December 27, 2013

MEMORANDUM TO: Timothy J. McGinty, Director
Division of Safety Systems
Office of Nuclear Reactor Regulation

Scott C. Flanders, Director
Division of Site Safety and Environmental Analysis
Office of New Reactors

Kathy H. Gibson, Director
Division of Systems Analysis
Office of Nuclear Regulatory Research

Lawrence E. Kokajko, Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

FROM: Richard P. Correia, Director ***/RA/ P. Madden for***
Division of Risk Analysis
Office of Nuclear Regulatory Research

SUBJECT: GENERIC ISSUE MANAGEMENT CONTROL SYSTEM REPORT (FY 2014, Q1)

Enclosed is the first Generic Issue Management Control System (GIMCS) report of fiscal year (FY) 2014. As part of the Generic Issues Program, this report is sent to those division directors responsible for one or more of the active Generic Issues (GIs) and to the NRR counterpart for RES GI Program activities. The following table summarizes the status of GIs, and the subsequent paragraphs provide a narrative summary of the status of these GIs. Additional detail is provided in the enclosure. This memorandum and the enclosed report cover the period from September 1, 2013, through November 30, 2013.

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***Discussion***

**Commission Distribution**

As requested by the Commission, this GIMCS report will be distributed to Commission offices on a quarterly basis for information.

**Improving Communications**

The GI Program staff is in the process of replacing the quarterly text based GIMCS report with a web-based dashboard to show the status of active generic issues in a simple graphic format. The dashboard will have clear visual indication of GI status with interim milestones and the ability to drill down for detailed information. For issues in regulatory office implementation, the intent is to provide implementation status by nuclear power plant (NPP). For example, the dashboard will be able to show how many NPPs need a modification, how many NPPs have installed the modification, and how many NPPs have been inspected by the NRC staff and have fully completed resolving the issue.

| *Status Summary of Active Generic Issues during First Quarter (Q1) of FY 2014* | | | | | |
|---|---|---|---|---|---|
| *GI No.* | *Title* | *Current Stage* | *Planned Closure* | *Months Open* | *Regulatory Impacts* |
| *191* | *Assessment of Debris Accumulation on PWR Sump Performance* | *Regulatory Office Implementation* | *12/2018* | *207* | *Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant-Accident"; NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition"; Bulletin 2003-01; Generic Letter (GL) 2004-02* |
| *193* | *BWR ECCS Suction Concerns* | *Technical Assessment* | *To Be Determined* | *139* | *To Be Determined* |

| *Status Summary of Active Generic Issues during First Quarter (Q1) of FY 2014* | | | | | |
|---|---|---|---|---|---|
| *GI No.* | *Title* | *Current Stage* | *Planned Closure* | *Months Open* | *Regulatory Impacts* |
| *199* | *Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States for Existing Plants* | *Regulatory Office Implementation*<br><br>*Activities Covered by 10 CFR 50.54(f) Letters on items 2.1, 2.3 & 9.3of the Japan Near-Term Task Force (NTTF) Recommendations* | *To Be Determined* | *103* | *Information Notice (IN) 2010-018, "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,"*<br><br>*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"* |

| *Status Summary of Active Generic Issues during First Quarter (Q1) of FY 2014* | | | | | |
|---|---|---|---|---|---|
| *GI No.* | *Title* | *Current Stage* | *Planned Closure* | *Months Open* | *Regulatory Impacts* |
| *204* | *Flooding of Nuclear Power Plant Sites Following Upstream Dam Failures* | *Regulatory Office Implementation*<br><br>*Activities Covered by 10 CFR 50.54(f) Letters on Items 2.1, 2.3 & 9.3of the Japan NTTF Recommendations* | *To Be Determined* | *23* | *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"* |

In accordance with Management Directive 6.4, "Generic Issues Program," the NRC transferred the responsibility for implementation and verification of GI-191, GI-199, and GI-204 to the Office of Nuclear Reactor Regulation (NRR). Through the Japan Lessons Learned Project Directorate working groups, NRR is coordinating with the Office of New Reactors (NRO) on GI-199 and GI-204. The Generic Issues Program will continue to track the status of all GIs and report on them until completion. GI-191 is being processed in NRR, Division of Safety Systems.

