

April 19, 2002

MEMORANDUM TO: William D. Travers
Executive Director for Operations

FROM: Joseph A. Murphy, Chairman **/RA/**
Committee To Review Generic Requirements

SUBJECT: MINUTES OF THE COMMITTEE TO REVIEW GENERIC
REQUIREMENTS MEETING NUMBER 368

The Committee To Review Generic Requirements (CRGR) held special Meeting No. 368 on March 18, 2002, from 10:30 A.M. to 12:00 P.M., with the attendees listed in Attachment 1. The purpose of this meeting was to consider endorsement of proposed Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," (ADAMS Accession No. ML020770497).

Mr. Kenneth Karwoski, Office of Nuclear Reactor Regulation (NRR), described the results of the February-March 2002 inspection of control rod drive mechanism (CRDM) nozzles at Davis Besse, as required by NRC Bulletin 2001-01. Bulletin 2001-01 required 100% visual inspection of vessel head nozzles on high susceptibility plants, i.e. those plants, such as Davis Besse, that were susceptible to primary water stress corrosion cracking and within 5 effective full power years from the degradation observed at Oconee 3. Five nozzles in this high susceptibility plant were found to have cracks. Ultrasonic testing of two nozzles returned anomalous signals. The licensee found boric acid crystals and degraded areas on the head's surface by the three nozzles that had through-wall cracks. During a CRDM repair, a degraded area by one of the CRDM nozzles was found measuring 7-inches long, 4 to 5-inches wide, and 6-inches deep. The 3/8 inch thick stainless steel cladding [later found to be nominally 3/16-inch thick] by this nozzle cavity was found to be deflected upwards by about 1/8-inch over a 4 inch distance, indicating that the cladding material had yielded. Mr. Karwoski provided proprietary photos of this cavity. The root cause investigation was on-going at the time of this meeting. Others estimated an increase in the risk of a loss of coolant accident by the degradation observed at Davis Besse. Mr. Karwoski's presentation slides may be found in ADAMS Accession No. ML020780206.

Mr. Karwoski explained that the proposed Bulletin would require licensees to provide information regarding any conditions identified (deposits, vessel head penetration nozzle cracking or other conditions), that could result in degradation of a pressurized water reactor pressure vessel head by thinning, pitting or other forms of degradation. It requires licensees to respond within 7 days if they will not be able to supply the required information. The Bulletin requires licensees to summarize their reactor pressure vessel head inspection and maintenance programs, schedules, results, and corrective actions; and evaluate their ability to identify this type of degradation within 15 days. If licensee evaluations are unable to provide reasonable assurance that regulatory requirements are being met, they are required to submit plans for plant shutdown and inspection. The Bulletin requires licensees to describe the scope

of inspection, degradation detected, corrective actions taken, and root cause of the degradation within 30 days after plant restart following the next inspection of the reactor pressure vessel head to identify degradation. And, the proposed Bulletin would require licensees to provide the basis for concluding that their boric acid inspection program is providing reasonable assurance of compliance with applicable regulatory requirements within 60 days.

Mr. Karwoski also addressed the information required by item x of Appendix C of the Rev. 7 of the CRGR Charter. This was provided to the Committee, as Attachment 2 in a memo from Jon Johnson to Joseph A. Murphy, requesting CRGR review of this Bulletin (ADAMS Accession No. ML020770174). The staff found that the proposed Bulletin did not impose new requirements on licensees other than submittal of the required response, at an estimated average cost of \$20,000 per respondent. The NRC will make an initial assessment within 30 days following receipt of licensee submittals, and initiate necessary additional generic communication or rulemaking by May 2002.

The CRGR members asked why Bulletin 2002-01 required some information that was supplied in response to Bulletin 2001-01, to ensure there was minimal impact on licensees. The staff explained their desire to have all of the relevant information together or referenced in one document to expedite their reviews of this significant issue. Licensees may reference prior responses for those questions covering the same material, such as inspection techniques. But licensees may have to further explain, for example, how those techniques were able to detect a cavity initiated from the inner surface of the head rather than the top surface. The staff plans to discuss Bulletin 2002-01 with licensees on March 20, 2002, and will address this issue as it is raised in that forum.

The CRGR recommended and the staff agreed to include a sentence in the Bulletin noting that the NRC will continue to assess information from other sources and meetings in concert with the information received from the Bulletin and take additional action as warranted.

