



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

March 22, 2016

MEMORANDUM TO: ACRS Members

FROM: Sherry Meador **/RA/**
Technical Secretary, ACRS

SUBJECT: CERTIFICATION OF THE MEETING MINUTES FROM
THE ADVISORY COMMITTEE ON REACTOR
SAFEGUARDS 631st FULL COMMITTEE MEETING
HELD ON FEBRUARY 4-6, 2016, IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on February 19, 2016 as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment:
As stated



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

February 19, 2016

MEMORANDUM TO: Sherry Meador, Technical Secretary
Advisory Committee on Reactor Safeguards

FROM: Dennis C. Bley */RA/*
ACRS Chairman

SUBJECT: MINUTES OF THE 631st MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),
FEBRUARY 4-6, 2016

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting are an accurate record of the proceedings for that meeting.

OFFICE	ACRS	ACRS/SUNSI Review
NAME	SMeador	SMeador
DATE	02/19/16	02/19/16

OFFICIAL RECORD COPY

MINUTES OF THE 631ST MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

ROCKVILLE, MARYLAND

The 631ST meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room T2B1, Two White Flint North Building, 11545 Rockville Pike, Rockville, Maryland, on February 4-6, 2016. A copy of the meeting agenda is attached.

The summary report (ML16075A320) from the ACRS Chairman to the NRC Chairman contains the following information for this meeting: (1) an accurate description of each matter discussed and (2) a list of all the documents issued or approved by the Committee. A copy of the summary report is attached. The documents received by the Committee are listed in the references of each committee letter associated with this meeting.

A transcript of selected portions of the meeting is available in the NRC's public document room (pdr.resource@nrc.gov or 1-800-397-4209), or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS), or at <http://www.nrc.gov/reading-rm/doc-collections/acrs/agenda/>. The presentation slides and handouts used during the meeting are attached to these transcripts.

ATTENDEES

ACRS Members

Dr. Dennis Bley (Chairman), Dr. Michael Corradini (Vice-Chairman), Dr. Pete Riccardella (Member-at-Large), Dr. Ronald Bellinger, Mr. Charles Brown, Dr. Dana A. Powers, Mr. Harold Ray, Dr. Joy Rempe, Mr. Gordon Skillman, and Mr. John Stetkar.

ACRS Staff

E. Hackett
M. Banks
W. Wang
C. Brown
G. Shukla

A list of other attendees is attached.



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555-0001**

**AGENDA
631st ACRS MEETING
FEBRUARY 4-6, 2016
11545 ROCKVILLE PIKE, ROCKVILLE, MD**

THURSDAY, FEBRUARY 4, 2016, CONFERENCE ROOM T-2B1

- | | |
|--|---|
| 1) 8:30 AM – 8:35 AM | <u>Opening Remarks by the ACRS Chairman</u> (Open) (DCB/EMH)
1.1) Opening Statement
1.2) Items of Current Interest |
| 2) 8:35 AM – 9:30 AM | <u>10 CFR 50.46c Rulemaking Activities</u> (Open) (RB/CLB)
2.1) Remarks by the Subcommittee Chairman
2.2) Briefings by and discussions with representatives of the NRC staff regarding 10 CFR 50.46c rulemaking activities |
| 9:30 AM - 9:45 AM | *** BREAK *** |
| 3) 9:45 AM – 11:45 AM | <u>Peach Bottom MELLLA+ License Amendment Request</u> (Open/Closed) (JLR/WW)
3.1) Remarks by the Subcommittee Chairman
3.2) Briefings by and discussions with representatives of the NRC staff and Exelon regarding the safety evaluation report associated with the Peach Bottom MELLLA+ license amendment request |
| [NOTE: A portion of this meeting may be closed in order to discuss and protect information designated as proprietary, pursuant to 5 U.S.C. 552b(c)(4).] | |
| 11:45 AM - 2:00 PM | *** LUNCH *** |
| 4) 2:00 PM – 4:00 PM | <u>Draft Final Guide RG 1.127</u> (Open) (HBR/GSS)
4.1) Remarks by the Subcommittee Chairman
4.2) Briefings by and discussions with representatives of the NRC staff regarding draft final RG 1.127, "Design and Inspection Criteria for Water-Control Structures Associated with Nuclear Power Plants" |

- 5) 4:00 PM – 6:00 PM Preparation of ACRS Reports (Open/Closed)
- 5.1) Draft Final Regulatory Guide 1.127 (HBR/GSS)
 - 5.2) 10 CFR 50.46c Rulemaking Activities (RB/CLB)
 - 5.3) Peach Bottom MELLLA+ License Amendment Request (JLR/WW)

[NOTE: A portion of this meeting may be closed in order to discuss and protect information designated as proprietary, pursuant to 5 U.S.C. 552b(c)(4).]

