STATUS OF NRC ACTIVITIES OF POTENTIAL INTEREST TO OM MAIN COMMITTEE

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IST Owners Group and ASME OM Code Committee Meeting on December 9-13, 2013, at Clearwater Beach, FL

10 CFR 50.55a Rulemaking

Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a was amended by the last rulemaking, to incorporate by reference the 2005 and 2006 Addendas of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, the 2005 Addenda through 2008 Addenda of ASME Boiler and Pressure Vessel (B&PV) Code Section XI, and 2005 Addenda through 2008 Addenda of the ASME B&PV Code Section III.

In the spring of 2011, the Nuclear Regulatory Commission (NRC) started the next rulemaking to incorporate the 2009 Edition of the ASME OM with 2011 Addenda and the 2009 Addenda and 2010 Edition with 2011 Addenda of ASME B&PV Code Section III and XI into 10 CFR 50.55a. The NRC recently decided to delay this rulemaking for four additional months in order to include the 2012 Edition of the ASME OM and the 2013 Edition of the ASME B&PV Code. This proposed rulemaking is tentatively scheduled to be published for public comment in September 2014 and the final rule is tentatively scheduled to be issued in September 2015. The NRC staff is planning to add a condition in this rulemaking to endorse the usage of Code Case OMN-20, “Inservice Test Frequency,” without requiring NRC approval.

Regulatory Guide (RG) Update – OM Code Case Acceptability

The NRC staff has completed its review of the new and revised code cases published in the 2003 Addenda through the 2006 Addenda of the ASME OM Code. The proposed rulemaking and RGs (Revision 1 of RG 1.192, Revision 36 of RG 1.184, and Revision 17 of RG 1.147) for the code cases published in the 2003 Addenda through the 2006 Addenda of the ASME OM Code and the Section III and XI code cases listed in Supplements 1 through 10 to the 2007 B&PV Code were published for public comment in the Federal Register on June 29, 2013, with a public comment period until September 9, 2013. This proposed rulemaking contains revisions to the structure and numbering of 10 CFR 50.55a, as required by the Office of the Federal Register, and also proposed paragraph and subparagraph headings.

Based on concerns raised by the Advisory Committee on Reactor Safeguards (ACRS), three new conditions are being added by the NRC for usage of OMN-3, “Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants,” in draft RG 1.192, Revision 1.

The NRC staff has also completed a review of the new and revised code cases published in the 2009 Edition, 2011 Addenda, and 2012 Edition of the ASME OM. The proposed rulemaking and RGs for these code cases will be issued following the incorporation of the 2009 Edition, 2011 Addenda, and 2012 Edition of the ASME OM Code into 10 CFR 50.55a. Beginning with

Revision 1 of RG 1.192, code cases will be numbered as the code case is described in the OM Code. Each code case in Revision 1 of RG 1.192 will be identified by the number assigned by the OM Code and the applicable edition or addendum of the OM Code with which it is first published.

Temporary Instruction (TI) Inspection Procedure (TI 2515/189) for Snubbers

NRC expects that licensees not meeting the 10 CFR 50.55a regulations should have completed all actions noted in Regulatory Issue Summary (RIS) 2010-06 and also described in Enforcement Guidance Memorandum (EGM) 2010-01, by June 1, 2012.

The EPNB staff issued Temporary Instruction (TI) Inspection Procedure (TI 2515/189) to review the compliance of licensees' snubber programs with the 10 CFR 50.55a and ASME Code requirements. NRC Regional inspectors will use TI 2515/189 to review the snubber programs of the selected nuclear power plants.

NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants,"
"Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers)"

NUREG-1482, Revision 2 was issued (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13295A020). Based on public comments, NUREG-1482, Revision 2 maintains the same structure and section numbers as Revision 1 for the inservice testing (IST) of pumps and valves. All newly added sections are assigned new section numbers. A newly added Appendix A of NUREG-1482, Revision 2 contains information describing snubber inservice examination and testing programs. The NRC staff prepared responses to all of the public comments and incorporated most of these comments into Revision 2.

