

April 13, 2012

MEMORANDUM TO: William H. Ruland, Director  
Division of Safety Systems  
Office of Nuclear Reactor Regulation

Patrick L. Hiland, Director  
Division of Engineering  
Office of Nuclear Reactor Regulation

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

SUBJECT: GENERIC ISSUE MANAGEMENT CONTROL SYSTEM REPORT  
(FY 2012, Q2)

Enclosed is the second Generic Issue Management Control System (GIMCS) report in FY 2012. This report is sent to the Division Directors responsible for one or more of the Generic Issues (GIs). The following table summarizes the status of GIs, and the subsequent paragraphs provide a narrative summary of the current status of these GIs. This memorandum and the enclosed GIMCS report cover the period of December 1, 2011 through February 29, 2012.

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Status Summary of Active Generic Issues During Q2 of FY 2012						
GI No.	Title	Current Stage	Status	Planned Closure	Months Open	Regulatory Impacts
186	Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants	Complete	Complete	Completed 1/27/12	154	NUREG-1774; Standard Review Plan (NUREG-0800), Section 9.1.5
189	Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident	Regulatory Office Implementation		6/2012	130	Title 10, Sections 50.34 and 50.44, of the <i>Code of Federal Regulations</i> (10 CFR 50.34 and 50.44)
191	Assessment of Debris Accumulation on PWR Sump Performance	Regulatory Office Implementation		To Be Determined	186	Regulatory Guide 1.82, Rev. 3; NUREG-0800; GL 1985-22; Bulletin 2003-01; GL 2004-02
193	BWR ECCS Suction Concerns	Technical Assessment	Active	To Be Determined	118	To Be Determined
199	Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States for Existing Plants	Regulatory Office Implementation  Activities covered by 50.54(f) letters on items 2.1 & 2.3 of the Japan NTF recommendations		To Be Determined	82	IN 2010-018
204	Flooding of Nuclear Power Plant Sites Following Upstream Dam Failures	Declared a GI on February 29, 2012		To Be Determined	2	To Be Determined

GI-186 is complete. GI-189, GI-191, GI-199, and GI-204 have exited the Generic Issues Program. The responsibility for their implementation and verification was transferred to the Office of Nuclear Reactor Regulation (NRR) in accordance with Management Directive 6.4, "Generic Issues Program," dated November 17, 2009 (Agencywide Documents Access & Management System (ADAMS) Accession No. ML083181192). Their status will continue to be tracked and reported in GIMCS until completion by the program office.

### ***Reactor Generic Issues***

**GI-186, Implementation and Verification, Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants** (pages 1 – 3 of the GIMCS report). In July 2008, Nuclear Energy Institute (NEI) submitted final industry-developed guidelines in NEI 08-05 to address reactor vessel head drop consequence analyses and to establish a highly reliable handling system for reactor vessel head lifts. On September 5, 2008, the U.S. Nuclear Regulatory Commission (NRC) staff issued a safety evaluation endorsing these guidelines, with one exception regarding acceptance criteria for the consequence analysis. The staff also issued supplementary inspection guidance for refueling and other outage activities that addresses implementation of the industry initiative on control of heavy loads. This inspection guidance was posted for inspector use and public review on September 18, 2008. The NRC issued Regulatory Issue Summary 2008-28, "Endorsement of Nuclear Energy Institute Guidance for Reactor Vessel Head Heavy Load Lifts," to notify stakeholders of NRC endorsement of the guidelines in NEI 08-05. The NRC staff issued a request for the Advisory Committee on Reactor Safeguards (ACRS) review of a draft closeout memorandum on September 7, 2011. The request and draft closeout memorandum are available under the ADAMS Package Accession No. ML112380189. In a memorandum to the NRC Executive Director for Operations dated October 12, 2011 (ADAMS Accession No. ML11284A132), the Executive Director of the ACRS reported that the ACRS considered the proposed closeout of GI-186 during the 587th meeting of the ACRS held October 6-8, 2011, and that the Committee had no objection to staff issuance of the proposed closeout. In a memorandum to the NRC Executive Director for Operations dated January 27, 2012 (ML113050589), the Director of the Office of Nuclear Reactor Regulation reported that GI-186 was closed.

**GI-189, Regulatory Office Implementation, Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion during a Severe Accident** (pages 4 –8 of the GIMCS report). The NRC staff has reviewed industry proposals from licensees affected by GI-189 and has concluded that those proposed modifications will resolve GI-189 and provide benefit for some separate security scenarios which were identified during the course of the GI-189 review. On June 15, 2007, the NRC staff issued letters to affected licensees accepting the commitments to changes that enhance plant capabilities to mitigate the potential for early containment failure from hydrogen combustion. Since that time, licensee implementation and NRC verification inspections performed pursuant to NRC Temporary Instruction (TI) 2515/174, "Hydrogen Igniter Backup Power Verification," have been completed at all 9 affected sites. In November 2010, the staff received a commitment from the Tennessee Valley Authority to implement measures at Watts Bar Unit 2 equivalent to those measures verified to have been implemented at Watts Bar Unit 1. Final closeout was extended to address the technical issue in the licensing review for Watts Bar Unit 2, and to assess the impact of the reactor events in Japan. Since the last update, it has been determined that the findings from the Japan event will not impact the closure of GI-189. Final closeout is planned for June 2012.

