

December 10, 2012

MEMORANDUM TO: Matthew A. Mitchell, Chief
Projects Management Branch
Japan Lessons-Learned Project Directorate
Office of Nuclear Reactor Regulation

FROM: Robert J. Fretz, Senior Project Manager */RA/*
Projects Management Branch
Japan Lessons-Learned Project Directorate
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF SEPTEMBER 13, 2012, PUBLIC MEETING TO
DISCUSS INITIAL RESULTS FROM THE U.S. NUCLEAR
REGULATORY COMMISSION STAFF'S ANALYSIS OF
VARIOUS STRATEGIES TO MANAGE RADIOLOGICAL
RELEASES FOLLOWING A SEVERE ACCIDENT IN BOILING
WATER REACTOR MARK I AND MARK II CONTAINMENTS

On September 13, 2012, U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting and webinar with stakeholders to discuss the initial results of the NRC staff's analysis of strategies and methods to manage radiological releases following a severe accident in boiling-water reactor (BWR) Mark I and Mark II containments. The staff specifically sought input on its regulatory analysis from public interest groups. Representatives from the Union of Concerned Scientists (UCS), Greenpeace, Beyond Nuclear, Pilgrim Watch (PW), and the National Resources Defense Council (NRDC) actively participated in the discussions in-person or through the webinar. In addition, UCS and Pilgrim Watch formally presented information to the staff. A copy of the transcript for the meeting may be obtained from NRC's Agencywide Documents Access and Management System (ADAMS) under Accession Number ML12320A324. A list of attendees is provided as Enclosure 1 to this memorandum.

The NRC staff opened the meeting by providing an overview of its plans for addressing the issue of filtered venting for BWRs with Mark I and Mark II containments. In the Staff Requirements Memorandum to SECY-11-0137, the Commission directed the staff to consider the issue of filtration of containment vents as a Tier 1 item. The staff is scheduled to submit its recommendations in a Commission Policy Paper on the subject of filtered containment venting systems by the end of November 2012.

Members of the staff from the Office of Nuclear Regulatory Research (RES) provided an overview of severe accident management and containment venting, and strategies to protect containment and limit radiological releases. RES discussed the analysis it performed using MELCOR. Information from the MELCOR analysis will be used to support the regulatory analyses on filtered venting. The MELCOR cases focused on Mark I containments, and were informed by Fukushima and SOARCA. This information was then used to perform MACCS consequence calculations using MELCOR output. A copy of the NRC's presentation may be obtained from ADAMS under Accession Number ML12256A849 (Enclosure 2).

David Lochbaum, Director, Nuclear Safety Project, UCS, made a presentation regarding filtered venting. Mr. Lochbaum noted that radioactive releases during routine operations and design-basis accidents are filtered through the standby gas treatment system (SGTS). However, radioactive releases during severe accidents are not filtered. UCS's argument is that, when the highest amount of radioactivity is likely present, the lowest protection to plant workers and members of the public is provided. In addition, UCS noted that there is a large uncertainty associated with the analysis of severe accident progression and modeling. A copy of the UCS presentation can be obtained from ADAMS under Accession Number ML12256A854 (Enclosure 3).

Mary Lampert, Director, Pilgrim Watch, presented information on its perspectives of filtered venting via the webinar. PW had also previously submitted information relating to the issue of filtered venting, and the reports are available from ADAMS under Accession Numbers ML12254A871 and ML12254A869. PW stated that hardened vents now required by Order EA-12-050 should be equipped with rupture discs and filters to help ensure that operators are not reluctant to follow orders when containment venting is required. She stated that an unfiltered vent releases up to 200 times more radioactivity than commercially-available filtered systems now being used in Europe. The PW presentation turned to the issue of how offsite consequences are being calculated. PW stated that MACCS2 under predicts or understates the consequences of severe accidents. One of the primary concerns stated was that MACCS2 does not calculate consequences of aqueous releases. PW was also concerned about the analysis assumptions, such as core damage frequency, when the NRC staff performs its cost-benefit calculations. PW requested that the staff review the reports it provided to the NRC. A copy of the Pilgrim Watch presentation can be obtained from ADAMS under Accession Number ML12256A853 (Enclosure 4).

Mark Leyse, representing NRDC, also raised concerns relating to the NRC staff's analysis. NRDC previously submitted information relating to its concerns on the issue of filtered venting, and the reports are available from ADAMS under Accession Numbers ML12254A865 and ML12254A850. NRDC stated that, in a BWR severe accident, "hundreds of kilograms of non-condensable hydrogen gas would also be produced (up to over 3000 kg) at rates as high as between 5.0 and 10.0 kg per second, if there were a reflooding of an overheated reactor core, which would increase the internal pressure of the primary containment. If enough hydrogen were produced, the containment could fail from becoming over-pressurized." NRDC recommended the installation of high capacity filtered containment venting systems in order to accommodate the potentially high production of hydrogen during an accident.

Enclosures:
As stated

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ADAMS Accession Numbers: ML12230A166 (Pkg.), ML12319A545 (Sum.), ML12256A849 (Encl. 2), ML12256A854 (Encl. 3), ML12256A853 (Encl. 4) *Concurrence via e-mail

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INITIAL RESULTS FROM THE U.S. NUCLEAR REGULATORY COMMISSION
STAFF'S ANALYSIS OF VARIOUS STRATEGIES TO MANAGE
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WATER REACTOR MARK I AND MARK II CONTAINMENTS

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LIST OF ATTENDEES

U.S. NUCLEAR REGULATORY COMMISSION

SEPTEMBER 13, 2012, PUBLIC MEETING TO DISCUSS

INITIAL RESULTS FROM THE NRC STAFF'S ANALYSIS OF VARIOUS STRATEGIES

TO MANAGE RADIOLOGICAL RELEASES FOLLOWING A SEVERE ACCIDENT

IN BOILING WATER REACTOR MARK I AND MARK II CONTAINMENTS

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