RIS 2012-10 and EGM 12-001 – NRC Position on Application of Technical Specification (TS) Surveillance Requirements (SRs) 3.0.2 and 3.0.3 to ASME OM Code Inservice Tests that are not part of the TS SRs

On February 24, 2012, the NRC issued EGM 12-001, "Dispositioning Noncompliance with Administrative Controls Technical Specifications Programmatic Requirements that Extend Test Frequencies and Allow Performance of Missed Tests," to allow enforcement discretion and provide guidance to licensees prior to the issuance of a long term solution for addressing frequencies and frequency extensions for IST intervals. The EGM also addresses the use of SR 3.0.3 for missed TS surveillances and inservice tests. The enforcement discretion made available by this EGM for inservice tests performed under 10 CFR 50.55a (f), not related to TS SRs, permits licensees to apply the provisions of the TS SR frequencies and TS SR 3.0.2 but not the provisions of TS SR 3.0.3. On August 23, 2012, the NRC issued RIS 2012-10, "NRC Staff Position on Applying Surveillance Requirements 3.0.2 and 3.0.3 to Administrative Controls Program Tests." This RIS reemphasized and clarified the information contained in EGM 12-001.

Code Case OMN-20, “Inservice Testing Frequency,” which addresses inservice testing frequency and allowable testing grace periods for ASME OM Code IST requirements was included in the 2012 Edition of the ASME OM. As noted in the “10 CFR 50.55a Rulemaking” section of his report, the NRC plans to add a condition in the latest rulemaking to endorse the usage of Code Case OMN-20 without requiring NRC approval. Since its publication, the NRC authorized several individual plant alternative requests to use OMN-20 and received several more for review. For missed inservice tests (i.e. tests not performed within the required testing frequency), in lieu of TS SR 3.0.3, licensees should use the guidance in RIS 2005-20, Revision 1, “Revision to NRC Inspection Manual Part 9900 Technical Guidance, “Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,”” and perform an appropriate operability evaluation or functionality assessment, as needed.

Browns Ferry Nuclear Plant (BFN), Unit 1, Red Inspection Finding

During the reviews of the Performance Deficiencies associated with the BFN1 Red Inspection finding, the NRC identified concerns with the clarity of the requirements in Sections ISTC 4.1 and ISTC 4.2.3 of the ASME OM Code, 1995 Edition with the 1996 and 1997 Addenda. Issues were also identified with the corresponding requirements in Sections ISTC-3700 and ISTC-3530 in later editions and addenda of the ASME OM Code. These sections involve verification of remote valve position indication and obturator movement. The NRC noted that the ISTC 4.1, ISTC 4.2.3, ISTC-3700 and ISTC-3530 requirements were not sufficiently clear to verify that valve operation is accurately indicated. The NRC also determined that there was a need to address issues associated with the intent and requirements in ISTC 4.1, ISTC 4.2.3, ISTC-3700, and ISTC-3530 through either a revision to the ASME OM Code or establishment of new or revised NRC requirements.

At the December 2011 ASME OM meeting, the ISTA/ISTC subgroup formed a task group to address several code change recommendations. The ISTA/ISTC subgroup members issued the proposed changes for review and ballot in the fall of 2012. Comments from this ballot were incorporated into a proposed change to the ASME OM, but this change was disapproved by OM SG ISTA/ISTC ballot in June 2013. Comments received on this ballot were incorporated and the item is now out for full committee ballot. The results from this ballot will be assessed by the EPNB staff to determine the need for any further regulatory guidance.

Closure of this item is being carried in the top ten priority list for NRC/ASME interactions.

Follow-up to Generic Letter (GL) 96-05 Periodic Verification of Motor-Operated Valves (MOVs)

RIS 2011-13, “Follow Up to Generic Letter 96-05 for Evaluation of Class D Valves Under Joint Owners Group Motor-Operated Valve Periodic Verification Program,” was issued on January 6, 2012. This RIS provides guidance for addressing periodic verification programs for valves not covered by the Joint Owners Group (JOG) MOV Periodic Verification (PV) program. Most plants committed to implement the final PV program recommendations by September 25, 2012.

