

June 3, 2015

MEMORANDUM TO: Gregory T. Bowman, Chief
Policy and Support Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

FROM: Rajender Auluck, Senior Project Manager */RA/*
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SUBJECT: SUMMARY OF MARCH 16, 2015, MEETING TO DISCUSS
ACTIVITIES ASSOCIATED WITH IMPLEMENTATION OF NEAR-
TERM TASK FORCE RECOMMENDATION 5.1 RELATED TO
CONTAINMENT VENTING SYSTEMS

On March 16, 2015 (rescheduled from March 5, 2015, due to inclement weather), a Category 2 public meeting was held between the U. S. Nuclear Regulatory Commission (NRC) staff, representatives from the Nuclear Energy Institute (NEI), and the Boiling Water Reactor Owners Group (BWROG) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15062A588), to continue discussions on activities directed by the Commission in a staff requirements memorandum (SRM) dated March 19, 2013 (ADAMS Accession No. ML13078A017), SRM-SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors [BWRs] with Mark I and Mark II containments." These discussions were related to the NRC's Implementation of Order EA-13-109 (ADAMS Accession No. ML13130A067), which addressed Recommendation 5.1 of the Near-Term Task Force (NTTF) report for Enhancing Reactor Safety in the 21st Century report, issued July 12, 2011 (ADAMS Accession No. ML111861807). The main focus of the meeting was on the proposed changes and additions to the industry guidance document NEI 13-02 (ADAMS Accession No. ML14345B045) regarding requirements for implementation of Phase 2 of the order.

The NRC staff began their presentation by stating that the staff has reviewed the proposed changes included in the guidance document NEI 13-02, Rev. 0E2. The NRC staff comments are noted in the document itself (ADAMS Accession No. ML15054A355). The proposed changes mostly related to the use of severe accident water addition (SAWA) and severe accident water management (SAWM) strategies for implementing the Phase 2 requirements specified in Order EA-13-109. The operational and design requirements of SAWA and SAWM strategies are included in Appendices C and I, and other sections of the revised guidance document.

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The NRC staff's comments mainly focused on the three methods described in the guidance document for implementing Phase 2 requirements of the order. For Method 1, which includes installation of a drywell vent with no availability of SAWA to the reactor vessel or the drywell, the guidance states that a plant-specific analysis will be required for staff review and approval. The guidance document NEI 13-02 will not include any guidance for this method. Furthermore, licensees who choose this method may also be required to evaluate any potential long-term issues related to Containment Protection and Release Reduction (CPRR) rulemaking.

The NEI guidance considers Method 2 as a strategy under provisions of Section B (2) in Order EA-13-109 that includes the requirements of a drywell vent per Section B.1 of the order. The NRC staff considers this as a hybrid approach because it assumes the availability of SAWA. At present, the functional requirements are not clearly stated in the guidance document. The staff believes that a good starting point could be the functional requirements defined in Section B.1 of Order EA-13-109. Furthermore, all permanently installed equipment relied under this method should be included in these functional requirements. The staff agrees with this inclusion. The third method is referred to as SAWM in NEI 13-02, Rev. 0E2, also includes SAWA as part of the water management strategy. This method includes a 3-tier approach for SAWM under which wetwell would be preserved up to seven days, or until an alternate method of heat removal and pressure control is established. The staff stated that the current revision of the guidance document does not provide sufficient details regarding procedures and functional requirements. During Phase 1 guidance development, a 7 day period was considered as a reasonable period for sustained operation for the HCVS. If a licensee wants to reduce this time period, the staff would review the potential success paths to establish an alternate heat removable system. The staff further stated that if drywell venting is part of the accident management function, guidance should state that licensees would need to submit for staff review one or more possible success paths to establish an alternate containment pressure control. In the area of SAWM, the staff noted that guidance is insufficient on functional requirements and believes that all permanently installed equipment used as part of SAWM strategy should have functional requirements defined and shown to be have met.