***Active Reactor Generic Issues***

**GI-191, Regulatory Office Implementation**, "Assessment of Debris Accumulation on Pressurized Water Reactor (PWR) Sump Performance" (pages 1–6 of the GIMCS report). This GI concerns the possibility that, following a loss of coolant accident in a PWR, debris accumulating on the emergency core cooling system sump screen may result in clogging and restricting water flow to the pumps. Because of this GI and the related generic letter (GL) 2004-02, all PWR licensees increased the size of their containment sump strainers substantially, which significantly reduced the risk of strainer clogging. Some licensees removed fibrous or particulate insulation, changed their sump pH buffers to reduce chemical effects, or installed debris interceptors to reduce the amount of debris that can reach the strainers. An associated issue that needs to be resolved to close GI-191 regards 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 support resolution of this issue. The industry performed and completed its additional testing in 2011. The NRC staff is currently evaluating the testing results. The Commission issued a staff requirements memorandum (SRM) 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 in 2011 and to develop a path forward by mid-2012. The Commission directed the staff to evaluate alternative approaches, including risk-informed approaches, for resolving GI-191 and to present them to the Commission by mid-2012. The Commission further directed that, after development of the path

forward, modifications should be completed within two nuclear power plant (NPP) operating cycles to address debris from smaller loss of coolant accidents (LOCAs); and within three NPP operating cycles to address debris from larger LOCAs. In July 2012, the staff proposed options for resolution and requested a decision on policy issues from the Commission with options for the path forward to resolve GI-191, including risk-informed options. (SECY-12-0093, "Closure Options for Generic Safety Issue-191, Assessment of Debris Accumulation on Pressurized Water Reactor Sump Performance"). The Commission endorsed the staff's proposed options for resolving GI-191 in a Staff Requirements Memorandum dated December 14, 2012. As part of the resolution process, licensees seeking additional time to pursue new testing or new approaches (including risk-informed approaches) will implement measures to mitigate the potential for debris blockage of the strainer or debris entry into the reactor core. The staff currently projects closure for this GI for December 2018 that will include verification inspections by the Regions.

**GI-193, Technical Assessment**, "Boiling Water Reactor (BWR) Emergency Core Cooling System (ECCS) Suction Concerns" (pages 7–10 of the GIMCS report). This GI involves an evaluation of possible failure or degraded performance of the ECCS pumps due to unknown quantities of noncondensible gas in the suction piping that could cause gas binding, vapor locking, or cavitation.

Completed portions of the Task Action Plan resulted in a basic understanding of the overall phenomena and a preliminary assessment that continued work on the GI is warranted. The next phase will attempt to quantify the gas void fraction present at different locations in the suppression pool as a function of time following a LOCA. Ultimately, this may identify the possible need for a post-LOCA suppression pool ECCS pump suction strainer "exclusion zone." "Exclusion zone" is the volume below or around the downcomer exhaust, which is expected to contain a large concentration of noncondensable gas from the drywell. The "exclusion zone" will help to define boundary zones such that if a suction strainer is located in a boundary zone, the ECCS pump may be vulnerable.

**GI-199, Regulatory Office Implementation**, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States for Existing Plants" (pages 11–14 of the GIMCS report). The NRC opened GI-199 to assess the implications of updated seismic data and methods for Central and Eastern U.S. (CEUS) operating plants. The staff's confirmatory analysis concluded that the calculated seismic hazard for some operating plants in the CEUS had increased. The NRC issued IN 2010-18 to nuclear power plants and independent spent fuel storage installations (ISFSIs). The agency issued IN 2010-19 to fuel cycle facilities. These INs stated that the NRC would follow the appropriate regulatory process to request that operating plants, fuel cycle facilities, and ISFSIs provide specific information about their facilities to enable the staff to complete the regulatory assessment and to identify and evaluate candidate backfits. NRR developed a draft GL to request needed data from power reactor licensees. The NRC originally intended the request to apply only for power reactor licensees in the CEUS, but in light of the March 2011 Japanese earthquake, NRR expanded the scope of the request to include all U.S. power reactor licensees.

