

Update on Tier 1 Activities

Mitigation Strategies Order EA-12-049

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12056A045). The order requires a three-phase approach for mitigating beyond-design-basis external events. The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities. The transition phase requires providing sufficient portable onsite equipment and consumables to maintain or restore these functions until they can be performed with resources external to the site (i.e., offsite). The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely.

As described in the update of August 29, 2012, the NRC staff issued interim staff guidance (ISG) 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" (ADAMS Accession No. ML12229A174). This document assists nuclear power reactor licensees with the identification of measures needed to comply with the requirements of the order. The ISG endorses, with clarifications, the methodologies described in the industry guidance document, Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies Implementation Guide," Revision 0 (ADAMS Accession No. ML12242A378). This industry document outlines one possible approach that can be used by licensees, construction-permit holders, and combined license holders to address the requirements of the order. Both the ISG and NEI 12-06 support implementation of the order by the Commission-directed completion date of December 2016.

By February 28, 2013, all licensees submitted their integrated plans to the NRC (except for Crystal River, Unit 3, because of its plan to permanently cease operations). These integrated plans contain each licensee's site-specific implementation details for meeting the requirements of the order. To accomplish the review of the integrated plans on the desired timeline, the Mitigation Strategies Directorate (MSD) was created on August 12, 2013. Subsequently, on June 15, 2014, MSD and the Japan Lessons Learned Directorate combined to create the Japan Lessons Learned Division (JLD) within the Office of Nuclear Reactor Regulation (NRR).

In their review of mitigation strategies, the NRC staff interacts with industry and other stakeholders to resolve generic concerns and initiated a formal audit process (according to NRR Office Instruction LIC-111, "Regulatory Audits") (ADAMS Accession No. ML082900195) to complete a timely review of licensees' integrated plans. In addition to issuing the associated audit plan (ADAMS Accession No. ML13234A503), staff developed supplemental staff guidance for the review of beyond-design-basis external events (ADAMS Accession No. ML13238A263). Following the audit plan and associated guidance, staff reviewed licensees' integrated plans and issued Interim Staff Evaluations (ISEs) between November 22, 2013, and February 26, 2014, for each licensee about whether their integrated plan, if implemented as described, would provide a reasonable path for compliance with the order. For areas in which

insufficient information was available, open and confirmatory items were identified for the staff to review as the details become available.

After the issuance of the ISEs, the NRC staff began conducting both electronic and onsite audits. The onsite audits are being performed through close engagement with the regions before the compliance date for the first unit at a site. Though the scope and specifics of each review might vary, the purpose of these audits is to review the closeout of the open and confirmatory items identified in the ISEs. In accordance with the requirements of the order, licensees will notify the NRC when full compliance is achieved. Once all units at a site are in compliance, the NRC staff will issue a final safety evaluation (SE) documenting the staff's review of the licensees' last update to their program.

The first operating units are scheduled to comply with the requirements of the order by the Fall 2014. The order established a schedule for all licensees to achieve full compliance within two refueling outages after submittal of the integrated plans (and no later than December 2016). Licensees for nine sites requested, and have been granted, schedule relaxation to allow three refueling outages until compliance. All nine of these licensees will still come into compliance by December 2016. Licensees for an additional six sites have requested, and been granted, schedule relaxation to align with the schedule requirements of Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions" (ADAMS Accession No. ML13130A067). The compliance date for these licensees will extend past December 2016.

The NRC staff plans to conduct post-compliance inspections after all units at a site indicate compliance and an SE is issued for that site. A temporary instruction (TI) has been issued and the first onsite inspection will occur in January 2015 at Watts Bar Nuclear Plant, Units 1 and 2. Additional site inspections will begin at other sites in Summer 2015.

Spent Fuel Pool Instrumentation Order EA-12-051

On March 12, 2012, the NRC issued Order EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation" (ADAMS Accession No. ML12056A044), requiring all U.S. nuclear power plants to install reliable water-level measurement instrumentation in their SFPs. The instrumentation must remotely report at least three distinct water levels: (1) normal level, (2) low level but still high enough to shield workers above the pools from radiation, and (3) a very low level near the top of the spent fuel rods (indicating that more water should be added without delay).

