UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SUBJECT: CLINTON POWER STATION, UNIT NO. 1 – DOCUMENTATION OF THE COMPLETION OF REQUIRED ACTIONS TAKEN IN RESPONSE TO THE LESSONS LEARNED FROM THE FUKUSHIMA DAI-ICHI ACCIDENT

Dear Mr. Hanson:

The purpose of this letter is to acknowledge and document that actions required by the U.S. Nuclear Regulatory Commission (NRC) in orders issued following the accident at the Fukushima Dai-ichi Nuclear Power Station have been completed for Clinton Power Station, Unit No. 1 (Clinton). In addition, this letter acknowledges and documents that Exelon Generation Company, LLC (Exelon, the licensee) has provided the information requested in the NRC's March 12, 2012 request for information under Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f), related to the lessons learned from that accident. Completing these actions and providing the requested information, in conjunction with the regulatory activities associated with the Mitigation of Beyond-Design-Basis Events (MBDBE) rulemaking, implements the safety enhancements mandated by the NRC based on the lessons learned from the accident. Relevant NRC, industry, and licensee documents are listed in the reference tables provided in the enclosure to this letter. The NRC will provide oversight of these safety enhancements through the Reactor Oversight Process (ROP).

BACKGROUND

In response to the events in Japan resulting from the Great Tōhoku Earthquake and subsequent tsunami on March 11, 2011, the NRC took immediate action to confirm the safety of U.S. nuclear power plants:

- On March 18, 2011, the NRC issued Information Notice 2011-05, "Tōhoku-Taiheiyou-Oki Earthquake Effects on Japanese Nuclear Power Plants" (Reference 1.1). The information notice was issued to inform U.S. operating power reactor licensees and applicants of the effects from the earthquake and tsunami. Recipients were expected to review the information for applicability to their facilities and consider actions, as appropriate. Suggestions contained in an information notice are not NRC requirements; therefore, no specific action or written response was required.

- On March 23, 2011, the NRC issued Temporary Instruction (TI) 2515/183, "Followup to the Fukushima Daiichi Fuel Damage Event." The purpose of TI 2515/183 was to provide NRC inspectors with guidance on confirming the reliability of licensees' strategies intended to

maintain or restore core cooling, containment, and spent fuel pool cooling capabilities following events that may exceed the design basis for a plant. The results of the inspection for each licensee were documented in an inspection report (Reference 1.2).

- On March 23, 2011, the Commission provided staff requirements memorandum (SRM) COMGBJ-11-0002, "NRC Actions Following the Events in Japan." The tasking memorandum directed the Executive Director for Operations to establish a senior level agency task force, referred to as the Near-Term Task Force (NTTF), to conduct a methodical and systematic review of the NRC processes and regulations to determine whether the agency should make additional improvements to the regulatory system and make recommendations to the Commission within 90 days for its policy direction (Reference 1.3).

- On April 29, 2011, the NRC issued TI 2515/184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)." The purpose of TI2515/184 was to inspect the readiness of nuclear power plant operators to implement SAMGs. The results of the inspection were summarized and provided to the NTTF, as well as documented in a 2011 quarterly integrated inspection report for each licensee (Reference 1.4).

- On May 11, 2011, the NRC issued Bulletin (BL) 2011-01, "Mitigating Strategies." BL 2011-01 required licensees to provide a comprehensive verification of their compliance with the regulatory requirements 10 CFR 50.54(hh)(2), as well as provide information associated with the licensee's mitigation strategies under that section. 10 CFR 50.54(hh)(2) states, in part: "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..." BL 2011-01 required a written response from each licensee (Reference 1.5).

- On July 21, 2011, the NRC staff provided the NTTF report, "Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident" to the Commission in SECY-11-0093, "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan" (Reference 1.6).

- On October 3, 2011, the staff prioritized the NTTF recommendations into three tiers in SECY-11-0137, "Prioritization of Recommended Actions To Be Taken in Response to Fukushima Lessons Learned." The Commission approved the staff's prioritization, with comment, in the SRM to SECY-11-0137 (Reference 1.7).

  A complete discussion of the prioritization of the recommendations from the NTTF report, additional issues that were addressed subsequent to the NTTF report, and the disposition of the issues that were prioritized as Tier 2 or Tier 3 is provided in SECY-17-0016, "Status of Implementation of Lessons Learned from Japan's March 11, 2011, Great Tōhoku Earthquake and Subsequent Tsunami" (Reference 12.10). A listing of the previous Commission status reports, which were provided semiannually, can be found in Table 12 in the enclosure to this letter.

The NRC undertook the following regulatory activities to address the majority of the Tier 1 recommendations:

- On March 12, 2012, the NRC issued Orders EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," EA-12-050, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents," and EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," and a request for information under 10 CFR 50.54(f) (hereafter referred to as the 50.54(f) letter) to licensees (References 1.8, 1.9, 1.10, and 1.11, respectively).

- On June 6, 2013, the NRC issued Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions" (Reference 1.12), which superseded Order EA-12-050, replacing its requirements with modified requirements.

- In addition to the three orders and the 50.54(f) letter, the NRC is considering a new regulation (10 CFR 50.155, "Mitigation of Beyond-Design-Basis Events"). The draft final rule and supporting documentation were provided to the Commission for approval in SECY-16-0142, "Draft Final Rule – Mitigation of Beyond-Design-Basis Events (RJN 3150-AJ49)" (Reference 1.13). The MBDBE rulemaking would consolidate several of the recommendations from the NTTF report. The draft final rule, as provided to the Commission, contains provisions that make generically applicable the requirements imposed by Orders EA-12-049 and EA-12-051 and supporting requirements for the integrated response capability that includes staffing, communications, training, drills or exercises, and documentation of changes. The draft final rule also contains requirements for licensees to consider the effects of the reevaluated seismic and flooding hazard information identified in response to Enclosures 1 and 2 of the 50.54(f) letter. Three proposed regulatory guides (References 1.14, 1.15, and 1.16) were included to provide methods and procedures that the NRC staff considers acceptable for licensees to demonstrate compliance with the MBDBE rule, if approved by the Commission.

This letter acknowledges and documents that the actions required by the NRC in response to the orders, as well as the information provided in response to the March 12, 2012, 50.54(f) letter, have been completed for Clinton. However, the staff is not determining whether the licensee complies with the draft final MBDBE rule. Oversight of compliance with the final draft MBDBE rule at Clinton will be conducted through the ROP, if the Commission approves the rule.

DISCUSSION

Mitigation Strategies Order

Order EA-12-049, which applies to Clinton, requires licensees to implement a three-phase approach for mitigation of beyond-design-basis external events (BDBEE). It requires licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities in the event of a BDBEE that results in a simultaneous loss of all alternating current (ac) power and loss of normal access to the ultimate heat sink (LUHS). Phases 1 and 2 of the order use onsite equipment, while Phase 3 requires obtaining sufficient offsite resources to sustain those functions indefinitely.

