

March 29, 2006

MEMORANDUM TO: Matthew A. Mitchell, Chief
Vessels & Internals Integrity Branch
Division of Component Integrity
Office of Nuclear Reactor Regulation

FROM: Meena K. Khanna, Materials Engineer */RA/*
Vessels & Internals Integrity Branch
Division of Component Integrity
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MARCH 15, 2006, MEETING WITH BOILING WATER
REACTOR VESSEL AND INTERNALS PROJECT EXECUTIVE
OVERSIGHT COMMITTEE AND NRC MANAGEMENT TO DISCUSS
THE STATUS OF THE BOILING WATER REACTOR VESSELS AND
INTERNALS PROJECT

On March 15, 2006, executives from the Boiling Water Reactor Vessel and Internals Project (BWRVIP) met with Office of Nuclear Reactor Regulation (NRR) management and staff to provide an update of the status of the BWRVIP program. The BWRVIP representative began the meeting by stating the objectives of the meeting which included: providing an overview of the BWRVIP's approach to management of material degradation; summarizing the BWRVIP status and future direction; reaching agreement on the BWRVIP/Nuclear Regulatory Commission (NRC) approach for the future; and, discussing an approach to ensure that industry and NRC are aligned on BWRVIP program expectations.

Next, the BWRVIP representative provided an overview of the history of the BWRVIP program. The BWRVIP representative then discussed the status and future direction of the BWRVIP. The BWRVIP organizational structure and the BWRVIP Executive Oversight Committee (EOC) members were presented to the staff. The BWRVIP representative listed the reports that they had transmitted to the staff in 2005. The BWRVIP representative then provided the staff with an update of the BWRVIP reports that were expected to be submitted to the staff in 2006, which include the steam dryer repair design criteria, revised control rod drive weld repair report, report regarding the testing and evaluation of the BWR Supplemental Surveillance Program Capsules A, B, and C, access hole cover inspection and evaluation guidelines, top guide grid beam evaluation for license renewal, and several "-A" reports (i.e., topical reports which have been previously approved by the staff).

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The BWRVIP representative discussed its approved 2006 major tasks, which include: crack growth and fracture toughness studies in high fluence BWR materials; jet pump degradation management; production of report revisions with NRC safety evaluations incorporated; maintenance of the BWR reactor pressure vessel (RPV) integrated surveillance program (ISP); steam dryer coordination; re-evaluation of top guide grid inspection requirements for license renewal; continuation of non-destructive examination technique development and maintenance; modeling of weld processes for repairs to irradiated materials; qualification and demonstration of zirconia coating technology to mitigate intergranular stress corrosion cracking; an on-line noble metal chemical application demonstration project; and, radiolysis/electrochemical potential code improvements.

The BWRVIP representative then discussed the BWRVIP's future direction. The BWRVIP representative indicated that the BWRVIP will continue to serve as the focal point for materials-related issues that affect BWR RPs, piping, and RPV internals and water chemistry for current and license renewal terms. The BWRVIP will also provide technical support for the Institute of Nuclear Power Operations (INPO) review visits that assess utility implementation of BWRVIP guidance. The BWRVIP representative indicated that the BWRVIP will also coordinate BWR materials-related activities with relevant PWR activities and support the NEI 03-08 initiative on the management of materials issues.

Next, the BWRVIP representative described the BWRVIP's materials degradation matrix, whereby, the BWRVIP identifies and tracks gaps in information needed to manage material degradation. The BWRVIP plans to use this matrix as an effective tool in addressing materials issues.

The BWRVIP representative then discussed the BWRVIP/NRC successes. The BWRVIP's successes included the following: the proactive BWRVIP approach has avoided the need for generic regulatory requirements; the continuation of inspection and repair of internals in accordance with BWRVIP guidelines; submittal of topical reports on the ISP; RPV shell weld inspection reductions; radiation analysis modeling application (RAMA) fluence methodology; and the issuance of fifteen "-A" reports. The NRC successes included the issuance of safety evaluation reports on the topical reports for the ISP and the RAMA fluence methodology and the issuance of closeout letters on the fifteen "-A" reports.