FRIDAY, FEBRUARY 5, 2016, CONFERENCE ROOM T-2B1

- 6) 8:30 AM – 10:00 AM Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (DCB/EMH)
- 6.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings
 - 6.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments

[NOTE: A portion of this meeting may be closed pursuant to 5 U.S.C. 552b (c) (2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of the ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.]

- 7) 10:00 AM – 10:15 AM Reconciliation of ACRS Comments and Recommendations (Open) (DCB/EMH/MLB)
- 7.1) Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters

10:15 AM – 10:30 AM

***** BREAK *****

- 8) 10:30 AM – 11:30 AM Preparation for Commission Meeting (DCB/EMH)
- Discussion regarding the selection of topics for the March Commission Meeting

- 9) 11:30 AM – 12:00 PM Biennial Review and Evaluation of the NRC Safety Research Program (Open) (JLR/HPN)
Discussion regarding the NRC Safety Research Program

12:00 PM – 1:00 PM

***** LUNCH *****

- 10) 1:00 PM – 6:00 PM Preparation of ACRS Reports (Open/Closed)
10.1) Continue discussion of the proposed ACRS reports listed under Item 5

[NOTE: A portion of this meeting may be closed in order to discuss and protect information designated as proprietary, pursuant to 5 U.S.C. 552b(c)(4).]

SATURDAY, FEBRUARY 6, 2016, CONFERENCE ROOM T-2B1

- 11) 8:30 AM – 11:30 AM Preparation of ACRS Reports (Open/Closed)
11.1) Continue discussion of the proposed ACRS reports listed under Item 5

[NOTE: A portion of this meeting may be closed in order to discuss and protect information designated as proprietary, pursuant to 5 U.S.C. 552b(c)(4).]

- 12) 11:30 AM – 12:00 PM Miscellaneous (Open) (DCB/EMH)
12.1) Discussion of matters related to the conduct of Committee activities and specific issues that were not completed during previous meetings, as time and availability of information permit

NOTES:

- When appropriate, members of the public and representatives of the nuclear industry may provide their views during the briefings.
- During the meeting, 301-415-7360 should be used in order to contact anyone in the ACRS Office.
- Presentation time should not exceed 50 percent of the total time allocated for a given item. The remaining 50 percent of the time is reserved for discussion.
- Thirty five (35) hard copies and one (1) electronic copy of the presentation materials should be provided to the ACRS in advance of the briefing.
- One (1) electronic copy of each presentation should be emailed to the Designated Federal Official 1 day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Designated Federal Official with a CD containing each presentation at least 30 minutes before the meeting.



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

March 15, 2016

The Honorable Stephen G. Burns
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SUMMARY REPORT – 631st MEETING OF THE ADVISORY COMMITTEE ON
REACTOR SAFEGUARDS, FEBRUARY 4-6, 2016

Dear Chairman Burns:

During its 631st meeting, February 4-6, 2016, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and memorandum:

REPORTS

Reports to Stephen G. Burns, Chairman, NRC, from Dennis C. Bley, Chairman, ACRS:

- “Draft Final Rule 10 CFR 50.46c, ‘Emergency Core Cooling System Performance during Loss-of-Coolant Accidents (LOCA)’ and Associated Regulatory Guides,” dated February 23, 2016
- “Peach Bottom Atomic Power Station Units 2 and 3 Maximum Extended Load Line Limit Analysis Plus (MELLLA+) License Amendment Request,” dated February 17, 2016

MEMORANDUM

Memorandum to Victor M. McCree, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- “Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for February 2016,” dated February 16, 2016

HIGHLIGHTS OF KEY ISSUES

1. 10 CFR 50.46c Rulemaking Activities

The Committee met with representatives of the NRC staff, industry, and the Nuclear Energy Institute (NEI) to discuss 10 CFR 50.46c, "Emergency Core Cooling System Performance during Loss-of-Coolant Accidents" rulemaking activities. The staff discussed recent changes to the performance-based requirements for reactor fuel cladding to prevent cladding embrittlement during a loss of coolant accident. NEI discussed the industry's perspective on the rulemaking. Members of the public also made comments on the rulemaking.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated February 23, 2016, with the following recommendations: 1) The draft final rule 10 CFR 50.46c and associated Regulatory Guides 1.222, "Measuring Breakaway Oxidation Behavior," 1.223, "Measuring Post-Quench Ductility," and 1.224, "Establishing Analytical Limits for Zirconium-Alloy Cladding Material" should be issued and 2) Draft Regulatory Guide 1.229, "Risk-Informed Approach for Addressing the Effects of Debris on Post-Accident Long-Term Core Cooling," should not be issued until our review has been completed.