In August 2012, the Nuclear Energy Institute (NEI) issued industry guidance document NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," as guidance

to comply with the order. The NRC endorsed the guidance in Japan Lessons-Learned Directorate (JLD) interim staff guidance (ISG) document 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" (Reference 2.1). Under the order, licensees were required to provide an overall integrated plan (OIP) to describe how they would comply with the order, along with status reports every 6 months until compliance was achieved (Reference 2.2). The NRC staff provided an interim staff evaluation (ISE) related to the OIP (Reference 2.3). Based on a review of the OIP and the first 6 month update, the NRC concluded in the ISE that the licensee provided sufficient information to determine that there is reasonable assurance that the plan, when properly implemented, including satisfactory resolution of the open and confirmatory items, would meet the requirements of Order EA-12-049 at Clinton. The NRC staff also conducted a regulatory audit of the licensee's strategies and issued a report which documented the results of the audit activities (Reference 2.4). Upon reaching compliance with the order requirements, the licensee submitted a compliance letter and a final integrated plan (FIP) to the NRC (Reference 2.5). The FIP describes how the licensee is complying with the order at Clinton.

The NRC staff completed a safety evaluation (SE) of the licensee's FIP (Reference 2.6). The SE informed the licensee that its integrated plans, if implemented as described, provided a reasonable path for compliance with Order EA-12-049 at Clinton. The staff then evaluated the implementation of the plans through inspection, using TI 2515/191, "Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communications/Staffing/ Multi-Unit Dose Assessment Plans." An inspection report was issued to document the results of the TI 2515/191 inspection (Reference 2.7). The NRC will oversee implementation of the mitigation strategies requirements under the proposed MBDBE rule requirements, if approved by the Commission, through the ROP.

Phase 3 of Order EA-12-049 required licensees to obtain sufficient offsite resources to sustain the required functions indefinitely. There are two redundant National SAFER (Strategic Alliance for FLEX Emergency Response) Centers (NSRCs), one located in Memphis, Tennessee, and the other in Phoenix, Arizona, which have the procedures and plans in place to maintain and deliver the equipment needed for Phase 3 from either NSRC to any participating U.S. nuclear power plant when requested (Reference 2.8). The NRC staff evaluated and inspected the NSRCs and the SAFER program, plans, and procedures (References 2.9 and 2.10). The NRC concluded that licensees may reference the SAFER program and implement their SAFER response plans to meet the Phase 3 requirements of the order. The licensee's FIP (Reference 2.5) includes the plans for utilizing the NSRC equipment at Clinton. In its SE (Reference 2.6), the NRC staff concluded that the licensee has developed guidance that, if implemented appropriately, should allow utilization of offsite resources following a BDBEE consistent with NEI 12-06 guidance and should adequately address the requirements of the order.

Spent Fuel Pool Instrumentation Order

Order EA-12-051, which applies to Clinton, required licensees to install reliable SFP level instrumentation with a primary channel and a backup channel, independent of each other, and with the capability to be powered independent of the plant ac and direct current (dc) power distribution systems. NEI issued NEI 12-02, "Industry Guidance for Compliance with NRC Order EA-12-051," as guidance to be used by licensees to comply with the order and the NRC endorsed the guidance in JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation" (Reference 3.1). The order required licensees to provide an OIP to

describe how they would comply with the order, along with status reports every 6 months until compliance was achieved (Reference 3.2). The NRC issued an ISE, providing feedback on the OIP and requesting additional information (Reference 3.3). The NRC staff conducted a regulatory audit of the licensee's strategies and issued a report that documented the results of the audit activities (Reference 3.4). Upon reaching compliance with the order requirements, the licensee submitted a compliance letter to the NRC (Reference 3.5), describing how the licensee complied with the order at Clinton.

The NRC staff completed an SE of the actions taken by the licensee in response to the order (Reference 3.6). The SE informs the licensee whether its integrated plan, if implemented as described, provided a reasonable path for compliance with Order EA-12-051 at Clinton. The staff then evaluated the implementation of the plan through inspection, using TI 2515/191. An inspection report was issued to document the results of the TI 2515/191 inspection (Reference 3.7). The NRC will oversee implementation of the SFP instrumentation requirements under the proposed MBDBE rule requirements, if approved by the Commission, through the ROP.

Reliable Hardened Containment Vent Order

Order EA-13-109 is only applicable to boiling-water reactors (BWRs) with Mark I and Mark II containments. Because Clinton is a General Electric BWR-6 with a Mark III containment, this order is not applicable to Clinton.

Request for Information Under 10 CFR 50.54(f)

The 50.54(f) letter requested licensees to:

- reevaluate the seismic and flooding hazard at their sites using present-day NRC requirements and guidance, and identify actions that are planned to address plant-specific vulnerabilities associated with the reevaluated seismic and flooding hazard;

- perform seismic and flooding walkdowns to verify compliance with the current licensing basis; verify the adequacy of current strategies and maintenance plans; and identify degraded, nonconforming, or unanalyzed conditions related to seismic and flooding protection; and

- provide an assessment of their current emergency communications and staffing capabilities to determine if any enhancements are needed to respond to a large-scale natural emergency event that results in an extended loss of ac power to all reactors at the site, and/or impeded access to the site.

In COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluat[i]on of Flooding Hazards" (Reference 6.11), the NRC staff described issues related to the implementation of Order EA-12-049 and the related MBDBE rulemaking, and the completion of flooding reevaluations and assessments. In the SRM to COMSECY-14-0037 (Reference 6.12), the Commission directed the NRC staff to ensure that licensees of operating nuclear power plants address the reevaluated hazard within their mitigation strategies for BDBEE. The SRM also directed the NRC staff to provide a plan for achieving closure of the flooding hazard assessments to the Commission for review and approval. The plan was provided in COMSECY-15-0019, "Closure Plan for the Reevaluation of

Flooding Hazards for Operating Nuclear Power Plants" (Reference 6.13), and approved by the Commission in the SRM to COMSECY-15-0019 (Reference 6.14).

Hazard Reevaluations (Enclosures 1 and 2 of the 50.54(f) letter)

Each licensee followed a similar two-phase process to respond to the hazard reevaluations requested by the 50.54(f) letter. In Phase 1, licensees submitted hazard reevaluation reports using NRC-endorsed, industry-developed guidance. The guidance specified that a licensee should determine if interim protection measures were needed while a longer-term evaluation of the impacts of the hazard was completed. The NRC staff reviewed the reevaluated hazard information. Using the reevaluated hazard information and a graded approach, the NRC identified the need for, and prioritization and scope of, plant-specific assessments. For those plants that were required to perform a flooding integrated assessment or a seismic probabilistic risk assessment (SPRA), Phase 2 decisionmaking (as described in a letter dated September 16, 2016 (Reference 5.16)) would determine whether additional plant-specific regulatory actions were necessary. In addition, as discussed in COMSECY-15-0019 and the draft final MBDBE rule, each licensee performed a mitigation strategies assessment (MSA) to confirm that the licensee had adequately addressed the reevaluated hazards within their mitigation strategies developed for BDBEEs.