The EPNB staff has developed inspection guidance to review the evaluation of Class D valves and associated MOV PV programs. This inspection guidance was incorporated into NRC

Inspection Procedure IP 62708 “Motor-Operated Valve Capability” which is available in ADAMS (Accession No ML13142A123). In addition, this inspection guidance was also incorporated in the inspection procedure for new reactors IP 73758 “Part 52, Functional Design and Qualification and Preservice and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints” which is available in ADAMS (Accession No. ML12314A205).

Proposed Information Notice (IN) on “Potential Design Deficiency in MOV Control Circuitry”

The NRC issued IN 2013-14 “Potential Design Deficiency in Motor-Operated Valve Control Circuitry” to alert addressees of a potential control circuit design concern involving incorrect valve indication and incorrect positioning of MOVs following interruption of power to the valve operators. The potential control circuit design concern involves the use of actuator limit switches for controlling valve movement.

Licensing and Inspection of Risk-informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors under 10 CFR 50.69

NRC Inspection Procedure (IP) 37060, “10 CFR 50.69 Risk-Informed Categorization and Treatment of Structures, Systems, and Components Inspection,” was issued on September 14, 2011. The IP draws in part from the ASME developed Part 29 (Standard), “Alternative Treatment Requirements for Risk-Informed Safety Class (RISC)-3 Pumps and Valves,” as well as from insights gained through a review of the South Texas Project 50.69-like treatment program.

In August 2012, Southern Nuclear submitted a license amendment application requesting to implement 10 CFR 50.69 at Vogtle Units 1 and 2. Following the NRC review of this application, lessons learned will be used to revise the inspection procedure, associated industry guidance, and Regulatory Guide 1.201, Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance.“ The Vogtle 50.69 application review has been delayed by other JLD and NFPA 805 priorities. The NRC staff recognizes the need for an effective, stable and predictable regulatory climate for the implementation of 10 CFR 50.69.

NRC Activities in Response to the March 2011 Accident at Japan’s Fukushima Dai-ichi Nuclear Facilities

Following the nuclear accident at Fukushima, the NRC chartered a Near-Term Task Force (NTTF) to review insights from the event and provide recommendations for enhancing reactor safety in the United States. On July 12, 2011, the NTTF issued its report, entitled, “Near-Term Report and Recommendations for Agency Actions Following the Events in Japan.” This report is available in the NRC’s ADAMS) at Accession No. ML11186A950.

On October 3, 2011, the NRC staff proposed to the Commission a three-tiered prioritization of the NTTF recommendations (Accession No. ML11269A204). The Tier 1 recommendations are those actions that should be implemented without unnecessary delay. The Tier 2

recommendations are those actions that need further technical assessment or critical skill sets to implement. The Tier 3 recommendations are longer term actions that depend on the completion of a shorter term action or need additional study to support a regulatory action. On December 15, 2011, the Commission approved the staff's recommended prioritization (Accession No. ML113490055).

Tier 1 Activities

On March 12, 2012, the NRC issued three orders and a request for information (RFI) letter to licensees related to Tier 1 items (Accession Nos. ML12054A735, ML12054A694, ML12054A679, and ML12053A340).

Orders

- EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events"
    - Requires licensees to develop a three-phased approach to mitigate the effects of a beyond-design-basis external event, which may result in a prolonged loss of all alternating current (AC) power (i.e., station blackout (SBO). 1) use currently installed equipment; 2) use portable equipment stored on site; 3) bring in resources from off site.

- EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents"
    - Requires reliable, hardened vents in BWR Mark I and Mark II containments, which would help maintain core and containment cooling.

- EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation"
    - Requires SFP water level instrumentation that shows a wider range than existing instrumentation. Specifically, it should indicate: 1) normal water level; 2) low level that still provides sufficient radiation shielding for personnel on the operating deck; 3) level near top of fuel where actions to add makeup water should no longer be delayed.

