SUMMARY STATUS OF ACTIVE GENERIC ISSUES

Reactor Generic Issues

The U.S. Nuclear Regulatory Commission's (NRC's) Generic Issues (GI) program is currently evaluating three open GIs and tracking their resolution. These three open GIs are currently in the regulatory office implementation stage: GI-191, "Assessment of Debris Accumulation on PWR Sump Performance"; GI-199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants"; and GI-204, "Flooding of Nuclear Power Plant Sites Following Upstream Dam Failure." The information below summarizes the status of each open GI.

GI-191, "Assessment of Debris Accumulation on PWR Sump Performance"

This GI concerns the possibility that, following a loss-of-coolant accident (LOCA) in a pressurized-water reactor (PWR), debris accumulating on the emergency core-cooling system (ECCS) sump screen may cause clogging and restrict the flow of water to the ECCS pumps.

As a result of this GI and the related Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004, all PWR licensees increased the size of their containment sump strainers, significantly reducing the risk of debris clogging the strainers.

A related issue that needs to be resolved to close GI-191 is the potential for debris to bypass the sump strainers and enter the reactor core. In 2008, the NRC staff determined that additional industry-sponsored testing was necessary to resolve this issue. In 2012, the industry performed and completed the additional testing and submitted a topical report to the NRC. In 2013, the NRC staff issued a safety evaluation of the topical report, finding it an acceptable model for assessing the effects of sump-strainer-bypassed fibrous, particulate, and chemical debris on core cooling in PWRs.

In December 2010, the Commission determined that it was prudent to allow the nuclear industry to complete testing on in-vessel effects and zone of influence and to develop a path forward by mid-2012. The Commission directed the NRC staff to evaluate alternative approaches, including risk-informed approaches, for resolving GI-191 and to present them to the Commission by mid-2012. Based on the interactions with stakeholders and the results of the industry testing, in 2012, the NRC staff developed three options that would provide licensees with alternative approaches for resolving GI-191. The staff documented and proposed these options to the Commission in SECY-12-0093, "Closure Options for Generic Safety Issue-191, Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance," dated July 9, 2012. All options require licensees to demonstrate compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors." The Commission issued a staff requirements memorandum on December 14, 2012, approving the options for closing GI-191.

Licensees have since notified the NRC of the option that they have selected and are developing proposed technical resolutions based on the option selected. The NRC staff is reviewing the proposed technical resolutions as licensees submit them. All Option 1 plants have been closed out as of June 2016. To date, nine sites have successfully resolved GI-191.

GI-199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants"

This GI addresses how current estimates of the seismic hazard level at some nuclear sites in the central and eastern United States (CEUS) might be higher than the values used in their original designs and previous evaluations. Following collaboration with the Electric Power Research Institute (EPRI), the NRC staff issued a safety/risk assessment report, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants." In addition, the NRC staff issue Information Notice 2010-18, "Generic Issue 199, 'Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants,'" dated September 2, 2010.

Following the March 2011 nuclear event in Japan, the NRC incorporated GI-199 into its Fukushima response activities. Consequently, as part of a March 12, 2012, request for information under 10 CFR 50.54(f), the NRC asked all nuclear power plants to reevaluate their seismic hazards using present-day guidance and methods. The CEUS sites submitted their reevaluated seismic hazard reports in March 2014. Based on the reports, the NRC staff determined the need to complete future seismic probabilistic risk assessments (SPRAs) or other seismic evaluations, as documented in a letter to the CEUS sites, dated October 27, 2015.

As of September 2016, of the original 61 sites, the staff has completed its assessments of the reevaluated seismic hazards reports for all 58 CEUS sites and 1 site in the western United States (WUS). The staff is still reviewing the reports for the remaining two WUS plants. The screening results were refined based on the completed staff assessments. Overall, 20 operating reactor sites (18 CEUS sites and 2 WUS sites) have screened in for completion of SPRAs. Of the remaining 41 sites (40 CEUS sites and 1 WUS site), 8 CEUS sites and the 1 WUS site have screened out of any further evaluations. The remaining 32 CEUS sites are required to perform limited-scope evaluations (i.e., high-frequency evaluations, low-frequency evaluations, or spent fuel pool evaluations). Sites are required to complete the individual plant evaluations as specified in the NRC's final determination letter dated October 27, 2015. The NRC staff has started a review of early submittal limited-scope evaluations for spent fuel pool and low-frequency confirmation.

Additionally, of the original 61 sites, the NRC initially selected 48 sites (later reduced to 34 sites) to perform expedited seismic evaluation process (ESEP) reports that were due in December 2014. The ESEP reports confirm that adequate seismic margin exists to safely shut down the plants without the need for modifications while lengthier seismic evaluations were being conducted. The NRC staff has completed its reviews of all 34 ESEP reports. Plant upgrades that do not require an outage will be completed by December 2016 for CEUS plants and by June 2018 for WUS plants.

GI-204, "Flooding of Nuclear Power Plant Sites Following Upstream Dam Failure"

This GI relates to potential flooding effects from upstream dam failure(s) on nuclear power plant sites, spent fuel pools, and sites undergoing decommissioning with spent fuel stored in spent fuel pools. The Office of Nuclear Reactor Regulation proposed this GI in July 2010, and it has been subsumed as part of the implementation of the recommendations from the agency's Japan Near-Term Task Force (NTTF).

In March 2012, the NRC sent letters to licensees requesting the reevaluation of all flood hazards, including dam failures, using present-day guidance and methodologies. All sites have

completed flood hazard reevaluations in response to the March 2012 request. The NRC has begun to issue staff assessments of the flood hazard reevaluation reports and expects to complete them by the end of 2017. The NRC requires those sites that had flood-causing mechanisms that exceeded the current design basis are required to perform an additional analysis depending on the hazard and evaluate the site's response to the updated flood hazard. Focused evaluations are due to the NRC in mid-2017, and integrated assessments are due by the end of 2018. It is anticipated that the staff review of the assessments will be completed by 2021.

STATUS SUMMARY OF ACTIVE GENERIC ISSUES DURING THE FOURTH QUARTER OF FISCAL YEAR 2016					
GI No.	**Title**	**CURRENT STAGE**	**PLANNED CLOSURE**	**MONTHS OPEN**	**REGULATORY EFFECTS**
191	Assessment of Debris Accumulation on PWR Sump Performance	Regulatory Office Implementation	December 2018	241	Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant-Accident" Regulatory Guide 1.229, "Risk-Informed Approach for Addressing the Effects of Debris on Post-Accident Long-Term Core Cooling" NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Sections 6.2.2 and 6.3 Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors" Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized Water Reactors"

STATUS SUMMARY OF ACTIVE GENERIC ISSUES DURING THE FOURTH QUARTER OF FISCAL YEAR 2016					
GI No.	**Title**	**CURRENT STAGE**	**PLANNED CLOSURE**	**MONTHS OPEN**	**REGULATORY EFFECTS**
199	Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants	Regulatory Office Implementation	December 2019	137	Information Notice (IN) 2010-018, "Generic Issue 199, 'Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants'" IN 2010-019, "Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States" Request for Information letter dated March 12, 2012, "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident"
204	Flooding of Nuclear Power Plant Sites Following Upstream Dam Failure	Regulatory Office Implementation	December 2021	60	Request for Information letter dated March 12, 2012, "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident"