

ENCLOSURE: GENERIC ISSUE MANAGEMENT CONTROL SYSTEM REPORT
FOR THE SECOND HALF OF FISCAL YEAR 2019

SUMMARY STATUS OF ACTIVE GENERIC ISSUES

During this reporting period (March 2019 through October 2019), the U.S. Nuclear Regulatory Commission (NRC) staff continued its implementation of two open generic issues (GIs) and its assessment of one proposed GI. The staff closed out one of the open GIs (GI-191), as discussed below.

The staff continued its assessment of the proposed GI on the effects of high-energy arcing faults involving aluminum at nuclear power plants to determine whether the issue should proceed to the Regulatory Office Implementation stage of the GI process. In particular, the Office of Nuclear Regulatory Research (RES) has continued conducting confirmatory tests involving aluminum components in high-energy arcing faults. The test results will be used in future pilot plant studies to calculate any increase in risk.

The Office of Nuclear Reactor Regulation (NRR) is currently in the process of resolving the two open GIs (GI-199 and GI-204) that are in the Regulatory Office Implementation stage of the GI process. The sections below summarize the regulatory actions associated with these open GIs. Additional information on the current status of these open GIs appears on the GI dashboard on the NRC's public Web site: <http://www.nrc.gov/about-nrc/regulatory/genissues/dashboard.html>.

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

GI-191 raised a concern of the possibility that after a loss-of-coolant accident in a pressurized-water reactor (PWR), debris accumulating on the emergency core cooling system sump strainers may result in clogging and restricting water flow to the emergency core cooling pumps. In response to GI-191, all PWR licensees increased the size of their containment sump strainers significantly, thereby reducing the risk of debris clogging the strainers. Hence, all licensees took actions to mitigate the safety concern originally identified in GI-191.

During the review of GI-191, the staff identified a related concern about debris that may pass through the sump strainers and enter the reactor core. The NRC issued Generic Letter (GL) 2004 02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized Water Reactors," dated September 13, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML042360586), to address this concern. However, after extensive tests and evaluations, the NRR staff determined that the risk of core damage from debris passing through the strainers was low and was not a significant issue requiring continuance in the GI process, stated in memorandum from NRR on July 22, 2019, to the RES, "Closure Memorandum for Generic Safety Issue 191," (ADAMS Accession No. ML19157A120). As a result, on July 23, 2019, RES issued a memorandum, "Closure of Generic Issue GI-191, 'Assessment of Debris Accumulation on PWR Sump Performance,'" (ADAMS Accession No. ML19203A303), closing out 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 might be higher than the values used in their original designs and previous evaluations. Following collaboration with the Electric Power Research Institute, the NRC staff issued a safety/risk assessment report, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing

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Plants,” in August 2010 (ADAMS Accession No. ML100270639). In addition, on September 2, 2010, the NRC staff issued Information Notice 2010-18, “Generic Issue 199, ‘Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants’” (ADAMS Accession No. ML101970221).

Following the March 2011 nuclear event at the Fukushima Dai-ichi nuclear reactors in Japan, the NRC incorporated GI-199 into its response activities. Consequently, as part of a March 12, 2012, request for information under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(f), the NRC asked all nuclear power plants to reevaluate their seismic hazards using present-day guidance and methods (ADAMS Accession No. ML12053A340). All sites submitted their reevaluated seismic hazard reports to the NRC by March 2015. The staff completed its assessment of the reevaluated seismic hazard reports by December 2016.

Based on the staff's assessment of the licensees' reevaluated seismic hazards reports, the staff refined the requirements for individual plants to complete seismic probabilistic risk assessments (SPRAs) or other limited-scope seismic evaluations. The NRC staff determined which sites were required to complete individual plant evaluations and specified the level of evaluation in the NRC's final determination letter dated October 27, 2015 (ADAMS Accession No. ML15194A015). Nine sites screened out of any further seismic evaluations.

