

June 6, 2003

The Honorable Nils J. Diaz
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 502nd MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS, MAY 8-9, 2003
AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 502nd meeting, May 8-9, 2003, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports:

REPORTS:

The following reports were issued to Nils J. Diaz, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Vessel Head Penetration Cracking and Reactor Pressure Vessel Degradation, dated May 16, 2003
- Improvement of the Quality of Risk Information for Regulatory Decisionmaking, dated May 16, 2003
- Draft Final Regulatory Guide 1.178 and Standard Review Plan Section 3.9.8 for Risk-Informed Inservice Inspection of Piping

HIGHLIGHTS OF KEY ISSUES

1. Vessel Head Penetration Cracking and Degradation

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding pressurized water reactor (PWR) vessel head penetration (VHP) cracking and reactor pressure vessel degradation. On May 20, 2002, the NRC Executive Director for Operations had appointed an independent task force to assess the lessons-learned from the degradation of the reactor vessel head at Davis-Besse. The scope of the assessment included the reactor oversight process, regulatory processes, research activities, international practices, and NRC generic issues process. As a result of the lessons-learned task force (LLTF) recommendations, four action plans were developed. These are stress corrosion cracking; operating experience; inspection, assessment, and project management; and barrier integrity.

The NRC issued a series of Bulletins and an Order (EA-03-009- February 2003) to address the various materials degradation phenomena that have occurred in PWR VHPs. This Order mandated interim inspection requirements. This matter was also discussed with the EPRI Materials Reliability Program (MRP) during the 500th ACRS meeting (March 6-8, 2003), and with the MRP and NRC staff during a joint Materials and Metallurgy and Plant Operations Subcommittees meeting (April 22-23, 2003).

Committee Action

The Committee issued a report to NRC Chairman Diaz on this matter dated May 16, 2003, concluding that the LLTF action plans define the work needed to provide a sound technical basis for assessing industry's development of a proactive life management methodology for materials degradation in PWR vessel head penetrations. However, these action plans need to be augmented in some areas. In addition, the Committee recommended that the NRC staff must have the independent capability to analyze the required data collected from other organizations.

2. Proposed Revisions to Regulatory Guide 1.178 and Standard Review Plan Section 3.9.8 for Risk-Informed Inservice Inspection of Piping

The Committee met with representatives of the NRC staff to discuss the draft final Regulatory Guide 1.178, "An Approach for Plant Specific Risk-Informed Decisionmaking for Inservice Inspection of Piping," and associated Standard Review Plan Section 3.9.8. The Committee discussed changes to Regulatory Guide 1.178 since it was issued for trial use in September 1998. The most important substantive changes are additional documentation requirements to ensure that the probabilistic risk assessment used to support the submittal is of adequate quality. The Committee asked what approaches

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the international nuclear community was taking to risk-informed inservice inspection of piping. From these discussions, it is the Committee's understanding that, while most of the international nuclear community is adopting the EPRI and Westinghouse Owners Group (WOG) methodologies, the French are applying a different methodology.

Committee Action

The Committee issued a report to NRC Chairman Diaz on this matter, dated May 16, 2003. The Committee recommended that the draft final Regulatory Guide 1.178 and associated Standard Review Plan Section 3.9.8 should be issued. The Committee also recommended that the NRC staff consider undertaking a study comparing the results from the application of the EPRI, WOG, and French methodologies to the same piping system. Such a comparison could give useful insights into the process of risk categorization.

3. Operating Experience Program Effectiveness

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding some of the findings of the Davis-Besse LLTF concerning Operating Experience Program Effectiveness.

The staff described the formation of a new Task Force to investigate the evaluation and dissemination of operating experience information in accordance with the Davis-Besse LLTF recommendations. The presentation was intended to inform the Committee about the objectives and attributes that the new Task Force had developed, and to request additional suggestions for inclusion in the Task Force scope. The Task Force will evaluate the agency's reactor operating experience program and will recommend specific program improvements to address the Davis-Besse LLTF recommendations. The Committee provided suggestions for consideration by the Task Force and expressed interest in reviewing its draft report.

Committee Action

This was an information briefing and no Committee action was taken.

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4. Subcommittee Report on the Revised Application for the Mixed Oxide (MOX) Fuel Fabrication Facility

The Chairman of the Reactor Fuels subcommittee summarized the subcommittee meeting on the Mixed Oxide Fuel Fabrication Facility. Duke Cogema Stone and Webster, and the NRC staff discussed the open items related to criticality, chemical safety (red oil and hydroxylamine nitrate), fire protection, and confinement ventilation.

5. Subcommittee Report on the Integrated Industry Initiating Event Performance Indicator

The Acting Chairman of the Reliability and Probabilistic Risk Assessment subcommittee summarized the subcommittee meeting on the integrated initiating event performance indicator (PI). The NRC staff discussed the status of the development of a PI for initiating events as a part of the Industry Trends Program.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the response from the EDO dated April 29, 2003, to the ACRS report dated March 14, 2003, concerning the license renewal application for the Peach Bottom Atomic Power Station, Units 2 and 3.

The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the response from the EDO dated April 29, 2003, to the ACRS report dated March 13, 2003, concerning the reactor oversight process.

The Committee decided that it was satisfied with the EDO's response.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from April 10, 2003, through May 7, 2003, the following Subcommittee meetings were held:

- Reactor Fuels Subcommittee - April 21, 2003

The Subcommittee reviewed the Duke Cogema Stone and Webster construction application request resubmittal for a mixed oxide (MOX) fuel fabrication facility.

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- Materials and Metallurgy Subcommittee - April 22-23, 2003

The Subcommittee reviewed NRC inspection requirements and guidance, Wastage Research, and the EPRI Materials Reliability Program and industry efforts related to vessel head penetration cracking and reactor pressure vessel head degradation.

- Safeguards and Security Subcommittee - April 24, 2003

The Subcommittee heard presentations from Commissioner McGaffigan and representatives of the NRC staff and the nuclear industry. This meeting was closed to public attendance pursuant to 5 U.S.C. 552b(c)(1) to protect information classified as national security information.

- Reliability and Probabilistic Risk Assessment Subcommittee - May 7, 2003

The Subcommittee reviewed the integrated industry initiating event indicator as a part of the Industry Trends Program.

- Planning and Procedures - May 7, 2003

The Subcommittee discussed proposed ACRS activities, practices, and procedures for conducting Committee business and organizational and personnel matters relating to ACRS and its staff.

LIST OF MATTERS FOR THE ATTENTION OF THE EDO

- The Committee plans to review the draft report of the Operating Experience Task Force when it is issued in the fall.
- The ACRS Subcommittee on Reliability and PRA plans to hold a meeting in Fall 2003 to discuss the status of resolution of public comments on the proposed 10 CFR 50.69, Draft Regulatory Guide DG-1121, and Revision 1 of the NEI document NEI 00-04.

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PROPOSED SCHEDULE FOR THE 503rd ACRS MEETING

The Committee agreed to consider the following topics during the 503rd ACRS meeting, to be held on June 11-13, 2003:

- Workshop on Safety Culture
 - Collective Understanding of Safety Culture
 - Attributes of Safety Culture
 - Conclusions and Outcome of the Workshop
- Update to Generic License Renewal Guidance Documents
- Subcommittee Report on the Fort Calhoun License Renewal Application
- Proposed Strategy for Preparing the 2004 ACRS Report on the NRC Safety Research Program

Sincerely,

/RA/

Mario V. Bonaca
Chairman