The NRC staff was also tasked to separately evaluate the merits of requiring the addition of filters to the reliable hardened vents required by Order EA-12-050. On November 26, 2012, the staff provided SECY-12-0157 (Accession No. ML12325A704) to the Commission with the results of the staff's evaluation. On March 19, 2013, the Commission issued its decision with two courses of action: 1) modify Order EA-12-050 to require that the hardened vents also be capable of performing their function under severe accident conditions (the modified order, EA-13-109, was issued on June 6, 2013); and 2) initiate a rulemaking that considers filtering and confinement strategies that include, but are not limited to, installation of filters.

Request for Information

The March 12, 2012, an RFI from the NRC requested the following of licensees:

- Report the results of seismic and flooding hazard walkdowns that identify and address degraded, nonconforming, or unanalyzed conditions through the corrective action program and verify the adequacy of the monitoring and maintenance procedures;

- Submit the results of reevaluations of seismic and flooding hazards at operating reactor sites that will facilitate the NRC's determination of whether design bases for structures, systems, and components important to safety should be updated; and

- Assess and report on the adequacy of power supplies for communication systems, and the sufficiency of emergency preparedness staffing to fill all necessary positions during a multiunit event.

The RFI was issued under 10 CFR 50.54(f), which requires licensees to respond to the request, but does not impose requirements. The staff is currently evaluating the responses to the RFI and will determine if further regulatory action is warranted.

Implementation Schedules

Orders

The approach for implementing all of the orders is similar. The NRC issued guidance for implementation of the technical requirements for all three of the orders in August 2012. Licensees submitted their integrated plans in February 2013, which included a description of how compliance with all of the orders will be achieved (site-specific). Each licensee is required to achieve full compliance within two refueling outages (RFOs) after submittal of its integrated plan, or by December 31, 2016, whichever comes first. The NRC staff is currently reviewing the portions of the integrated plan submittals addressing Orders EA-12-049 and EA-12-051 and is preparing interim staff evaluations (ISEs) for these orders for each site. Any potential staff concerns with the submittals will be documented as request for additional information questions in the ISEs, and these questions are expected to be eventually closed by a licensee submittal or through NRC audit. Once the questions are closed, the NRC will issue the final SEs. The final SEs are intended to serve as the site-specific regulatory footprint that documents what the NRC staff has found as acceptable for meeting the requirements of the orders. Following full implementation, the NRC will inspect to verify the requirements of the orders have been met.

For the modified order related to severe-accident capable containment vents for BWRs with Mark I and II containments (EA-13-109, issued on June 6, 2013), implementation will be in phases; Phase 1 will include installation of a wetwell vent by the second RFO after June 2014; and Phase 2 will include installation of a drywell vent by the first RFO after June 2017. Guidance for implementation of the modified order was issued on November 15, 2013. The NRC staff will similarly prepare draft ISEs for implementation of this modified order as well.

RFI

During summer and fall 2012, licensees conducted seismic and flooding hazard walkdowns and submitted the final walkdown reports to the NRC in November 2012. Degraded, nonconforming, or unanalyzed conditions identified during the walkdowns were entered into the licensee's corrective action program, and NRC inspectors are monitoring the resolution under the Reactor Oversight Process. NRC technical experts are conducting detailed assessments of the submittals. Further, the NRC conducted audits on a sample of plants to gather additional information to aid in the staff assessments.

For the flooding hazard reevaluations, most of the first set of plants submitted their reevaluations on March 12, 2013. Six sites requested extensions to the submittal date, which were approved by the NRC, primarily to allow usage of a different flooding model that will yield more accurate results. Several sites indicated that they will need to take interim actions (e.g., having standby sandbags in place before a new permanent barrier can be constructed), and several sites indicated they will be performing an integrated assessment to determine if permanent changes are needed at all. The NRC staff is currently reviewing the reevaluated hazards and will issue a safety assessment for each site in the future.