The NRC released the draft GL to the public for comment in September 2011. The preparation of the GL was halted because the agency incorporated this GI into the work it is doing in response to the Fukushima Dai-ichi accident. The NRC has requested that all nuclear power plants perform a reevaluation of seismic hazard using present-day guidance and methodologies. For plants in the CEUS, the seismic hazard reevaluations will be completed by March 2014. Plants in the Western United States (WUS) will complete the seismic hazard reevaluations by March 2015. Depending on the comparison between the reevaluated seismic

hazard and the design basis, the results is either no further risk evaluation or the performance of a plant risk assessment if the reevaluated hazard exceeds the plant's design basis.

If required, the higher priority risk evaluations for both CEUS and WUS plants must be completed by June 2017. The priority for the subsequent completion of the risk assessments by nuclear power plants will be determined by the NRC and be based on the following factors: (1) the extent to which the reevaluated hazard exceeds the current design basis, (2) the absolute seismic hazard based on an examination of the probabilistic seismic hazard curves for the site, and (3) previous estimates of plant capacity (e.g., IPEEE insights).

While the risk evaluations are ongoing, plants will also perform near-term expedited seismic evaluations of key equipment needed to protect the reactor core following a beyond design-basis seismic event. The expedited seismic evaluations for CEUS plants will completed by December 2014 and by January 2016 for WUS plants. As a result of the expedited seismic evaluations, plant upgrades not requiring an outage will be completed by December 2016 for CEUS plants and by June 2018 for WUS plants.

**GI-204, Regulatory Office Implementation**, "Flooding of Nuclear Power Plant Sites Following Upstream Dam Failures" (page 15–16 of the GIMCS report). This GI pertains to the flooding of U.S. nuclear power plant sites following upstream dam failure. Possible effects on spent fuel pools at nuclear power plant sites are also within the scope of the GI. The NRC completed a screening analysis and approved the issue as a GI on February 29, 2012. This issue is similar to GI-199 in that the NRC was examining both issues prior to the Fukushima Dai-ichi accident in Japan. The NRC is addressing both issues as part of its response to the recommendations of the agency's NTTF review of insights from the accident, specifically, NTTF recommendation 2.1. Request for information letters related to the reevaluation of flood hazards were issued in March 2012.

A May 11, 2012, letter (ADAMS Accession number ML12097A510) to all power reactor licensees states that licensees, separated by categories, must submit their flood hazard reevaluations to the NRC in three prioritized response due dates by March 2013, March 2014, and March 2015. The NRC staff used criteria described in the letter to assign plants a schedule (category) for completing the flood hazard reevaluations. The categories correspond to the length of time allotted (prioritization) to complete the hazard reevaluation and report the results to the NRC.

Out of the 22 sites that must submit the NTTF Recommendation 2.1 flood hazard reevaluation reports (FHRRs) by March 2013, 16 sites have submitted the FHRR on time. One site requested an extension and submitted the FHRR in May 2013. The remaining five sites requested an extension, which the NRC approved with the earliest response due December 31, 2013, the other responses were extended to the other prioritized response due dates of March 2014 or March 2015. The submitted FHRRs are currently under review by Staff. All other sites are on schedule in submitting the FHRRs by their prioritized response due dates.

***Materials-related Generic Issues***

At the end of the reporting period, no materials-related GIs remain to be resolved.

The RES GI Program staff will continue to track the staff's progress in resolving GIs and is available to support any significant challenges that may arise during their resolution.

Enclosure:
As stated

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Enclosure:
As stated

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