Seismic Hazard Reevaluation (Enclosure 1 of the 50.54(f) letter)

Enclosure 1 of the 50.54(f) letter requested each operating reactor licensee to complete a reevaluation of the seismic hazard that could affect their sites using updated seismic hazard information and present-day regulatory guidance and methodologies to develop a ground motion response spectrum (GMRS). The licensee was asked to compare their results to the safe shutdown earthquake (SSE) ground motion and then report to the NRC in a seismic hazard screening report. To provide a uniform and acceptable industry response, the Electric Power Research Institute (EPRI) developed a technical report, EPRI 1025287, "Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," and the NRC endorsed the guidance in a letter dated February 15, 2013 (Reference 5.1). Between November 2012 and May 2014, the NRC and the industry provided guidance for the performance of the reevaluated hazard reviews (References 5.2-5.7). The licensee provided a seismic hazard screening report for Clinton on March 31, 2014 (Reference 5.8).

If the new GMRS was not bound by the current design basis (CDB) SSE, more detailed evaluations of the impact from the hazard was requested. Also, the licensee was requested to evaluate whether interim protection measures were needed while the more detailed evaluation was completed. NEI provided a proposed path forward and schedules in a letter from NEI dated April 9, 2013. The NRC endorsed this approach in a letter dated May 7, 2013. The guidance to perform the interim protective measures evaluation, EPRI report 300200704, "Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," was provided as Attachment 1 to the NEI letter (Reference 5.3). This expedited seismic evaluation process (ESEP) is a screening, evaluation, and equipment modification process conducted by licensees to provide additional seismic margin and expedite plant safety enhancements for certain core cooling and containment components while the more detailed and comprehensive plant seismic risk evaluations are being performed. If an ESEP was required, then the NRC staff completed a technical review of the ESEP report and documented its review in response letters. As discussed in Section 2.2 of EPRI 300200704, the licensee

was not required to perform an ESEP for Clinton since the SSE envelopes the reevaluated GMRS in the 1 to 10 Hertz (Hz) region, as noted by the NRC staff in Reference 5.11.

By letter dated May 9, 2014 (Reference 5.10), the NRC informed licensees of the initial screening and prioritization results based on a review of the licensees' seismic hazard screening reports. The NRC updated the screening and prioritization in a letter dated October 3, 2014 (Reference 5.11). The NRC provided the final determination of seismic probabilistic risk assessments in a letter dated October 27, 2015 (Reference 5.17). This letter specified the remaining seismic evaluations for each licensee. These evaluations could consist of an SPRA (Reference 5.1, SPID, Section 6.1.1), limited scope evaluations (High Frequency (Reference 5.13) and/or SFP (Reference 5.14)), or a relay chatter evaluation (Reference 5.4). If an SPRA was required, then additional Phase 2 regulatory decisionmaking was required (References 5.15 and 5.16).

The NRC staff completed and documented its review of the licensee's reevaluated seismic hazard in a staff assessment (Reference 5.9). In order to complete its response to the 50.54(f) letter, the licensee submitted a high frequency evaluation for Clinton (Reference 5.18). The NRC reviewed the high frequency evaluation submittal and confirmed that Clinton met the Limited High Frequency criteria (Reference 5.19) and no additional evaluations were needed.

The NRC staff reviewed the information provided and, as documented in the staff assessments (References 5.9 and 5.19), determined that the licensee provided sufficient information in response to Enclosure 1 of the 50.54(f) letter. The staff acknowledges that all seismic hazard reevaluation activities requested by Enclosure 1 of the 50.54(f) letter have been completed for Clinton. No further information related to the reevaluated seismic hazard is required.

Flooding Hazard Reevaluation (Enclosure 2 of the 50.54(f) letter)

Enclosure 2 of the 50.54(f) letter requested each operating reactor licensee to complete a reevaluation of applicable flood-causing mechanisms at their site using updated flooding hazard information and present-day regulatory guidance and methodologies. Licensees were asked to compare their results to the CDB for protection and mitigation from external flood events. The NRC developed guidance to conduct the reevaluations (References 6.1 through 6.6). The licensee submitted a flood hazard reevaluation report (FHRR) for Clinton (Reference 6.7) to the NRC as requested by the 50.54(f) letter. A regulatory audit to support the review of the FHRR was not required (Reference 6.8). The NRC staff reviewed the FHRR and provided an interim hazard letter (Reference 6.9) to provide feedback on the staff's review of the flooding hazard reevaluations. The interim hazard letter was used by the licensee to complete the flood hazard MSA and other flood hazard evaluations. Separately, the NRC staff documented the technical bases for its conclusions in the interim hazard letters by issuing a staff assessment (Reference 6.10).

In COMSECY-14-0037 (Reference 6.11), the NRC staff requested Commission direction to more clearly define the relationship between Order EA-12-049, the related MBDBE rulemaking, and the flood hazard reevaluations and assessments. In the SRM to COMSECY-14-0037 (Reference 6.12), the Commission affirmed that licensees of operating nuclear power plants need to address the reevaluated flooding hazard within their mitigation strategies. The Commission also directed the NRC staff to provide a plan for achieving closure of the flooding portion of NTTF Recommendation 2.1 to the Commission for its review and approval. On June 30, 2015, the NRC staff provided a plan to the Commission in COMSECY-15-0019 (Reference 6.13). On July 28, 2015, the Commission approved the plan in the SRM to

COMSECY-15-0019 (Reference 6.14). On September 29, 2015, the NRC issued a letter to licensees to describe the graded approach to the flood hazard reevaluations approved by the Commission (Reference 6.15).

The COMSECY-15-0019 action plan required the NRC staff to develop a graded approach to identify the need for, and prioritization and scope of, plant-specific integrated assessments and evaluation of plant-specific regulatory actions. The NRC staff's graded approach enabled a site with hazard exceedance above its CDB to demonstrate the site's ability to cope with the reevaluated hazard through appropriate protection or mitigation measures which are timely, effective, and reasonable. Integrated assessments were focused on sites with the greatest potential for additional safety enhancements. New guidance for performing the integrated assessments and focused evaluations was developed for this graded approach. On July 18, 2016, the staff issued JLD-ISG-2016-01, "Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation, Focused Evaluation and Integrated Assessment" (Reference 6.16). The ISG provided the guidance for Phase 1 flooding assessments, as described in COMSECY-15-0019, and endorsed industry guidance provided in NEI 16-05, "External Flooding Integrated Assessment Guidelines" (Reference 6.16). If an integrated assessment was necessary, then Phase 2 regulatory decisionmaking was required (References 6.18 and 6.19).

As noted in the interim hazard response letter (Reference 6.9), the reevaluated flooding hazard at Clinton was bounded by the CDB. The NRC staff documented its review of the FHRR in a staff assessment (Reference 6.10) and concluded that the licensee provided sufficient information in response to the 50.54(f) letter. Because the reevaluated flood mechanisms are bounded by the CDB, it was not necessary for Clinton to perform a focused evaluation or an integrated assessment.

The NRC staff reviewed the information provided by the licensee and has concluded that sufficient information was provided to be responsive to Enclosure 2 of the 50.54(f) letter. The staff acknowledges that all flooding hazard reevaluation activities requested by Enclosure 2 of the 50.54(f) letter have been completed for Clinton. No further information related to the reevaluated flood hazard is required.