The first submittals for seismic hazard reevaluations will be from plants in the central and eastern United States. These are now due to the NRC in March 2014 rather than the original September 2013 due date based on the NRC's acceptance of an industry proposal. The industry submitted an updated ground motion model, which the NRC accepted on August 28, 2013, that will be used to perform the reevaluations. Further, the industry proposed to apply screening criteria that may require some plants to perform an expedited evaluation and implement modifications earlier than the NRC's original schedule. The staff will similarly review the seismic reevaluation submittals and issue a safety assessment for each plant. Seismic reevaluations from plants in the western U.S. are still due in March 2015.

On October 31, 2012, the licensees supplied the first part of their *communications* response regarding the assessment of their communications capability for a multiunit prolonged station blackout event. The licensees provided the first part of their *staffing* assessments regarding the staff needed to respond to a multiunit prolonged station blackout event on April 30, 2013. The NRC is in the process of issuing staff assessments to each licensee regarding these submittals by December 31, 2013. Since the remaining portions of the staffing and communications request will depend on the details of the mitigation strategies being developed to address order EA-12-049, the staff expects to receive these dependent portions of the assessments 4 months before the second refueling outage at each site (i.e., 4 months before each site completes full implementation of order EA-12-049).

Rulemakings

Station Blackout Mitigation Strategies (SBOMS)

A rulemaking was initiated as a result of the NTTF Recommendation 4.1 to modify the existing SBO rule to enhance a plants ability to cope with a prolonged SBO. On January 25, 2013, the staff sent COMSECY-13-0002, "Consolidation of Japan Lessons Learned Near-Term Task Force Recommendations 4 and 7 Regulatory Activities" (Accession No. ML13011A034), to the

Commission. In it, the staff requested approval to consolidate regulatory activities associated with NTTF Recommendations 4 (SBO mitigation capability) and 7 (spent fuel pool instrumentation and makeup capability) into a single rulemaking to be henceforth called "Station Blackout Mitigation Strategies." The request included a schedule adjustment to enable the rulemaking activity to be informed by implementation of the mitigating strategies order (EA-12-049). On March 4, 2013, the Commission approved the staff's request, and the final rule is now scheduled for completion by December 2016.

Onsite Emergency Response Procedures (NTTF Recommendation 8)

A rulemaking was initiated as a result of NTTF Recommendation 8 to strengthen and integrate onsite emergency response capabilities, such as emergency operating procedures, severe accident mitigation guidelines, and extensive damage mitigation guidelines. This rulemaking will establish standards that ensure the plants can smoothly transition between the various procedures, keeping the plants overall strategies coherent and comprehensive. The new rule will also have the plants improve strategies for large-scale events to promote effective decision-making at all levels. The new rule will also include training, qualification, and evaluation requirements for the key personnel expected to implement the procedures and strategies. The final rule is scheduled to be sent to the Commission in March 2016.

Filtering and Confinement Strategies

As part of the Commission's March 2013 decision regarding whether or not to include filters on the containment vents required by Order EA-12-050, the Commission instructed the staff to initiate a rulemaking that considers filtering and confinement strategies for limiting the release of radiological material in the event of a severe accident. These strategies would include, but not be limited to, filters. Public meetings are being held regarding the development of a regulatory basis which is due to be completed by December 19, 2014.

Recommendation 1 – Regulatory Framework

While not technically a Tier 1 activity or a rulemaking at this stage, the NTTF recommended establishing a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations to encompass beyond-design-basis events. The NRC staff has had significant engagement with stakeholders to help develop a regulatory framework to meet these recommendations. The staff is developing options for the Commission and expects to provide a paper by December 2013.

Tier 2 Activities

Tier 2 activities fall into three main areas: SFP makeup capabilities; Emergency Preparedness (EP); and Reevaluation of Other External Hazards (besides seismic and flooding).

For the first two areas, SFP makeup and EP, the staff has found that the intent of these recommendations can be addressed under implementation of the Mitigation Strategies order, and therefore these items have been consolidated into the Mitigation Strategies activities. However, as a specific note for EP, the aspect related to multiunit dose assessment is being

addressed outside of Mitigation Strategies, and is expected to be in place by the end of 2014 through a voluntary industry initiative that was found acceptable by the staff.