The NRC staff screened in 34 sites to submit expedited seismic evaluation process (ESEP) reports. The ESEP reports confirmed that adequate seismic margin exists to safely shutdown 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. Licensees have notified the NRC that all required upgrades have either been completed or deferred (with justification) to the SPRA.

The NRC staff screened in 52 sites to perform 1 or more limited-scope evaluations (i.e., low-frequency evaluations, high-frequency evaluations, spent fuel pool low-hazard evaluations, or spent fuel pool high-hazard evaluations):

- The NRC staff completed reviews of 1 low-frequency evaluation, 34 high-frequency evaluations, 30 spent fuel pool low-hazard evaluations, and 8 spent fuel pool high-hazard evaluations.
- The NRC staff has now completed its review of all 52 sites requiring a limited-scope seismic evaluation. With the limited scope evaluations completed, only those sites needing to perform an SPRA have the potential for further regulatory actions.

The NRC required 20 sites to submit SPRAs to the NRC for review and approval. These sites had the following status as of October 2019:

- Three sites provided supplemental information and were subsequently screened out from having to complete an SPRA. No further regulatory actions are required for the following sites:
 - Pilgrim (permanently shutdown on May 31, 2019)
 - McGuire
 - Catawba

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- Ten sites have submitted their SPRAs to the NRC for staff review and approval.
 - The NRC has completed its review of seven sites. No further regulatory actions are required for these sites. During this reporting period, the NRC staff completed its reviews of the SPRAs for North Anna, Peach Bottom, and VC Summer.
 - The SPRAs for the following three sites are currently under NRC review:
 - Oconee
 - Columbia
 - Callaway
- Five sites are expected to submit a SPRA to the NRC for staff review and approval before December 2019. During this reporting period, the NRC received SPRAs from Callaway, Columbia, and Sequoyah.
 - Browns Ferry
 - Cook
 - Dresden
 - Sequoyah (received October 11, 2019)
 - Robinson
- Two sites have received NRC approval for deferrals past their early shutdown dates:
 - Indian Point
 - Palisades

The NRC staff issued a letter to all licensees, "Treatment of Reevaluated Seismic Hazard Information Provided Under Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," (ADAMS Accession No. ML19140A307), on July 3, 2019. The treatment of seismic hazard information reflects the Commission's direction in the Affirmation Notice and Staff Requirements Memorandum (SRM) dated January 24, 2019, (ADAMS Accession No. ML19023A038), associated with SECY-16-0142, "Draft Final Rule- Mitigation of Beyond-Design-Basis Events [MBDBE] (RIN 3150-AJ49)" (ADAMS Accession No. ML 16291A186). The letter stated that based upon the reevaluated seismic hazard information that has been provided to date, only SPRA report reviews that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending, or revoking a license.

In summary, the NRC staff has completed its assessment and closed out actions on seismic hazard reevaluations for 49 reactor sites. Pilgrim permanently shutdown in May 2019 and has received relief from the response requirements of the 50.54(f) letter. The remaining 8 sites are pending submittal and review of their SPRAs, and 2 sites have received a due date deferral to a date beyond the anticipated early shutdown date. Based upon current schedules, the staff expects that it will complete activities associated with GI-199 by the end of 2020.

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

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

In March 2012, the NRC sent letters to licensees requesting information under 10 CFR 50.54(f) about the reevaluation of all flood hazards, including dam failures, using present-day guidance and methodologies (ADAMS Accession No. ML12053A340). All sites have completed flood hazard reevaluations in response to the March 2012 request. The NRC has issued staff assessments for all the flood hazard reevaluation reports.