Mitigation Strategies Assessment

In addition to the closure plan for NTTF Recommendation 2.1, the action plan approved by the Commission in the SRM to COMSECY-15-0019 (Reference 7.4) identified the staff efforts to ensure licensees would address the reevaluated hazard information in their mitigation strategies. Performance of the MSA is necessary to support compliance with the final MBDBE rule, if approved by the Commission.

The objective of the MSA is to determine whether the mitigation strategies developed for Order EA-12-049 can still be implemented given the reevaluated hazard levels. If it was determined that the mitigation strategies could not be implemented for the reevaluated hazard levels, the MSA could provide other options such as performing additional evaluations, modifying existing mitigation strategies, or developing alternate mitigation strategies or targeted mitigation strategies to address the reevaluated hazard levels. The process used to develop the MSAs was provided in Appendices G and H of NEI 12-06, as endorsed by the NRC in JLD-ISG-2012-01 (Reference 7.5).

Both a flood hazard MSA (Reference 7.6) and a seismic hazard MSA (Reference 7.8) were provided by the licensee. The NRC staff reviewed the MSA submittals and issued staff assessments (References 7.7 and 7.9) documenting its review. The NRC staff concluded that the licensee has demonstrated that the mitigation strategies appropriately address the reevaluated hazard conditions at Clinton. Oversight of the modifications to strategies resulting from the MSAs will be included in the longer-term oversight of mitigation strategies through the ROP.

Walkdowns (Enclosures 3 and 4 of the 50.54(f) letter)

Enclosures 3 and 4 of the 50.54(f) letter requested that licensees perform plant walkdowns to verify compliance with the current licensing basis as it pertains to seismic and flood protection. Technical Report EPRI 1025286, "Seismic Walkdown Guidance" (Reference 8.1), was provided as guidance to licensees for conducting the seismic walkdowns and the NRC endorsed that guidance by letter dated May 31, 2012 (Reference 8.2). NEI issued NEI 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features" (Reference 9.1), as guidance to licensees for conducting the flooding walkdowns and the NRC endorsed that guidance by letter dated May 31, 2012 (Reference 9.2). The licensee provided a report for both the seismic and flooding walkdowns at Clinton (References 8.3 and 9.3). Onsite inspections were conducted per TI 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns" (Reference 8.4) and TI 2515/187, "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns" (Reference 9.4), and the inspection results were documented in a quarterly integrated inspection report. The NRC staff issued staff assessments for both the seismic and flooding walkdowns (References 8.5 and 9.5). For those items that were inaccessible during the initial licensee seismic walkdowns, the licensee submitted a delayed seismic walkdown report after accessing the areas (Reference 8.5). The NRC documented its review of the delayed walkdown reports in a letter dated September 25, 2015 (Reference 8.7).

The NRC staff reviewed the information provided by the licensee and determined that sufficient information was provided to be responsive to Enclosures 3 and 4 of the 50.54(f) letter. The staff acknowledges that all seismic and flooding walkdown activities requested by the 50.54(f) letter have been completed for Clinton.

Communications and Staffing (Enclosure 5 of the 50.54(f) letter)

Enclosure 5 of the 50.54(f) letter requested licensees to assess their means to power equipment needed to communicate onsite and offsite during a prolonged station blackout event and to identify and implement enhancements to ensure that communications can be maintained during such an event. Also, licensees were requested to assess the staffing required to fill all necessary positions to respond to a multi-unit event with impeded access to the site, or to an extended loss of all ac power for single unit sites. Licensees were requested to submit a written response to the information requests within 90 days, or provide a response within 60 days and describe an alternative course of action and estimated completion dates. The licensee proposed an alternative course of action and schedule for Clinton (Reference 10.2), which included a partial response (Reference 10.3). The NRC acknowledged the schedule changes in a letter dated July 26, 2012 (Reference 10.4).

The communications and staffing evaluation reports were developed using NRC-endorsed, industry-developed guidance (Reference 10.1). Guidance document NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications

Capabilities," was endorsed by the NRC in a letter dated May 15, 2012. The licensee provided the communications assessment and implementation schedule for their fleet, including Clinton (Reference 10.5), and the NRC completed a safety assessment of the licensee's communications assessment (Reference 10.6).

Licensees responded to the staffing portion of the 50.54(f) letter in two phases to account for the implementation of mitigation strategies. Phase 1 staffing assessments were based on the existing station blackout coping strategies with an assumption of all reactors at the site being affected concurrently. Phase 1 staffing assessments were only required for multiunit sites and were not required for Clinton. In Phase 2, all licensees assessed the staffing necessary to carry out the mitigation strategies (Reference 10.9). The NRC staff issued a staffing assessment response letter (Reference 10.10). An onsite inspection using TI 2515/191 was conducted to verify that the emergency communications and staffing plans at Clinton have been implemented as described by the licensee (Reference 10.11).

The draft final MBDBE rule would make generically applicable the staffing and communications requirements to support the mitigation strategies. Regulatory Guide 1.228 (Reference 1.16) is expected to endorse, with clarifications, NEI 12-01, NEI 13-06, "Enhancements to Emergency Response Capabilities for Beyond-Design-Basis Events and Severe Accidents" (Reference 11.18), and NEI 14-01, "Emergency Response Procedures and Guidelines for Beyond-Design-Basis Events and Severe Accidents" (Reference 11.8), to provide acceptable methods for implementing the MBDBE rule requirements. The NRC will oversee the communications and staffing requirements, and a periodic drill or exercise, under the proposed MBDBE rule requirements, if approved by the Commission, through the ROP.

The NRC staff reviewed the information provided by the licensee and determined that sufficient information was provided to be responsive to Enclosure 5 of the 50.54(f) letter. The staff acknowledges that all emergency preparedness communications and staffing activities requested by Enclosure 5 of the 50.54(f) letter have been completed for Clinton. No further information related to the communications and staffing assessments is required.

Additional Industry Commitments

Update and Maintain Severe Accident Management Guidelines

The staff provided the proposed MBDBE rule to the Commission on April 30, 2015, in SECY-15-0065, "Proposed Rulemaking: Mitigation of Beyond-Design-Basis Events (RIN 3150-AJ49)" (Reference 11.1) and the Commission issued the SRM to SECY-15-0065 on August 27, 2015 (Reference 11.2). The Commission approved publication of the proposed rule subject to removal of the proposed requirements pertaining to the severe accident management guidelines (SAMGs). The Commission also directed the staff to update the ROP to explicitly provide periodic oversight of industry's implementation of the SAMGs. In a letter dated October 26, 2015 (Reference 11.3), NEI described the industry initiative, approved by the Nuclear Strategic Issues Advisory Committee as mandatory for all NEI members, to update and maintain the SAMGs. Specifically, each licensee will perform timely updates of their site-specific SAMGs based on revisions to generic severe accident technical guidelines. Licensees will also ensure that SAMGs are considered within plant configuration management processes. As noted in the NEI letter, the licensee provided a letter (Reference 11.4) to establish a site-specific regulatory commitment for Clinton. Subsequently, the licensee submitted a revised site-specific regulatory commitment for Clinton (Reference 11.5).