The final Tier 2 item related to reevaluation of other external hazards is dependent on insights gained from implementation of the seismic and flooding reevaluation efforts. Further, there are some staff resource limitations for addressing this item at the current time, but the NRC is closely looking at when those limitations will subside so that this activity can begin.

Tier 3 Activities

Much of the staff's effort to date has focused on the high priority Tier 1 actions, but work on the Tier 3 activities is progressing in accordance with the longer term schedules established in the program plans for each Tier 3 item that were issued in July 2012 as part of SECY-12-0095. Many of the Tier 3 activities involve further staff evaluation before it can be determined if additional regulatory action is necessary, and no determinations have been reached on any of the Tier 3 activities to date. For reference, the Tier 3 items are listed below:

- Periodic confirmation of external hazards
- Potential enhancements to the capability to prevent and mitigate seismically-induced fires and floods
- Reliable hardened vents for other containment designs
- Hydrogen control and mitigation inside containment or in other buildings
- EP enhancements for SBO and multiunit events
- Enhanced Emergency Response Data System (ERDS) capability
- Additional EP topics for prolonged SBO and multiunit events
- EP topics for decision-making, radiation monitoring, and public education
- Reactor Oversight Process modifications to reflect the recommended defense-in-depth framework
- NRC staff training on severe accidents and resident inspector training on severe accident management guidelines (SAMGs)
- Basis for emergency planning zone size
- Pre-staging of potassium iodide beyond 10 miles
- Expedited transfer of spent fuel to dry cask storage
- Reactor and containment instrumentation that can withstand severe accident conditions

Fukushima Accident Studies

A committee of the National Academy of Sciences is conducting a Congressionally-mandated study of the lessons-learned from the Fukushima accident. A report to the NRC is expected to be delivered in April 2014. The report will focus on the causes of the accident and lessons for nuclear plant safety.

26th Annual Regulatory Information Conference (RIC)

The 26th Annual Regulatory Information Conference (RIC) will be held March 11-13, 2014, at the Bethesda North Hotel and Conference Center, located just off of Rockville

Pike (Route 355) and Marinelli Road, at 5701 Marinelli Road, North Bethesda, Maryland 20852. Look for more information at the NRC public website: http://www.nrc.gov/public-involve/conference-symposia/ric/

12th NRC/ASME Symposium on Pumps, Valves, and Inservice Testing for Operating and New Reactors

The NRC and ASME will jointly sponsor the Twelfth NRC/ASME Symposium on Valves, Pumps, and IST for Operating and New Reactors on June 23-25, 2014, in Rockville, Maryland, at the Bethesda North Marriott Hotel and Conference Center. This Symposium provides a venue for the exchange of information on technical, programmatic, and regulatory issues associated with valves, pumps, and IST programs at nuclear power plants. Technical tracks are currently planned to include sessions on IST of pumps, valves, and dynamic restraints, risk-informed IST, IST programs for new reactors, IST software, and regulatory perspectives on IST.

ASME-Related Generic Communications

ASME-related generic communications issued by (or in the process of being issued by) the NRR and the Office of New Reactors (NRO) since the last report (July 2013) to the OM Standards Committee are listed below:

Bulletins (BLs)

None

Generic Letters (GLs)

None

Information Notices (INs)

IN 2013-20 (10/03/2013):	Steam Generator Channel Head and Tubesheet Degradation
IN 2013-19 (09/22/2013)	Quasi-Laminar Indications in Reactor Pressure Vessel Forgings
IN 2013-18 (09/13/2013):	Refueling Water Storage Tank Degradation
IN 2013-14 (08/23/2013):	Potential Design Deficiency in Motor-Operated Valve Control Circuitry

Regulatory Issue Summaries (RISs)

RIS 2013-09 (08/23/2013): Guidelines for Effective Prevention and Management of System Gas Accumulation

The full text of any of these NRC generic communications can be accessed by visiting the NRC's public website at http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html.