12-051.

On December 15, 2016, NRC issued SECY-16-0142, Draft Final Rule – Mitigation of Beyond-Design-Basis Events (RIN 3150-AJ49) to obtain Commission approval to publish a final rule that establishes requirements for nuclear power reactor licenses and applicants. As part of the draft final rule package, a pre-decisional version of Regulatory Guide (RG) 1.227, “Wide Range Spent Fuel Pool Level Instrumentation” was also issued. RG 1.227 endorses, with clarifications, the methods and procedures promulgated by the Nuclear Energy Institute (NEI) in technical document NEI 12-02, “Industry Guidance for Compliance with NRC Order EA-12-051, ‘To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation’”, Revision 1, as a process the NRC considers acceptable for meeting, in part, the regulations in 10 CFR 50.155. Additionally, RG 1.227 provides guidance in areas that are not covered in NEI 12-02 for meeting 10 CFR 50.155.

On August 29, 2012, NRC issued Interim Staff Guidance (ISG) JLD-ISG-2012-03 Revision 0, “Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation”. JLD-ISG-2012-03 endorses, with exceptions, additions and clarifications, the methodologies described in the industry guidance document, Nuclear Energy Institute (NEI) 12-02, Revision 1 as one acceptable approach for satisfying Order EA-12-051 requirements.

Summary of Major Gap Assessments / Recommended Actions:

Since both NRC guidance documents endorse, with exceptions, additions and clarifications, the same industry guidance document for satisfying essentially the same set of NRC requirements, it would be expected that the endorsements should be consistent, and for the most part they are. A detailed and systematic review of the two NRC documents was performed and the differences are primarily editorial, changing the reference from order EA-12-051 (to be withdrawn) to the rule 10CFR50.155. There is, however, one difference with greater significance.

- The Applicable Regulations section of RG 1.227 explains a 10 CFR 50.155(f) requirement that each licensee provide reliable means to remotely monitor wide range water level for each spent fuel pool at its site until five years have elapsed since all of the fuel within that spent fuel pool was last used in a reactor vessel for power generation. . Paragraph 50.155(f) removes the requirement for operating nuclear power plants to provide wide-range spent fuel pool level monitoring capabilities for spent fuel pools that contain only fuel greater than five years old. This condition typically exists at plants with multiple spent fuel pools that use only one of the pools for freshly discharged fuel. Paragraph 50.155(a)(2)(i) removes the requirement for wide-range spent fuel pool level monitoring capabilities for all spent fuel pools at a nuclear power plant that has permanently ceased operation and removed all fuel from the reactor vessel once the NRC has docketed the appropriate certifications without regard to the age of the fuel in the pools.

User’s Notes:

A detailed and systematic review of the two documents was performed to identify any substantial differences between them. The results of the gap analysis determined that the substantial differences are limited to the item documented above.

The following table contains only the changes identified in the review that might require an evaluation by utilities. The gap analysis showing all the results is not included herein due to its size and expected limited use by our members, but it is available on NEI’s Member Website as Addendum 2 to NEI 17-03.

ISG-2012-03	RG 1.227
<p>APPLICABILITY This ISG shall remain in effect until it has been superseded, withdrawn, or incorporated into a regulatory guide or the standard review plan.</p> <p>GUIDANCE This ISG is applicable to holders of power reactor operating licenses, construction permits, and combined licenses.</p> <p>The NRC staff considers that the methodologies and guidance in conformance with the guidelines provided in NEI 12-02, Revision 1, subject to the clarifications and exceptions in Attachment 1 to this ISG, are an acceptable means of meeting the requirements of Order EA-12-051.</p> <p>NEI 12-02, Revision 1 references other documents, but the NRC’s endorsement of NEI 12-02, Revision 1 in this ISG should not be considered an endorsement of any of the referenced documents.</p>	<p>Applicability This RG applies to applicants and licensees subject to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” and all applicants and licensees for a power reactor combined license under 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants” (Ref. 3).</p> <p>Applicable Regulations 10 CFR 50.155(f) requires each licensee to provide reliable means to remotely monitor wide range water level for each spent fuel pool at its site until five years have elapsed since all of the fuel within that spent fuel pool was last used in a reactor vessel for power generation.</p>

13 REFERENCES

- 13.1 JLD-ISG-2012-01: Compliance with Order EA 12-049, Order Modifying Licenses with Regard to Requirements for Mitigating Strategies for Beyond Design Basis External Events
- 13.2 JLD-ISG-2012-03: Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation
- 13.3 NEI 12-01: Guidance for Assessing Beyond Design Basis Accident Response Staffing and Communication Capabilities
- 13.4 NEI 12-02: Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation."
- 13.5 NEI 12-06: Diverse and Flexible Coping Strategies (FLEX) Implementation Guide
- 13.6 NEI 13-06: Elements to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents
- 13.7 NEI 14-01: Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents
- 13.8 RG 1.226: Flexible Mitigation Strategies for Beyond Design Basis Events
- 13.9 RG 1.227: Wide Range Spent Fuel Pool Level Instrumentation
- 13.10 RG 1.228
- 13.11 Final Rule and Statements of Consideration (MLxxxxxx)