In a letter to NEI dated February 23, 2016 (Reference 11.6), the staff outlined its approach for making changes to the ROP in accordance with the Commission direction. The staff engaged NEI and other stakeholders to identify the near-term and longer-term changes to the ROP, consistent with the Commission direction and the licensees' near-term and longer-term SAMG commitments. The staff then revised Inspection Procedure 71111.18, "Plant Modifications" (Reference 11.7), to provide oversight of the initial inclusion of SAMGs within the plant configuration management processes to ensure that the SAMGs reflect changes to the facility over time.

Multiunit/Multisource Dose Assessments

In COMSECY-13-0010, "Schedule and Plans for Tier 2 Order on Emergency Preparedness for Japan Lessons Learned," dated March 27, 2013 (Reference 11.14), the staff requested Commission approval to implement the NTTF recommendation concerning multiunit/multisource dose assessments by having licensees document their commitment to obtain multiunit/multisource dose assessment capability by the end of 2014, rather than by issuing an order. Multiunit dose assessment capabilities would be made generically applicable through subsequent rulemaking. The Commission approved the staff's requests in the SRM to COMSECY-13-0010, dated April 30, 2013 (Reference 11.15).

The NRC staff included the multiunit/multisource dose assessment requirement in the proposed MBDBE rulemaking (Reference 11.1). However, in response to a public comment concerning the 10 CFR 50.109 backfitting justification for the proposed multiple source term dose assessment requirements, the staff determined that this requirement did not meet the criteria for imposition under 10 CFR 50.109(a)(4)(ii). The NRC staff also concluded that this could not be justified as a compliance backfit or as a substantial safety improvement whose costs, both direct and indirect, would be justified in light of the potential safety gain. Therefore, these requirements were removed from the draft final rule (Reference 11.17).

The licensee provided the requested information for Clinton in a letter dated June 27, 2013, which stated that it will have multiunit/multisource dose assessment capabilities by December 31, 2014 (Reference 11.12). The NRC acknowledged the licensee submittal (Reference 11.13), verified the implementation of these dose assessment capabilities through inspection per TI 2515/191, and issued an inspection report (Reference 11.16).

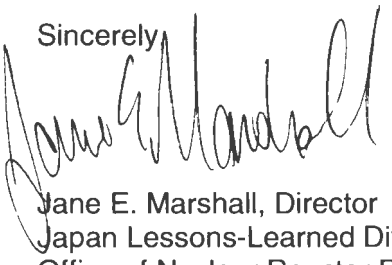
CONCLUSION

The NRC staff concludes that Exelon, the licensee, has implemented the NRC-mandated safety enhancements resulting from the lessons learned from the Fukushima Dai-ichi accident through its implementation of Orders EA-12-049, EA-12-051, and its response to the 50.54(f) letter for Clinton. No further regulatory decisionmaking is required for Clinton related to the Fukushima lessons-learned.

A listing of the applicable correspondence related to the Fukushima lessons-learned activities for Clinton is included as an enclosure to this letter.

If you have any questions, please contact Robert Bernardo of my staff at 301-415-2621 or by e-mail at robert.bernardo@nrc.gov.

Sincerely,



Jane E. Marshall, Director
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure:
Documents Related to Required
Response

cc w/encl: Distribution via Listserv

Reference Documents Related to Required Response to the Lessons Learned from the Fukushima Dai-ichi Accident

TABLE 1
Initial Actions in Response to the Events in Japan Caused by the Great Tōhoku Earthquake and Subsequent Tsunami

Ref	Document	Date	ADAMS Accession No.
1.1	NRC Information Notice 2011-05	March 18, 2011	ML110760432
1.2	NRC Follow-up to the Fukushima Dai-ichi Fuel Damage Event		
	Temporary Instruction (TI) 2515/183	March 23, 2011	ML113220407
	NRC TI 2515/183 Inspection Report 2011-011	May 13, 2011	ML111320336
1.3	NRC Tasking Memorandum, Staff Requirements Memorandum (SRM) to COMGBJ-11-0002	March 23, 2011	ML110820875
1.4	NRC Availability and Readiness Inspection of SAMG		
	NRC Availability and Readiness Inspection of SAMG - TI 2515/184	April 29, 2011	ML11115A053
	NRC Integrated Inspection Report 2011-003 (TI 2515/184 inspection results)	July 29, 2011	ML11213A091
	NRC TI 2515/184 Inspection Results, Region 3 Summary	June 1, 2011	ML111520396
	NRC Summary of TI 2515/184 Results	June 6, 2011	ML11154A109
1.5	NRC Bulletin 2011-01, "Mitigation Strategies"		
	NRC Bulletin 2011-01	May 11, 2011	ML111250360
	Exelon 30 day response to BL 2011-01	June 8, 2011	ML111600096
	Exelon 60 day response to BL 2011-01	July 8, 2011	ML111920162
	NRC Request for Additional Information (RAI) regarding Exelon 60 day response to BL 2011-01	November 22, 2011	ML113120057
	Exelon response to RAI	December 20, 2011	ML113550139
	NRC Closeout of BL 2011-01 for Exelon	August 2, 2012	ML12178A215
1.6	NRC NTTF Report (SECY-11-0093)	July 21, 2011	ML11186A950
1.7	NRC SECY-11-0137, Prioritization of Recommended Actions To Be Taken in Response to Fukushima Lessons Learned		
	NRC SECY-11-0137	October 3, 2011	ML11272A111
	SRM-SECY-11-0137	December 15, 2011	ML113490055
1.8	NRC Order EA-12-049	March 12, 2012	ML12054A735
1.9	NRC Order EA-12-050	March 12, 2012	ML12054A694
1.10	NRC Order EA-12-051	March 12, 2012	ML12054A679
1.11	NRC Request for Information Under 10 CFR 50.54(f) (the 50.54(f) letter)	March 12, 2012	ML12053A340
1.12	NRC Order EA-13-109	June 6, 2013	ML13143A321

TABLE 1
Initial Actions in Response to the Events in Japan Caused by the Great Tōhoku Earthquake and Subsequent Tsunami

Ref	Document	Date	ADAMS Accession No.
1.13	NRC SECY-16-0142, "Draft Final Rule: Mitigation of Beyond-Design-Basis Events"	December 15, 2016	ML16301A005
1.14	Regulatory Guide 1.226, Flexible Mitigation Strategies for Beyond-Design-Basis Events (Draft Final Version)	November 2016	ML16301A128
1.15	Regulatory Guide 1.227, Wide Range Spent Fuel Pool Level Instrumentation (Draft Final Version)	November 2016	ML16211A167
1.16	Regulatory Guide 1.228 - Integrated Response Capabilities for Beyond-Design-Basis Events (Draft Final Version)	November 2016	ML16218A236

TABLE 2
Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events – EA-12-049

Ref	Document	Date	ADAMS Accession No.
2.1	Guidance for Compliance with EA-12-049 - Diverse and Flexible Coping Strategies (FLEX)		
	Industry Guidance on Diverse and Flexible Coping Strategies (FLEX) NEI 12-06, Revision 0	August 21, 2012	ML12242A378
	NRC endorsement of NEI 12-06, Revision 0 - JLD-ISG-2012-01, Revision 0	August 29, 2012	ML12229A174
2.2	Licensee Overall Integrated Plan (OIP)		
	Licensee OIP submittal	February 28, 2013	ML13064A274
	OIP 1st six month status report	August 28, 2013	ML13241A241
	OIP 2nd six month status report	February 28, 2014	ML14059A429
	OIP 3rd six month status report	August 28, 2014	ML14248A231
	OIP 4th six month status report	February 27, 2015	ML15058A513
2.3	NRC Interim Staff Evaluation of OIP	December 17, 2013	ML13225A571
2.4	NRC audit of EA-12-049 OIP		
	NRC Notification of Audit of EA-12-049	August 28, 2013	ML13234A503
	NRC Audit Plan	February 18, 2015	ML15042A557
	NRC Audit Report	April 27, 2015	ML15100A051
2.5	Licensee Final Integrated Plan		
	Licensee Compliance Letter and FIP for EA-12-049	July 15, 2015	ML15198A115
	Licensee Revised FIP for EA-12-049	December 14, 2015	ML15349A911
2.6	NRC Safety Evaluation of FIP	December 23, 2015	ML15324A238
2.7	NRC Inspection of Licensee Responses to EA-12-049, EA-12-051, and Emergency Preparedness Information		
	NRC Temporary Instruction 2515/191	October 6, 2014	ML14273A444
	NRC TI 2515/191 Inspection Report 2016-007	September 22, 2016	ML16266A301
2.8	Industry White Paper – National SAFER Response Centers (NSRC)	September 11, 2014	ML14259A221
2.9	NRC Staff Assessment of NSRCs	September 26, 2014	ML14265A107
2.10	NRC Inspection of Implementation of EA-12-049 Regarding the use of NSRC		
	NRC Inspection Procedure (IP) 43006	September 30, 2016	ML16273A318
	NRC Vendor Inspection of the Phoenix NSRC Report No. 99901013/2016-201	January 12, 2017	ML17012A186
	NRC Vendor Inspection of the Memphis NSRC Report No. 99901013/2017-201	May 5, 2017	ML17117A576

TABLE 3 Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation – EA-12-051			
Ref	Document	Date	ADAMS Accession No.
3.1	Guidance for Compliance with EA-12-051 – Spent Fuel Pool Instrumentation		
	Industry Guidance for Compliance with EA-12-051 – NEI 12-02, Revision 1	August 2012	ML12240A307
	NRC endorsement of NEI 12-02, Revision 1 - JLD-ISG-2012-03	August 29, 2012	ML12221A339
3.2	Licensee Overall Integrated Plan (OIP)		
	Licensee OIP	February 28, 2013	ML13059A306
	OIP 1st six month status report	August 28, 2013	ML13241A237
	OIP 2nd six month status report	February 28, 2014	ML14062A058
	OIP 3rd six month status report	August 28, 2014	ML14248A213
	OIP 4th six month status report	February 27, 2015	ML15058A622
3.3	NRC Interim Staff Evaluation of OIP	November 15, 2013	ML13280A326
3.4	NRC Audit of EA-12-051		
	NRC Notification of Audit of EA-12-051	March 26, 2014	ML14083A620
	NRC Audit Report of Westinghouse SFPI design specifications	August 18, 2014	ML14211A346
	NRC Notification of Audit of EA-12-051	March 26, 2014	ML14083A620
	NRC Audit Plan	February 18, 2015	ML15042A557
	NRC Audit Report	April 27, 2015	ML15100A051
3.5	Licensee Compliance Letter for EA-12-051	July 15, 2015	ML15198A113
3.6	NRC Safety Evaluation of Implementation of EA-12-051	December 23, 2015	ML15324A238
3.7	NRC Inspection of Licensee Responses to EA-12-049, EA-12-051, and Emergency Preparedness Information		
	NRC Temporary Instruction 2515/191	October 6, 2014	ML14273A444
	NRC TI 2515/191 Inspection Report 2016-007	September 22, 2016	ML16266A301

Note: TABLE 4 RELATES TO THE HARDENED CONTAINMENT VENT SYSTEM AND IS NOT APPLICABLE TO CLINTON

	TABLE 5 **Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 1: Recommendation 2.1 Seismic Hazard Reevaluation**		
Ref	**Document**	**Date**	**ADAMS Accession No.**
Guidance Documents			
5.1	Screening, Prioritization and Implementation Details (SPID)		
	Industry Guidance (SPID) – EPRI 1025287	November 2012	ML12333A170
	NRC letter endorsing SPID	February 15, 2013	ML12319A074
5.2	NRC guidance for performing a Seismic Margin Assessment (SMA) – JLD-ISG-2012-04	November 16, 2012	ML12286A029
5.3	Expedited Seismic Evaluation Process (ESEP)		
	Industry Letter – Proposed path forward for NTTF Recommendation 2.1: Seismic	April 9, 2013	ML13101A345
	Industry Guidance – Expedited Seismic Evaluation Process (ESEP) - EPRI 3002000704	April 2013	ML13102A142
	NRC letter endorsing the ESEP approach and extension of due date to 3/31/14 (Central and Eastern U.S.)	May 7, 2013	ML13106A331
5.4	Industry letter on relay chatter review	October 3, 2013	ML13281A308
5.5	NRC letter with guidance on the content of seismic reevaluation submittals (includes operability and reportability discussions)	February 20, 2014	ML14030A046
5.6	Industry letter on seismic risk evaluations for CEUS plants	March 12, 2014	ML14083A596
5.7	NRC background paper - Probabilistic seismic hazard analysis	May 20, 2014	ML14140A648
Seismic Hazard Screening Report			
5.8	Licensee Seismic Hazard Screening Report	March 31, 2014	ML14091A011
5.9	NRC Staff Assessment of Reevaluated Seismic Hazard Information	October 19, 2015	ML15281A226
Screening and Prioritization Results			
5.10	NRC Letter - Seismic screening and prioritization results for CEUS plants	May 9, 2014	ML14111A147
	NRC Support Document for Screening and Prioritization - Preliminary ground motion response spectra for CEUS plants	May 21, 2014	ML14136A126
5.11	NRC Letter – Updated seismic screening and prioritization results	October 3, 2014	ML14258A043
5.12	NRC letter regarding development of Seismic Risk Evaluations – suitability of updated seismic hazard information for further assessments	December 10, 2014	ML14307B707

	TABLE 5 **Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 1: Recommendation 2.1 Seismic Hazard Reevaluation**		
Ref	**Document**	**Date**	**ADAMS Accession No.**
Additional Guidance Documents			
5.13	High Frequency Program Application Guidance		
	Industry HF Application Guidance - EPRI 3002004396	July 30, 2015	ML15223A095
	NRC letter endorsing HF Application Guidance	September 17, 2015	ML15218A569
5.14	Spent Fuel Pool Evaluation Guidance		
	Industry SFP evaluation guidance – EPRI 3002007148	February 23, 2016	ML16055A017
	NRC letter endorsing SFP evaluation guidance	March 17, 2016	ML15350A158
5.15	NRC Letter - Treatment of Seismic and Flooding Hazard Reevaluations in the Design and Licensing Basis	September 29, 2015	ML15127A401
5.16	NRC Guidance for Regulatory Decisionmaking of reevaluated flooding and seismic hazards	September 21, 2016	ML16237A103
Final Determinations of Required Seismic Evaluations			
5.17	NRC Final Determination of Required Seismic Evaluations	October 27, 2015	ML15194A015
5.18	Licensee Required Seismic Evaluations		
	Licensee Limited Scope Evaluation (High Frequency Supplement)	November 30, 2015	ML15335A389
5.19	NRC Staff Assessment of High Frequency Confirmation (Note 1)	February 18, 2016	ML15364A544

Note 1: In this letter, the NRC staff concluded that no further response or regulatory actions associated with the 50.54(f) letter review of Phase 2 of the Near-Term Task Force (NTTF) Recommendation 2.1 "Seismic" are required for Clinton Power Station, Unit No. 1. This letter closed out the NRC efforts associated with Phase 1 and Phase 2 of NTTF Recommendation 2.1 "Seismic".