The CRGR members found no backfit in requiring this information to assess plant-specific compliance with specific NRC regulations and determine the need for additional regulatory actions to address degradation of reactor pressure vessel head or other portions of the reactor coolant pressure boundary, pursuant to 10 CFR 50.54(f). Extensive degradation or leakage of the reactor coolant pressure boundary not only violates NRC regulations and plant technical specifications, but, most importantly, may increase the risk of a loss of coolant accident. The presenter identified applicable regulatory requirements relating to this issue, including specific general design criteria in Appendix A to 10 CFR 50, NRC regulations in 10 CFR 50.55a regarding American Society of Mechanical Engineer code requirements, and criteria in Appendix B to 10 CFR 50, as noted in the Bulletin.

Shortly after this CRGR meeting, the Acting CRGR Chairman informed the NRC Executive Director for Operations that the CRGR endorsed this Bulletin with several minor comments. Bulletin 2002-01 was revised to reflect those comments and issued on March 18, 2002.

Questions about these meeting minutes should be referred to Robert Spence at RAS2@nrc.gov.

Attachments: As stated

Memorandum dated: 4/19/02

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MEETING NUMBER 368

cc w/atts:	<u>Mail Stop</u>
Chairman Meserve	O-16 C1
Commissioner Dicus	O-16 C1
Commissioner Diaz	O-16 C1
Commissioner McGaffigan	O-16 C1
Commissioner Merrifield	O-16 C1
Annette Vietti-Cook, Secretary of the Commission	O-16 C1
William D. Travers, EDO	O-16 E15
William F. Kane, DEDR	O-16 E15
Carl J. Paperiello, DEDMRS	O-16 E15
Frank J. Congel, OE	O-14 E1
Hubert T. Bell, OIG	T-5 D28
Karen D. Cyr, OGC	O-15 D21
Janice E. Moore, OGC	O-15 D21
Mitzi Young, OGC	O-15D21
Lawrence J. Chandler, OGC	O-15D21
John T. Larkins, ACRS	T-2 E26
Martin J. Virgilio, NMSS	T-8 A23
Margaret V. Federline, NMSS	T-8 A23
E. William Brach, NMSS	O-13 D13
Samuel J. Collins, NRR	O-5 E7
Ashok C. Thadani, RES	T-10 F12
Roy P. Zimmerman, RES	T-10 F12
R. William Borchardt, NRR	O-5 E7
Jon R. Johnson, NRR	O-5 E7
Brian W. Sheron, NRR	O-5 E7
Gary M. Holahan, NRR/DSSA	O-10 A1
David B. Matthews, NRR/DRIP	O-12 E5
Jack R. Strosnider, Jr., NRR/DE	O-9 E3
William H Bateman, NRR/DE/EMCB	O-9H6
Steven D. Bloom, NRR/ DE/EMCB	O-5E7
Kenneth J. Karwoski, NRR/DE/EMCB	O-9H6
Thomas Koshy, NRR/DRIP/RORP	O-12D1
Steven M. Long, NRR/DSSA/SPSB	O-10H4
Jin W. Chung, NRR/DSSA/SPSB	T-4H4
Allen L. Hiser Jr., NRR/DE/EMCB	O-9H6
Barry J. Elliot, NRR/DE/EMCB	O-9H6
Andrea Lee, NRR/DE/EMCB	O-9H6
Edwin M. Hackett, RES/DET/MEB	T-10E10
Frank P. Gillespie, NRR/DRIP	O-12E5

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James W. Shapaker, NRR/DRIP/RORP	O-12D1
Ledyard B. (Tad) Marsh, NRR/DRIP/REXB	O-12 D12
Bruce A. Boger, NRR/DIPM	O-6 E3
William M. Dean, NRR/DIPM	O-6 E3
John A. Zwolinski, NRR/DLPM	O-8 E1
Hubert J. Miller	RGN-I
Luis A. Reyes	RGN-II
Bruce S. Mallett	RGN-II
James E. Dyer	RGN-III
Ellis W. Merschoff	RGN-IV

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O-12D1
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O-8 E1
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DATE	03/19/01		04/19/02	

CRGR MEETING No. 368
LIST OF ATTENDEES
(March 18, 2002)

CRGR Members

Roy Zimmerman, Acting Chairman
Brian W. Sheron, NRR
Margaret Federline, NMSS
Bruce S. Mallett, RGN-II
Janice E. Moore, OGC

Robert A. Spence, CRGR Staff

NRR Staff

Steven Bloom, NRR/
Kenneth Karwoski, NRR/
Jack R. Strosnider, Jr., NRR/DE
William H Bateman, NRR/DE/EMCB
Steven D. Bloom, NRR/ DE/EMCB
Kenneth J. Karwoski, NRR/DE/EMCB
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