**GI-191, Regulatory Office Implementation, Assessment of Debris Accumulation on Pressurized Water Reactor (PWR) Sump Performance** (pages 9 – 14 of the GIMCS report).

This generic issue 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 restrict water flow to the pumps. As a result of this generic issue and the related generic letter (GL 2004-02), all PWR licensees increased the size of their containment sump strainers, significantly reducing the risk of strainer clogging. An associated issue, which 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. Some testing was performed, but testing and NRC evaluation are continuing because of NRC staff concerns about the testing results and related assumptions. 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 SRM directed the staff to evaluate alternative approaches, including risk-informed approaches, for resolving GSI-191 and to present them to the Commission by mid 2012. There has been no change in the schedule since the last update.

**GI-193, Technical Assessment, Boiling Water Reactor (BWR) Emergency Core Cooling System (ECCS) Suction Concerns** (pages 15 – 18 of the GIMCS report).

This GI involves an evaluation of suppression pool designs, the dynamics of air entrainment in the suppression pool, and the effects of air entrainment on ECCS pump performance. Based upon a staff request, the BWR owners group provided voluntary data regarding the characteristics of LOCA phenomena at the earliest stages of the postulated accidents plus general information about wetwell geometries in relation to ECCS suction strainers. Staff is continuing efforts to estimate the maximum potential void fraction through scale experiments conducted at Purdue University. The experiments should provide clarification as to the potential for bubbles formed during a simulated LOCA blowdown to be transported in the wetwell to the ECCS pump inlets and, consequently, ingested into the ECCS pump impellers. The test plan is available at ADAMS Accession No. ML100750236. Steady state tests began in mid-June 2010 and transient tests were completed by December 2010. The final report was received in March 2011. The staff's evaluation of the test results and developing recommendations for a path forward has taken more time than planned. The Safety/Risk Assessment is scheduled to be completed on October 31, 2012.

**GI-199, Safety/Risk Assessment, Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States for Existing Plants** (pages 19 – 22 of the GIMCS report).

GI-199 was opened to assess the implications of updated seismic data and methods for Central and Eastern U.S. (CEUS) operating plants. For the Safety/Risk Assessment, RES evaluated the effects of new seismic hazard data and methods on U.S. nuclear plants, and collaborated with the Electric Power Research Institute to assure a sound technical approach. The Safety/Risk Assessment Panel recommended in September 2010 that further actions be taken to address GI-199 outside the GI Program. The issue was transferred to NRR for Regulatory Office Implementation. Information Notices were issued to inform stakeholders of the issuance of the GI-199 Safety/Risk Assessment Report. Information Notice IN 2010-18 was issued to nuclear power plants and independent spent fuel storage installations (ISFSI); it stated that the NRC will follow the appropriate regulatory process to request operating plants and ISFSIs to provide specific information relating to their facilities to enable the NRC staff to

complete the Regulatory Assessment where candidate backfits are identified and evaluated. Information Notice IN 2010-19 was issued to fuel cycle facilities. NRR developed a draft Generic Letter to request needed data from power reactor licensees. The request was originally intended only for power reactor licensees in the CEUS but, in light of the recent Japanese earthquake, NRR expanded the scope of the request to include all U.S. power reactor licensees. The Japan Near-Term Task Force assessment resulted in 10CFR 50.54 (f) letters that addressed GI-199 in its entirety in recommendations 2.1 and 2.3 (ML12056A046). The Japan Lessons Learned Project Directorate (JLD) will assume the work of GI-199.

**GI-204, Generic Issue Acceptance, Flooding of Nuclear Power Plant Sites Following Upstream Dam Failures** (page 23 of the GIMCS report). The Generic Issue 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 Generic Issue. This Generic Issue was publically announced on March 6, 2012 in News Release No. 12-021, which is available in the Agency-wide Documents and Management System (ADAMS) under accession number ML120690635. The issue was recommended for approval by a review panel on December 7, 2011 (ML113260158) following the completion of a screening analysis. The screening analysis report is available under ADAMS accession number ML113500495. The Generic Issue will be further evaluated as part of implementing recommendations from the NRC's Japan Near-Term Task Force response following the March 2011 major earthquake and tsunami in Japan. The issue will continue to be tracked and reported as a Generic Issue in the program until it is resolved.

As summarized above, one GI was resolved and one new GI was added to the other four reactor GIs that remain in the process of resolution.

### ***Nonreactor Generic Issues***

At the end of the reporting period, no nonreactor GIs remain to be resolved.

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

Enclosure:  
As stated

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