	TABLE 6 **Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 2: Recommendation 2.1 Flooding Hazard Reevaluation**		
Ref	**Document**	**Date**	**ADAMS Accession No.**
Initial Guidance Documents			
6.1	NRC prioritization of plants for completing flood hazard reevaluations	May 11, 2012	ML12097A509
6.2	NRC-issued guidance for performing an integrated assessment for external flooding (JLD-ISG-2012-05)	November 30, 2012	ML12311A214
6.3	NRC letter to industry describing when an integrated assessment is expected	December 3, 2012	ML12326A912
6.4	NRC-issued guidance for performing a tsunami, surge, or seiche hazard assessment (JLD-ISG-2012-06)	January 4, 2013	ML12314A412
6.5	NRC letter to industry with guidance on the content of flooding reevaluation submittals	March 1, 2013	ML13044A561
6.6	NRC-issued guidance for assessing flooding hazards due to dam failure (JLD-ISG-2013-01)	July 29, 2013	ML13151A153
Flood Hazard Reevaluation Report			
6.7	Licensee FHRR Submittal Package	March 12, 2014	ML14079A415
6.8	FHRR Regulatory Audit		
	NRC FHRR Audit Plan	July 21, 2015	ML15148A286
	NRC FHRR Audit Report	No audit required	NA
6.9	NRC Interim Staff Response to Reevaluated Flood Hazards	September 3, 2015	ML15230A012
6.10	NRC Staff Assessment of FHRR	October 27, 2015	ML15279A134
Modified Approach to Flood Hazard Reevaluations			
6.11	NRC COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards"	November 21, 2014	ML14309A256
6.12	NRC SRM for COMSECY-14-0037	March 30, 2015	ML15089A236
6.13	NRC COMSECY-15-0019 "Closure Plan for the Reevaluation of Flooding Hazards"	June 30, 2015	ML15153A104
6.14	NRC SRM-COMSECY-15-0019	July 28, 2015	ML15209A682
6.15	NRC letter describing the graded approach to flood hazard reevaluation directed by SRM-COMSECY-14-0037	September 1, 2015	ML15174A257

	TABLE 6 Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 2: Recommendation 2.1 Flooding Hazard Reevaluation		
Ref	Document	Date	ADAMS Accession No.
6.16	Flooding Assessment Guidance		
	NEI 16-05, "External Flooding Assessment Guidelines"	April 2016	ML16165A178
	NRC endorsement of NEI 16-05 - JLD-ISG-2016-01	July 11, 2016	ML16162A301
6.17	Licensee Required Evaluations		
	No further evaluations were required – reevaluated flood hazard was bounded by the CDB	See FHRR Staff Assessment (SA)	See FHRR SA
6.18	NRC Letter - Treatment of Seismic and Flooding Hazard Reevaluations in the Design and Licensing Basis	September 29, 2015	ML15127A401
6.19	NRC Guidance for Regulatory Decision-making of reevaluated flooding and seismic hazards	September 21, 2016	ML16237A103

	TABLE 7 Mitigating Strategies Assessments (MSA)		
Ref	Document	Date	ADAMS Accession No.
7.1	NRC COMSECY-14-0037, Integration of Mitigating Strategies with Hazard Reevaluations	November 21, 2014	ML14309A256
7.2	NRC SRM-COMSECY-14-0037	March 30, 2015	ML15089A236
7.3	NRC COMSECY-15-0019, Closure Plan for Flooding Hazard Reevaluations	June 30, 2015	ML15153A104
7.4	NRC SRM-COMSECY-15-0019	July 28, 2015	ML15209A682
7.5	Process for Mitigating Strategies Assessments (MSA)		
	Industry Guidance for performing MSAs - NEI 12-06, Revision 2, including Appendices E, G, & H	December 2015	ML16005A625
	NRC endorsement of NEI 12-06, Revision 2 - JLD-ISG-2012-01, Revision 1	January 22, 2016	ML15357A163
7.6	Licensee's MSA submittal - Flooding	March 24, 2016	ML16084A859
7.7	NRC Staff Assessment of MSA - Flooding	June 29, 2016	ML16120A007
7.8	Licensee's MSA submittal – Seismic	May 26, 2016	ML16147A560
7.9	NRC Staff Assessment of MSA - Seismic	June 20, 2016	ML16166A121
7.10	NRC MSA Audit Plan	December 6, 2016	ML16259A189
7.11	NRC MSA Audit Report (if needed)	Not required	Not required

	TABLE 8 Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 3: Recommendation 2.3 Seismic Walkdown		
Ref	Document	Date	ADAMS Accession No.
8.1	Industry Seismic Walkdown Guidance with NRC endorsement letter - EPRI 1025286	May 31, 2012	ML12188A031
8.2	NRC letter endorsing EPRI 1025286	May 31, 2012	ML12145A529
8.3	Licensee Seismic Hazard Walkdown Report Package	November 27, 2012	ML123400395
8.4	NRC Inspection of Seismic Walkdowns		
	NRC TI 2515/188	July 6, 2012	ML12156A052
	NRC Integrated Inspection Report 2013-002 (TI 2515/188 inspection results)	April 23, 2013	ML13114A117
8.5	Licensee delayed seismic walkdown report		
	Delayed seismic walkdown report	September 16, 2013	ML13260A083
	Supplemental Response completing delayed seismic walkdown report	December 17, 2014	ML14353A031
8.6	NRC Staff Assessment of Seismic Walkdown Report	May 14, 2014	ML14065A559
8.7	NRC review of seismic delayed walkdown reports	September 25, 2015	ML15268A477

	TABLE 9 Request for Information Pursuant to Title 10 of the *Code Of Federal Regulations* 50.54(f) Enclosure 4: Recommendation 2.3 Flooding Walkdown		
Ref	Document	Date	ADAMS Accession No.
9.1	Industry Flooding Walkdown Guidance - NEI 12-07	May 31, 2012	ML12173A215
9.2	NRC letter endorsing NEI 12-07	May 31, 2012	ML12144A142
9.3	Licensee Flooding Hazard Walkdown Report		
	Flooding Hazard Walkdown Report	November 27, 2012	ML12332A304
	Supplement to flooding hazard walkdown report	June 19, 2013	ML13171A273,
9.4	NRC Inspection of Flooding Walkdowns		
	NRC TI 2515/187	June 27, 2012	ML12129A108
	NRC Integrated Inspection Report 2013-002, (TI 2515/187 inspection results)	April 23, 2013	ML13114A117
9.5	NRC Staff Assessment of Flooding Walkdown Report	June 26, 2014	ML14164A298