The NRC required those sites that had flood-causing mechanisms that exceeded the current design basis to perform an additional analysis. On June 30, 2015, the staff presented a plan to the Commission in COMSECY-15-0019, “Closure Plan for the Reevaluation of Flooding Hazards for Operating Nuclear Power Plants” (ADAMS Accession No. ML15153A104), to complete the analysis. In response, on July 28, 2015, the Commission issued an SRM to COMSECY-15-0019 approving the staff’s plan (ADAMS Accession No. ML15209A682). The plan included the option for sites to perform a focused evaluation to fully complete their response to the 10 CFR 50.54(f) request for information without needing to perform an integrated assessment depending on the hazard and the site’s response to the updated flood hazard.

On April 21, 2016, the Nuclear Energy Institute (NEI) issued NEI 16-05, “External Flooding Assessment Guidelines,” (ADAMS Accession No. ML16159A077), that describes the Flooding Impact Assessment Process (FIAP) to assess the impacts of flood mechanisms not bounded by the design-basis flood level. The NRC endorsed revision 1 of NEI 16-05 (ADAMS Accession No. ML16165A178) as an acceptable method to complete the FIAP. The FIAP provides guidance for licensees to perform either a focused evaluation or an integrated assessment.

The staff expects 54 sites to submit either focused evaluations or integrated assessments to the NRC for review. The other six sites have their reevaluated hazard mechanisms bounded by the site’s current design basis and are not required to submit additional evaluations. The status of plant evaluations as of October 2019 is discussed below:

Forty-eight sites met the criteria to perform a focused evaluation:

- Forty-six sites are expected to submit focused evaluations to the NRC:
 - Forty-five sites have submitted their focused evaluations to the NRC.
 - The NRC staff has issued its reviews for 42 sites. No further regulatory actions are required for these sites. During this reporting period, the staff completed its review of focused evaluations for Catawba and Davis-Besse.
 - During this reporting period, the NRC received focused evaluations from the following three sites and are currently being reviewed by NRC staff:

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- * Browns Ferry
- * Sequoyah
- * Watts Bar

* Received on October 11, 2019

- One site, Perry, is expected to submit a focus evaluation to the NRC prior to December 31, 2019.
- One site, Indian Point, has been granted a due date to a date after their anticipated early permanent shutdown date.
- One site, Pilgrim, was permanently shutdown in May 2019 and has received relief from the response requirements of the 50.54(f) letter.

Six sites meet the criteria to perform an integrated assessment:

- Five sites have submitted integrated assessments to the NRC.
 - The NRC staff has issued its evaluation of integrated assessments for two sites. No further actions are required for these sites. During this reporting period, the staff completed its review of the integrated assessment for Quad Cities.
 - The NRC staff is currently reviewing the integrated assessments for the other three sites. During this reporting period, Surry submitted an integrated assessment to the NRC on October 1, 2019, to replace their previously submitted focused evaluation.
- One site, Millstone, is expected to submit its integrated assessment prior to December 31, 2019.

The NRC staff issued a letter to all licensees, "Treatment of Reevaluated Flood Hazard Information Provided Under Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," (ADAMS Accession No. ML19067A247), on August 20, 2019. The treatment of flood hazard information reflects the Commission's direction in the Affirmation Notice and Staff Requirements Memorandum (SRM) dated January 24, 2019 (ADAMS Accession No. ML 19023A038), associated with SECY-16-0142, "Draft Final Rule- Mitigation of Beyond-Design-Basis Events [MBDBE] (RIN 3150-AJ49)" (ADAMS Accession No. ML 16291A186). The letter stated that based on the reevaluated flood hazard information that has been provided to date, only flooding focused evaluations and integrated assessments that have not yet received a staff assessment could potentially lead to the staff identifying a need for modifying, suspending, or revoking a license.

In summary, the NRC staff has completed its assessment and closed out all required actions concerning flooding hazard reevaluations for 50 sites, with 8 sites pending review and submittal of their focused evaluations or integrated assessments, and two sites have received a deferral. The NRC expects to receive and conduct a review of the remaining four focused evaluations and one integrated assessment before the end of calendar year 2019. The NRC expects to

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complete its review of these remaining assessments and complete any regulatory actions in calendar year 2020.