On August 29, 2012, the NRC staff issued its guidance document, ISG JLD-ISG-2012-03, Revision 0, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation" (ADAMS Accession No. ML12221A339). This document provides an acceptable approach for satisfying the requirements of Order EA-12-051. At the end of February 2013, each of the overall integrated plans (OIPs) for the SFP instrumentation order was received.

The NRC staff issued ISEs for all plants affected by this order between September 23, 2013, and December 12, 2013, except for Kewaunee, Crystal River, and San Onofre Nuclear Generating Station (SONGS) because they are in the process of permanently shutting down.

These ISEs included requests for additional information (RAI) with a due date no later than 6 months before the date when full compliance is required.

In March 2014, the NRC staff notified all licensees and construction-permit holders that audits will be conducted on their responses to Order EA-12-051, in accordance with NRR Office Instruction LIC-111, "Regulatory Audits," as discussed above. Licensees for the first affected units are scheduled to complete the required actions by the end of each unit's Fall 2014 refueling outage. As part of the review, the staff completed SFP instrument vendor audits for the three vendors (Westinghouse, AREVA, and MOHR) of this level-measurement technology. The staff's vendor audit reports for the three pilot plants (Watts Bar, McGuire, and D.C. Cook) have been issued. Public meetings were held in November 2013 and February 2014 to solicit industry and public comments regarding staff expectations for RAI responses, the conduct of vendor audits, and the level of detail for information provided to allow the staff to complete its assessments efficiently and effectively. Industry and NRC staff have aligned on expectations and do not anticipate that further RAIs will be necessary to complete the evaluations.

The NRC staff plans to conduct post-compliance inspections after all units at a site indicate that they are in compliance and an SE is issued for that site. A TI has been issued and the first onsite inspection will occur in January 2015 at Watts Bar Nuclear Plant, Units 1 and 2. Additional site inspections will begin at other sites in Summer 2015.

Reliable Hardened Containment Vents for Boiling Water Reactors (BWRs) with Mark I and II Designs (Order EA-12-050 and Order EA-13-109)

The NRC issued Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," on March 12, 2012 (ADAMS Accession No. ML12054A696), requiring all operating BWRs in the U.S. with Mark I and Mark II containments to install a reliable hardened vent. After issuing the order, additional NRC evaluations examined the benefits of venting after reactor core damage occurs. SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems" (ADAMS Accession No. ML12345A030), was submitted to the Commission on November 26, 2012. In the staff requirements memorandum (SRM) for SECY-12-0157 on March 19, 2013 (ADAMS Accession No. ML13078A017), the staff was directed to require licensees with Mark I and Mark II containments to "upgrade or replace the reliable hardened vents required by Order EA-12-050 with a containment venting system designed and installed to remain functional during severe accident conditions." On June 6, 2013, the staff issued the modified Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions" (ADAMS Accession No. ML13130A067), to ensure that those vents will remain functional in the conditions following reactor core damage.

The revised order contains two distinct phases of implementation. Phase 1, which all licensees are required to implement by June 2018, requires licensees to upgrade the venting capabilities from the containment wetwell to provide reliable hardened vents to assist in preventing core damage and also to remain functional during severe accident conditions. Phase 2, which all licensees are required to implement by June 2019, requires licensees to: (a) provide additional protections for severe accident conditions through installation of a reliable severe-accident-capable drywell vent system, or (b) develop a reliable containment venting

strategy that makes it unlikely to need to vent from the containment drywell during severe accident conditions, and (c) submit an OIP by December 31, 2015.

Since the issuance of the revised order, the NRC staff issued the ISG for Phase 1 of Order EA-13-109 on November 14, 2013. The ISG endorses, with exceptions and clarifications, the methodologies described in NEI 13-02, Rev. 0, "Industry Guidance for Compliance with Order EA-13-109." All applicable licensees submitted an OIP for NRC review on or before June 30, 2014, which included a description of how compliance with Phase 1 requirements will be achieved. The staff is currently reviewing the Phase 1 OIPs and conducting audits of licensee progress towards compliance with Phase 1 of Order EA-13-109. By June 30, 2015, the staff plans to issue ISEs to all applicable licensees documenting open and confirmatory items associated with implementation of the Phase 1 OIPs. In lieu of a Phase 1 OIP, the Oyster Creek Nuclear Generating Station submitted a request for an extension to comply with Order EA-13-109 on June 2, 2014. The staff is currently evaluating the extension request.