Then, the BWRVIP/NRC challenges were addressed with respect to the timeliness of NRC reviews and BWRVIP responses, inconsistent NRC review process, emerging issues, American Society of Mechanical Engineers (ASME) Code interaction, and industry/NRC resources. At the conclusion of this discussion, both the NRR senior management as well as the BWRVIP EOC were able to effectively address the reasoning behind some of the challenges. In addition, recommendations were made in order for the staff and the BWRVIP to perform more effectively with respect to the review of the topical reports. The BWRVIP representative also provided the staff with a list of their near-term priorities, which include the completion of the staff's review of the following reports: BWRVIP-03, Revision 6, "RPV and Internals Examination Guidelines," BWRVIP-62, "Technical Basis for Inspection Relief for BWR Internal Components with Hydrogen Injection," BWRVIP-108, "Technical Basis for the Reduction of Inspection Requirements for the BWR Nozzle to Vessel Shell Welds and Nozzle Blend Radii," BWRVIP-76, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines," and

BWRVIP-14-A, "Evaluation of Crack Growth in BWR Stainless Steel RPV Internals." The staff indicated that its priorities with respect to the review of the BWRVIP topical reports were consistent with those of the BWRVIP's priorities.

Lastly, the BWRVIP representative provided an update regarding the Hatch Unit 1 core shroud tie rod upper support bracket cracking issue. This discussion included a background of the tie rods, Hatch Unit 1 inspection results, interim root cause assessment, significance for other tie rod plants, expectation of shroud redundancy, and future actions.

In conclusion, representatives of the BWRVIP and the staff discussed the action items that resulted from the meeting, which include the following: (1) EPRI should try to apply materials issues addressed/identified by the various materials issue programs (BWRVIP, Materials Reliability Project (MRP), etc.) to the new plant designs, e.g., Advanced Boiling Water Reactor designs, etc.; (2) the Boiling Water Reactor Owners Group should consider developing guidance for licensees to follow when implementing extended power uprates; (3) the BWRVIP will transmit a letter to BWR plants with shroud tie rod repairs, recommending tie rod inspections at their next scheduled outage; and, (4) to continue the BWRVIP EOC/NRC management meetings once a year.

The NRC staff expressed its appreciation to the BWRVIP EOC for the presentations. An attendance list is provided in the enclosure. The slides used during the meeting are available in ADAMS under accession numbers ML0608200502 and ML0608200572. It should be noted that the meeting slides are proprietary in nature.

Enclosure:
Meeting Attendees

BWRVIP-14-A, "Evaluation of Crack Growth in BWR Stainless Steel RPV Internals." The staff indicated that its priorities with respect to the review of the BWRVIP topical reports were consistent with those of the BWRVIP's priorities.

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Meeting Attendees

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ADAMS Accession Nos.: Package No. ML060890037

Meeting Notice: ML060400488

Meeting Summary: ML060880165

Presentation Materials: ML0608200502 and ML0608200572

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| OFFICE | DCI/CVIB | DCI/CVIB |
| NAME | MKhanna | MMitchell |
| DATE | 03/29/2006 | 03/29/2006 |

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MEETING ATTENDEES

MEETING WITH THE BOILING WATER REACTOR VESSEL AND INTERNALS PROJECT

MARCH 15, 2006

BWRVIP

Bill Eaton
Lewis Sumner
Tom Mulford
Robin Dyle
Robert Carter
Rick Libra
Amir Shahkarami
A.J. Wrape
Gary Park
Chuck Wirtz
Randy Stark
Larry Steinert
Jeffrey Goldstein
George Inch

NRC

Brian Sheron
Jack Grobe
Bill Bateman
Jennifer Uhle
Matthew Mitchell
Kim Gruss
Meena Khanna
John Tsao

PUBLIC

Yoshieaka Fujisawa
F.J. Reedy, Jr.
Masahiro Horiguchi

ENCLOSURE