The industry presentation began with providing an overall status of Phase 2 guidance development, highlighting selected changes in the current revision and estimated completion schedule. Regarding Phase 1 topics, the presentation noted that three white papers, hardened containment vent system (HCVS) -WP-01, HCVS-WP-02, and HCVS-WP-03 have been reviewed and endorsed by the staff. Industry is currently working on a white paper related to tornado missiles and will submit for staff review later this year. Regarding the Phase 2 overall integrated plan (OIP) strategy, the presentation clarified that any unit that plans on using a drywell vent without the use of SAWA for compliance with EA-13-109, Option B1, will have to submit an alternate OIP with specific details for staff review and approval. The guidance document will only focus on methods under Option B2, which will require use of SAWA either for use of SAWM for Phase 2 alternate venting strategy, or for a drywell vent with a design value of 545 degree Fahrenheit. Sections of the guidance document NEI 13-02 will be revised to include specific guidance on functional requirements for options under B.2. The presentation then focused on the three tier approach proposed for the SAWM strategy. The first tier includes 7 days and beyond of sustained operation of the wetwell vent. The second tier includes sustained operation of the wetwell vent from 72 hours to 7 days. Under this scenario, licensees would need to provide functional description of alternate reliable heat removable methods in their Phase 2 OIPs. The third tier is where the sustained operation of the wetwell vent is expected to be less than 72 hours. Under this scenario, licensees would need to include in their Phase 2

OIPs, specific plant modifications necessary to implement alternate heat removal and pressure control and develop implementation procedures which will be required to meet the order requirements. Next, the industry representative briefly described some of the components which may be required for SAWA and how these components will be powered during severe accident conditions. Appendices C and I will be revised to include guidance for required instruments for SAWM and SAWA. These will include both the installed and portable instruments. The presentation also clarified definitions of terms used in NEI 13-02 and stated that to avoid any confusion, a statement will be added in Appendix A saying that terms defined are for use within NEI 13-02 and they may have other meanings in context of other documents in which they are defined. Industry is in the process of finalizing the next revision of NEI 13-02, which reflect staff comments and other editorial changes.

The NRC and industry meeting handouts can be found under ADAMS Accession Nos. ML15075A005, ML15075A006, and ML15075A009, respectively. The industry guidance document NEI 13-02, Rev. 0E2, and the NRC staff comments can also be found under ADAMS Accession Nos. ML14345B045 and ML15054A355, respectively.

Members of the public attended in person, through the bridge line and via webcast. At designated points during the meeting, members of the public were invited to provide any comments on the presentations. Members of the public asked some clarifying questions. The NRC staff responded to all questions.

Enclosure:
List of Attendees

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|--------|----------------|------------|----------------|----------------|
| NAME | RAuluck | SLent | GBowman | RAuluck |
| DATE | 06/01/15 | 05/24/15 | 06/02/15 | 06/03/15 |

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**NRC Public Meeting
Recommendation 5.1 Related to Containment Venting System
March 16, 2015**

List of Attendees

| Name | Organization |
|----------------------|--|
| Rajender Auluck | U. S. Nuclear Regulatory Commission(NRC) |
| Randy Bunt | Southern Nuclear Operating Company |
| John McHale | NRC |
| Nageswara Karipineni | NRC |
| Sud Basu | NRC |
| Brett Titus | NRC |
| Steven Kraft | Nuclear Energy Institute |
| Robert Pettis | NRC |
| Phil Amway | Exelon |
| Patrick Fallon | DTE Energy |
| Jerome Bettie | NRC |
| Terry Farthing | GE Hitachi (GEH) |
| Weidong Wang | NRC |
| Paul Gunther | Beyond Nuclear |

Enclosure

| Name | Organization |
|--------------|---------------------|
| Steven Dolly | PLATTS |
| Jeff Gabor | ERIN Engineering |
| Bruce Heida | NRC |
| Greg Bowman | NRC |
| Steve Wyman | NRC |
| Chuck Norton | NRC |
| Bill Reckley | NRC |
| Brian Lee | NRC |