The Phase 2 portion of Order EA-13-109 builds on the Phase 1 activities, and also takes advantage of studies related to the development of a regulatory basis for the accident management, containment protection, and release reduction rulemaking. The NRC staff plans to issue the ISG for Phase 2 by April 30, 2015. Licensees are required to submit their OIPs for Phase 2 by December 31, 2015.

Containment Protection and Release Reduction Rulemaking

After issuing Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," on March 12, 2012, additional NRC evaluations examined the benefits of venting after reactor core damage occurs. SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems," was submitted to the Commission on November 26, 2012. In the SRM for SECY-12-0157, dated March 19, 2013, the Commission directed the NRC staff to develop the regulatory basis and proceed with a rulemaking for filtering strategies with drywell filtration and severe accident management of BWRs with Mark I and Mark II containments. The Commission directed the staff to provide to the Commission the regulatory basis for the rulemaking on March 19, 2014; the proposed rule and draft staff guidance on March 19, 2015; and the final rule and guidance on March 19, 2017.

Since the issuance of the SRM for SECY-12-0157, the NRC staff has held several public meetings to discuss the Commission's decision and the regulatory basis for the rulemaking. The public meetings included interaction with the public on potential performance measures, probabilistic risk assessments (PRAs), and accident-progression event trees for the regulatory basis.

Technical activities that support the development of regulatory basis for rulemaking include the following five components. These technical activities are: (1) development of core damage event tree and accident progression event tree as front-end PRA to identify and select risk-dominant accident sequences; (2) accident progression and source term analyses of selected accident sequences using MELCOR; (3) consequence analysis, based on MELCOR source terms using MACCS; (4) risk assessment based on MACCS consequence results and PRA; and (5) regulatory analysis and backfit analysis using risk assessment results. The first three steps have been completed and the last two steps are continuing. Also, sensitivity analyses are in progress as is the documentation of the completed work.

In August 2014, NRC staff briefed the Advisory Committee on Reactor Safeguards Joint Subcommittee on Reliability and PRA and Fukushima on the methodology and status of the rulemaking.

The regulatory basis and proposed rule dates were previously extended by 9 months. The NRC staff requested and has received Executive Director for Operations approval for extension of the rulemaking dates as shown below. Commission action on the requested extension is pending. The staff continues to work through normal rulemaking activities and will keep the Commission apprised of any challenges that could impact the schedule.

- (1) Regulatory basis: From March 12, 2014, to September 12, 2015;
- (2) Proposed rule and draft staff guidance: From March 5, 2015, to September 4, 2016; and
- (3) Final rule: From March 3, 2017, to December 12, 2017.

The NRC staff continues to work with a Division Director Steering Committee to guide this activity. This is a normal step taken for complex rulemakings, done in accordance with agency rulemaking procedures. The working group and Division Director Steering Committee will keep senior management informed of progress on this activity.

Seismic Hazard Walkdowns

On March 12, 2012, the NRC staff issued a request for information (50.54(f) letter) requesting that licensees of U.S. nuclear power plants perform a detailed inspection, or walkdown, of their currently installed seismic-protection and -mitigation features. The industry developed—and the NRC endorsed—Electric Power Research Institute 025286, “Seismic Walkdown Guidance,” to conduct these walkdowns. All plants had to ensure that the features met current licensing-basis requirements and had to identify, correct, and report any degraded conditions. The walkdowns were completed and reports were submitted to the NRC staff by November 2012. NRC resident inspectors used TI-2515/188, “Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns,” to independently verify, using a sampling process, that each licensee’s seismic walkdown activities were conducted using the walkdown methodology endorsed by the NRC. Resident inspectors completed the inspection requirements set forth in TI-2515/188 concurrently with the licensee’s walkdown activities and documented the inspection results in their quarterly reports.

If the licensees discovered deficiencies during their walkdowns, the issues were entered in the licensee’s corrective-action program. These corrective actions are being followed up by the NRC resident inspectors in accordance with normal NRC processes.

Several findings were identified by resident inspector during their walkdown related inspections. These findings were all of very low safety significance (Green). The majority of the issues were identified as a result of licensee seismic walkdowns. Potential seismic issues were mostly related to the following three broad areas:

- (1) Degraded equipment / hardware (e.g. missing bolts, corrosion, open s-hooks);

- (2) Spatial seismic interactions; and
- (3) Problems associated with housekeeping procedures and/or implementation (e.g. temporary installations, portable equipment).