	TABLE 10 **Request for Information Pursuant to Title 10 of the Code Of Federal Regulations 50.54(f) Enclosure 5: Recommendation 9.3 Emergency Preparedness Communications and Staffing**		
Ref	**Document**	**Date**	**ADAMS Accession No.**
10.1	Guidance Documents		
	Industry Guidance for Emergency Preparedness staffing and communications - NEI 12-01	May 2012	ML12125A412
	NRC letter endorsing NEI 12-01	May 15, 2012	ML12131A043
10.2	Licensee 60 day response and proposed alternative course of action	May 14, 2012	ML12136A064
10.3	Licensee 90 day response to communications and staffing information requests	June 11, 2012	ML12164A572
10.4	NRC letter – status of 90-day response	July 26, 2012	ML12200A106
10.5	Exelon Fleet communications assessment and implementation schedule	October 31, 2012	ML12306A199
10.6	NRC safety assessment of licensee's communications assessment	July 12, 2013	ML13114A067
10.7	Licensee Phase 1 staffing assessment (multi-unit sites only)	Not Required	Not Required
10.8	NRC Phase 1 staff assessment response	Not Required	Not Required
10.9	Licensee Phase 2 staffing assessment response		
	Licensee Phase 2 staffing assessment for functions related to mitigating strategies	December 17, 2014	ML14352A209
	Licensee response to RAI	April 28, 2015	ML15120A276
10.10	NRC Phase 2 staff assessment response	September 9, 2015	ML15231A036
10.11	NRC Inspection of Licensee Responses to EA-12-049, EA-12-051, and Emergency Preparedness Information		
	NRC Temporary Instruction 2515/191	October 6, 2014	ML14273A444
	NRC TI 2515/191 Inspection Report 2016-007	September 22, 2016	ML16266A301

	TABLE 11 Additional Licensee Commitments – SAMGs and Multisource Dose Assessments		
	Document	Date	ADAMS Accession No.
Update and Maintain SAMGs			
11.1	SECY-15-0065: Proposed Rulemaking: Mitigation of Beyond-Design-Basis Events (RIN 3150-AJ49)	April 30, 2015	ML15049A201
11.2	SRM-SECY-15-0065	August 27, 2015	ML15239A767
11.3	NEI Letter describing industry initiative to update and maintain SAMGs	October 26, 2015	ML15335A442
11.4	Exelon Fleet Commitment to Maintain SAMGs	December 4, 2015	ML15338A125
11.5	Clinton – Revision to Exelon Fleet Commitment to Maintain SAMGs	October 28, 2016	ML16302A455
11.6	NRC letter to NEI describing approach to SAMG oversight	February 23, 2016	ML16032A029
11.7	NRC Inspection Procedure 71111.18, "Plant Modifications" (Effective Date January 1, 2017)	November 17, 2016	ML16306A185
11.8	NEI 14-01, "Emergency Response Procedures and Guidelines for Extreme Events and Severe Accidents, Revision 1	February 2016	ML16224A619
Multisource Dose Assessments			
11.9	NEI Letter: Industry survey and plan for multiunit dose assessments	January 28, 2013	ML13028A200
11.10	NRC Letter to request additional information from NEI on multiunit dose assessment capability	February 27, 2013	ML13029A632
11.11	NEI Letter: Commitment for Implementation of Multiunit Dose Assessment Capability	March 14, 2013	ML13073A522
11.12	Exelon Response Regarding the Capability to Perform Offsite Dose Assessment During an Event Involving Multiple Release Sources	June 27, 2013	ML13179A098
11.13	NRC Acknowledgement of Licensee Dose Assessment Submittals	January 29, 2014	ML13233A205
11.14	COMSECY-13-0010	March 27, 2013	ML12339A262
11.15	SRM-COMSECY-13-0010	April 30, 2013	ML13120A339
11.16	NRC Inspection of Licensee Responses to EA-12-049, EA-12-051, and Emergency Preparedness Information		
	NRC Temporary Instruction 2515/191	October 6, 2014	ML14273A444
	NRC TI 2515/191 Inspection Report 2016-007	September 22, 2016	ML16266A301
11.17	Draft Final Rule: Mitigation of Beyond-Design-Basis Events NRC SECY-16-0142, Package	December 15, 2016	ML16301A005

	TABLE 11 Additional Licensee Commitments – SAMGs and Multisource Dose Assessments		
	Document	Date	ADAMS Accession No.
11.18	NEI 13-06, "Enhancements to Emergency Reponses Capabilities for Beyond Design Basis Accidents and Events, Revision 1	February 2016	ML16224A618

	TABLE 12 NRC Semi-Annual Status Reports to the Commission		
	Document	Date	ADAMS Accession No.
12.1	SECY-12-0025, Enclosure 8, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tōhoku Earthquake and Tsunami"	February 17, 2012	ML12039A103
12.2	SECY-12-0095 - Enclosure 1: Six-Month Status Update On Charter Activities - February 2012 - July 2012	July 13, 2012	ML12165A092
12.3	SECY-13-0020 - Third 6-Month Status Update On Response To Lessons Learned From Japan's March 11, 2011, Great Tohoku Earthquake And Subsequent Tsunami	February 14, 2013	ML13031A512
12.4	SECY-13-0095 - Fourth 6-Month Status Update on Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	September 6, 2013	ML13213A304
12.5	SECY-14-0046 - Fifth 6-Month Status Update on Response to Lessons Learned From Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	April 17, 2014	ML14064A520
12.6	SECY-14-0114 - Sixth 6-Month Status Update on Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	October 21, 2014	ML14234A498
12.7	SECY-15-0059 - Seventh 6-Month Status Update on Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	April 9, 2015	ML15069A444
12.8	SECY-15-0128: Eighth 6-Month Status Update on Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	October 14, 2015	ML15245A473
12.9	SECY-16-0043: Ninth 6 Month Status Update on Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	April 5, 2016	ML16054A255
12.10	SECY-17-0016: Status of Implementation of Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami	January 30, 2017	ML16356A084

SUBJECT: CLINTON POWER STATION, UNIT NO. 1 – DOCUMENTATION OF THE COMPLETION OF REQUIRED ACTIONS TAKEN IN RESPONSE TO THE LESSONS LEARNED FROM THE FUKUSHIMA DAI-ICHI ACCIDENT DATED JUNE 28, 2017

DISTRIBUTION:

PUBLIC	RidsNrrlaSLent Resource	SBailey, NRR
JLD R/F	RidsOgcMailCenter Resource	JBoska, NRR
RidsNRRJLD Resource	RidsOpaMail Resource	NSanfilippo, NRR
RidsNrrDorllpl3 Resource	RidsAcrsAcnw MailCtr Resource	RBernardo, NRR
RidsNrrDorl Resource	RidsNroDsea Resource	PBamford, NRR
RidsNrrPMClinton Resource	RidsRgn3MailCenter Resource	

ADAMS Accession No. ML17054C552

*Via e-mail

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