Since the last 6-month update paper, the NRC staff completed issuance of the staff assessment reports for the operating reactor fleet from December 2013 through June 2014. The staff assessments determined that the plant walkdowns were conducted consistently with the intent of the endorsed guidance, thereby verifying that the walkdowns met the objectives in Enclosure 3 of the 50.54(f) letter.

Although NRC staff review has found that licensees have properly implemented the walkdown guidance, a number of plants are in process of completing and reporting their review of delayed walkdowns on items that were inaccessible while at power. The staff expects that the last licensee walkdown update on the inaccessible items will be provided to the NRC by March 31, 2015.

Flooding Hazard Walkdowns

On March 12, 2012, the NRC staff issued a request for information (50.54(f) letter) requesting that licensees for the U.S. nuclear power plants to perform a walkdown of their currently installed flooding-protection and -mitigation features, including a review of associated manual actions. The industry developed—and the NRC endorsed—NEI 12-07, “Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features,” to conduct these walkdowns. All plants had to ensure that the features met current licensing-basis requirements and had to identify, correct, and report any degraded conditions. The walkdowns were completed and reports were submitted to the NRC staff by November 2012. NRC resident inspectors used TI-2515/187, “Inspection of Near-Term Task Force [NTTF] Recommendation 2.3 Flooding Walkdowns,” to independently verify, using a sampling process that each licensee’s flooding walkdown activities were conducted using the walkdown methodology endorsed by the NRC. Resident inspectors completed the inspection requirements set forth in TI-2515/187 concurrently with the licensee’s walkdown activities and documented the inspection results in their quarterly reports.

If the licensees discovered deficiencies during their walkdowns, the issues were entered in the licensee’s corrective-action program. These corrective actions are being followed up by the NRC resident inspectors in accordance with normal NRC processes.

Since the last 6-month update, the NRC staff has continued to assess each plant’s walkdown report. On July 17, 2014, the NRC staff completed issuance of the staff assessments of the flooding walkdown reports for all of the operating nuclear power plants.

Additionally, the NRC staff will be developing a lessons-learned report to document insights from the flooding walkdowns.

The NRC staff’s preliminary review of lessons learned notes that from the end of 2012 through early 2014, nine greater-than-Green findings were identified related to licensee vulnerability to

external flooding. The majority of the findings were identified as a result of licensee flooding walkdowns. The findings noted deficiencies in three broad areas:

- (1) Inadequate seals that would allow flood waters into safety-related spaces;
- (2) Procedurally directed actions that could not be accomplished in the time allotted by the final safety analysis report for design-basis flooding events; and
- (3) Incomplete procedures that did not provide sufficient direction during design-basis flooding events.

Seismic Hazard Reevaluations

On March 12, 2012, the NRC staff asked U.S. nuclear power plant licensees to use current regulations and guidance to reevaluate the seismic hazards that could impact their site. These newly reevaluated hazards, if they are higher than the plant was designed for, will be analyzed by licensees to determine whether interim measures are needed to protect against the reevaluated levels of hazard.

Since the last 6-month update paper, a significant amount of work has been completed on the seismic reevaluations. By March 31, 2014, licensees of nuclear plants in the Central and Eastern United States (CEUS) submitted reports on the reevaluated seismic hazard for their sites (NTTF Recommendation 2.1—Seismic). NRC staff geologists, geophysicists, structural engineers, and risk analysts reviewed the CEUS reports in accordance with the NRC-endorsed industry guidance document, which specifies the screening, prioritizing, and implementation details (ADAMS Accession No. ML12333A170). By letter dated May 9, 2014 (ADAMS Accession No. ML14111A147), the staff issued a screening review and prioritization letter to the 61 CEUS sites for the need to complete future seismic risk evaluations. The letter placed 44 CEUS sites into 3 priority groups for completion of seismic risk evaluations. The remaining 17 sites either are required to respond only to limited-scope evaluations (i.e., high-frequency evaluation, low-frequency evaluation, or spent fuel pool evaluation) or have screened-out of all further evaluations.

During the NRC screening and prioritization review, the NRC staff identified some sites for which a determination could not be made during the 30-day review period and interactions with licensees were needed to resolve technical issues. These issues generally involved differences between NRC independent estimates and licensee estimates of the seismic hazard, or the extent of existing Individual Plant Examination of External Events analyses. The staff determined that 15 sites were conditionally screened-in for the purposes of prioritizing and conducting additional evaluations. Most of the 15 sites are in priority Group 3 for which the amount of exceedance above the plant design-basis safe-shutdown earthquake in the 1- to 10-Hz range is relatively small and the maximum ground motion in the 1- to 10-Hz range is also relatively small. As of September 30, 2014, final screening decisions were completed for 11 conditionally screened-in sites. Letters with the final screening decision have been issued to Brunswick Steam Electric Plant, Duane Arnold Energy Center, Monticello Nuclear Generating Plant, and Fort Calhoun Station. With the exception of Monticello, the licensees screened-out. (Vermont Yankee has also conditionally screened-in; however, the plant's submittal has been

deferred until June of 2015¹). Final screening decision letters for the other eight sites will be issued in the near future.

After the May 9, 2014, screening and prioritization letter, by memorandum dated May 21, 2014 (ADAMS Accession No. ML14136A126), NRC staff released preliminary ground-motion response spectra to support stakeholder understanding of staff decisions and to support near-term resolution of technical differences between licensees' and NRC staff's seismic hazard estimates. During June and July 2014, the NRC staff completed eight public meetings² with licensees to understand these technical differences and establish a path forward for reviewing the hazard analyses.

The NRC staff is preparing to review the Expedited Approach submittals required for those sites that screen-in for further seismic evaluations. The Expedited Approach submittals, due December 2014, serve as an engineering review of interim evaluations. The evaluations look at the systems and components that can be used to safely shut down a plant under the conditions of a station blackout (i.e., no alternating current power is available) and loss of ultimate heat sink. The expedited approach will either confirm that a plant has sufficient margin to continue with a longer-term evaluation without any modifications, or identify the need to enhance the seismic capacity. Several public meetings have been conducted with stakeholders to support development of guidance for the format and content of the Expedited Approach submittals³ that will support effective and efficient NRC staff reviews. In response to Commission direction in SRM-COMSECY-13-0030, the staff also began to consider whether SFP evaluations were needed as part of the NTTF Recommendation 2.1 seismic activities.

Flooding Hazard Reevaluations

On March 12, 2012, the NRC staff issued a request for information (50.54(f) letter) asking all U.S. power reactor licensees and holders of construction permits in active or deferred status to reevaluate the flooding hazards that could impact their site. If the reevaluated flooding hazard at a site is not bounded by the current design basis, respondents are requested to perform an assessment of the plant's ability to cope with the reevaluated flood hazard (referred to as the integrated assessment). The staff will review the responses to the request for information and determine whether regulatory actions are necessary to provide additional protection against flooding.

Since the last 6-month update SECY paper, many activities associated with the flooding reevaluations have been completed. For example, the NRC staff has held numerous public meetings associated with either the flooding hazard reevaluations or the integrated assessment.

The NRC staff received requests for assistance from licensees to obtain information on dams upstream of eight nuclear power plants in order to complete their flooding hazard reevaluations.

¹ Vermont Yankee, by letter dated March 12, 2014 (ADAMS Accession No. ML14079A025), notified the NRC of Entergy's intent to defer March 12, 2012, response obligations until June 30, 2015. The NRC staff acknowledged this request by letter on July 28, 2014 (ADAMS Accession No. ML14134A163).

² NRC summaries of public meetings with licensees regarding seismic hazards can be found under ADAMS Accession Nos. ML14167A159, ML14175A518, ML14197A583, ML14210A021, ML14197A593, ML14210A050, ML14197A608, and ML14209A942.

³ The Expedited Approach guidance document is found in ADAMS under Accession No. ML13102A142.

These requests were received between August 2013 and March 2014. The NRC entered into an interagency agreement with the U.S. Army Corps of Engineers (USACE) to perform upstream dam failure analyses for the eight sites. All calculations will be performed in accordance with NRC's guidance document JLD-ISG-2013-01, "Guidance for Estimating Flooding Hazards due to Dam Failure." Because of the dates of the assistance request letters and the amount of effort required by the USACE to complete these evaluations, licensees requiring assistance submitted extension requests to allow them time to include the USACE results in their flooding hazard reevaluation submittal.

In March 2014, the second set of flooding hazard reports was submitted. Eleven sites (out of 24) that were due to provide their flooding hazard reports by March 2014 requested extensions. Eight of the extensions were associated with the need to interact with the USACE regarding upstream dam failures. Two of the three remaining extensions involved analysis of complex watersheds, and the remaining extension was based on the need to further refine the flooding hazard model for the site because the results were not consistent with the plant's observational experience. After a series of public interactions to better understand the basis for each extension request, 9 of the 11 sites were granted extensions, as requested. The other two extensions, for Prairie Island Nuclear Generating Plant, Units 1 and 2, and Monticello Nuclear Generating Plant, Unit 1, were granted for 4 months less than the licensee requested. The NRC staff granted these sites a shorter extension because the licensee justification for the extension included time to develop evaluations that will be provided to them based on the USACE failure analysis. The NRC staff is currently reviewing the flood hazard reevaluation reports; and as completed, the staff began issuing assessments of the flood hazard reevaluations in July 2014. The third (final) set of flood hazard reevaluation reports (20) is due in March 2015.

If the reevaluated hazard exceeds the capability of existing flood protection or mitigation, the 50.54(f) letter requests that licensees describe interim actions taken, or planned, to address the reevaluated hazard. Examples of interim actions proposed by licensees include the use of sandbags or other temporary barriers, and use of FLEX strategies. The NRC staff issued TI 2515/190, "Inspection of The Licensee's Proposed Interim Actions as a Result of the Near-Term Task Force Recommendation 2.1 Flooding Reevaluation," to facilitate inspection of those actions.

Based on the flood hazard reevaluation reports received to date, the majority of sites indicated that they will be performing an integrated assessment. All sites have indicated that, if an integrated assessment is needed, they intend to use JLD-ISG-2012-05, "Guidance for Performing the Integrated Assessment for External Flooding." The integrated assessments are due to the NRC two years after the submittal of the hazard reevaluation report. The NRC staff has engaged with industry to support the development of several examples of applying JLD-ISG-2012-05. After the integrated assessments are received from the required plants, the staff will use existing regulatory processes to document and, if appropriate, take actions based on the information received.

Emergency Preparedness Staffing and Communications

The March 12, 2012, RFI letter asked licensees to assess a large-scale event that causes the loss of all alternating current power and might affect multiple reactors at their site. It also requested that licensees assess and implement enhancements to help ensure that communications can be maintained during such an event.

All licensees submitted their communications assessments by October 31, 2012. The NRC staff issued safety assessments documenting the staff's review to each licensee by July 2013 with the exception of SONGS, Units 2 and 3, which have ceased operation.

On April 30, 2013, licensees submitted their staffing assessments based on existing station blackout coping strategies with an assumption of multiple reactors being affected concurrently. On October 23, 2013 (ADAMS Accession No. ML13233A183), the NRC staff issued the Phase 1 staffing-assessment response letters for all of the multiunit sites except Arkansas Nuclear One (ANO), Units 1 and 2; Indian Point Nuclear Generating (Indian Point) Unit Nos. 2 and 3; and SONGS. On April 28, 2014, the staff issued letters for ANO (ADAMS Accession No. ML14112A372) and Indian Point (ADAMS Accession No. ML14112A363) after reviewing the responses to requests for additional information.

By June 2014, the NRC staff received Phase 2 staffing assessments for the licensees required to submit additional staffing details four months prior to the second refueling outage occurring in Fall 2014. The staff has reviewed those licensee assessments and has begun to issue Phase 2 staffing assessments for those respective plants.

Rulemaking concerning staffing and communications is included in the consolidated rulemaking activity approved in SRM-SECY-14-0046.

Mitigation of Beyond-Design-Basis Events Rulemaking

The NRC staff has consolidated the Station Blackout Mitigation Strategies rulemaking with the Onsite Emergency Response Capabilities rulemaking as well as the portions of NTTF Recommendations 9, 10, and 11 that are already being addressed as part of the Mitigating Strategies Order (NRC Order EA-12-049) implementation (NTTF Recommendation 4.2), NTTF Recommendation 8, and items already being implemented by industry, in accordance with the Commission SRM that approved the staff's proposal in Enclosure 6 to COMSECY-14-0046 (ADAMS Accession No. ML14190A347). The combined rulemaking will now be referred to as the Mitigation of Beyond-Design-Basis Events rulemaking. As part of its efforts to develop and provide the proposed rule package to the Commission at the end of this year, the staff held a public meeting on August 26, 2014, to discuss draft language; potential severe accident management guidelines requirements, including the draft supporting backfit justification concepts; and comments on supporting guidance.

In accordance with SRM-COMSECY-14-0046, the proposed rule due date to the Commission changed from July 25, 2014, to December 31, 2014; and the final rule due date changed from March 11, 2016, to December 27, 2016. The staff plans to issue supporting guidance for the rule that cites industry guidance currently under development by NEI. The staff continues to work with industry to ensure that supporting guidance is developed on a timeline commensurate with the rule schedule.

This update closes SECY tracking 201300052 based on COMSECY-13-0002.

Enhancements to the Capability To Prevent or Mitigate Seismically-Induced Fires and Floods

This lessons learned activity originated from NTF Recommendation 3, and was intended to evaluate potential enhancements to the capability to prevent or mitigate seismically-induced fires and floods. In SRM-SECY-11-0137, the Commission directed the staff to initiate development of a PRA methodology to evaluate potential enhancements to plants' capability to prevent or mitigate seismically-induced fires and floods as part of Tier 1 activities. However, to be consistent with the program plan for NTF Recommendation 3 in SECY-12-0095, "Tier 3 Program Plans and 6-Month Status Update in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami" (ADAMS Accession No. ML12165A092), carrying out the broader evaluation (i.e., beyond the PRA methodology) of potential enhancements to the capability to prevent or mitigate seismically-induced fires and floods would remain a longer-term Tier 3 activity. In SECY-12-0095, the NRC staff supplied the following schedule and milestones to address NTF Recommendation 3 for seismically-induced fires and floods:

- (1) Continue development of PRA methodology for seismically-induced fires and floods. This will include two main subtasks:
 - (a) Engagement with PRA-standards development organizations to develop the technical elements and standards for the PRA method (ongoing); and
 - (b) Completion of a feasibility scoping study to evaluate PRA approaches for assessing multiple concurrent events (December 2015).
- (2) Reevaluate NTF Recommendation 3 based on information obtained from Tier 1 activities and PRA-method development activities, as well as recommend further activities (December 2016).

The NRC staff continues engagement with the ASME (formerly the American Society of Mechanical Engineers) and the American Nuclear Society (ANS) Joint Committee on Nuclear Risk Management (JCNRM) to leverage external stakeholders' expertise and to better focus future method-development efforts. Following JCNRM approval of the incorporation of a number of crosscutting issues in the ASME/ANS PRA standard, including concurrent initiating events such as seismically-induced fires and floods, implementation guidance has been provided to the PRA writing groups associated with affected parts of the standard. The NRC staff will continue engagement with ASME and ANS to support development of detailed standards requirements in this area.

Following the December 2013 public workshop held in Rockville, Maryland, and issuance of the associated workshop report (ADAMS Accession No. ML14022A249), work is continuing on the feasibility scoping study. The main objective of this scoping study is to better define the objectives and potential approaches for a PRA method suitable for assessing seismically-induced fires and floods. This work is expected to benefit from the information and recommendations gathered in the workshop. As a part of the technical work plan developed for this project, a draft feasibility report is being prepared in calendar year 2014. Based on input received at the workshop and subsequent discussion with some workshop participants, the feasibility report will also discuss risk analysis approaches, such as screening methods, that will not necessarily lead to complete PRAs.

Two expert panels have been identified to comment on the report and provide additional guidance that will be included in the report, which will then be issued in 2015 as the final product of the present work scope. The expert panels will include subject matter experts (i.e., seismic analysis, PRA, and internal-fire analysis) from industry, national labs, and the NRC. One panel will address seismically-induced fire issues and will include experts in both seismic and fire risk analysis. The other panel will address seismically-induced floods and will include experts in seismic risk analysis and flooding risk. Both panels will be asked to provide guidance on: (1) what structures, systems, and components (SSCs) can be screened from a seismically-induced fire or flood analysis, (2) how the unscreened SSCs can best be treated, and (3) what other issues (e.g., operator response) need special considerations in seismically-induced fire and flood scenarios.

The NRC staff will continue to monitor the progress of other NTTF recommendations related to this issue to appropriately factor additional information related to seismic and flooding hazards and mitigation strategies into the eventual resolution of NTTF Recommendation 3.