2. Peach Bottom MELLLA+ License Amendment Request

The Committee met with representatives of the NRC staff and Exelon Generation Company to discuss a license amendment request for operation of Peach Bottom Atomic Power Station (PBAPS) Units 2 & 3 in the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) domain and the associated NRC staff's draft safety evaluation.

PBAPS currently operates in the Maximum Extended Load Line Limit Analysis domain. The expanded operating domain in MELLLA+ increases operating flexibility by allowing control of reactivity at maximum power by changing recirculation flow rather than control rod insertion and withdrawal. Operation in the MELLLA+ domain could adversely affect the plant's susceptibility to instability and its response to anticipated transients without scram. Analysis results show that mitigating actions in the emergency operating procedures (e.g., feedwater flow runback to uncover the feedwater spargers and boron injection) are effective in the MELLLA+ operating domain, if operator actions are accomplished within a specified time. The ACRS examined the effects of conservatisms assumed in the analyses and concluded that there is acceptable margin for PBAPS operation in the MELLLA+ domain.

Committee Action

The ACRS issued a report to the NRC Chairman on this matter, dated February 17, 2016, and recommended that the Exelon application for operation of PBAPS Units 2 and 3 in the MELLLA+ domain should be approved, subject to the limitations and conditions identified in the staff's draft safety evaluation.

3. Draft Final Regulatory Guide 1.127, "Criteria and Design Features for Inspection of Water Control Structures Associated with Nuclear Power Plants," Revision 2

The Committee met with representatives of the NRC staff to discuss draft final Regulatory Guide 1.127, "Criteria and Design Features for Inspection of Water Control Structures Associated with Nuclear Power Plants," Revision 2. The staff provided an overview of Regulatory Guide 1.127 and discussed stakeholder comments on the draft Regulatory Guide and comments from the ACRS Regulatory Policies and Practices Subcommittee meeting held on November 18, 2015. The staff indicated that draft final Regulatory Guide 1.127, Revision 2 is ready for publication.

Committee Action

The Committee concluded that the Regulatory Guide provides adequate criteria and design features for inspection of water control structures associated with nuclear power plants. The Committee has no objection to the staff's proposal to issue this Regulatory Guide.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the Executive Director for Operations' response of November 19, 2015, to comments and recommendation included in the September 23, 2015 ACRS letter on "Interim Staff Guidance DC/COL-ISG-028, 'Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application.'" The Committee decided that its report and the staff's response adequately describe the differing points of opinion on this matter, and no further written exchange was needed.
- The Committee considered the Executive Director for Operations' response of November 25, 2015, to comments and recommendation included in the October 15, 2015 ACRS letter on "Report on the Safety Aspects of the Construction Permit Application for Shine Medical Technologies, Inc. Medical Isotope Production Facility." The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of October November 24, 2015, to comments and recommendation included in the October 20, 2015 ACRS letter on "Interim Staff Guidance, 'Guidance for the Evaluation of Acute Chemical Exposures and Proposed Quantitative Standards.'" The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of December 16, 2015, to comments and recommendation included in the November 16, 2015 ACRS letter on SECY-15-0137, "Proposed Plans for Resolving Open Fukushima Tier 2 and 3 Recommendations." The Committee was satisfied with the Executive Director for Operations' response.

- The Committee considered the Executive Director for Operations' response of November 25, 2015, to comments and recommendation included in the October 16, 2015 ACRS letter on "The Reactor Oversight Process Enhancements." The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of December 1, 2015, to comments and recommendation included in the November 12, 2015 ACRS letter on "Report on the Safety Aspects of the License Renewal Application for Davis-Besse Nuclear Power Station." The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of December 13, 2015, to comments and recommendation included in the November 17, 2015 ACRS letter on "The Revised Fuel Cycle Oversight Process Cornerstones." The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of December 28, 2015, to comments and recommendation included in the November 13, 2015 ACRS letter on "Draft SECY Paper, 'Recommendations on Issue Related to Implementation of a Risk Management Regulatory Framework.'" The Committee decided that its report and the staff's response adequately describe the differing points of opinion on this matter, and no further written exchange was needed.
- The Committee considered the Director of Nuclear Regulatory Research's response of December 3, 2015, to the quality assessment included in the November 17, 2015 ACRS letter on "ACRS Assessment of the Quality of Selected NRC Research Projects – FY 2015." The Committee was satisfied with the Director of Nuclear Regulatory Research's response.

SCHEDULED TOPICS FOR THE 632nd ACRS MEETING

The following topics are scheduled for the 632nd ACRS meeting, to be held on March 3-5, 2016:

- Non-Power Production and Utilization Facilities Proposed License Renewal Rulemaking
- Biennial Review and Evaluation of the NRC Safety Research Program
- Group 2 Fukushima Tier 2 and 3 Closure Plans
- Meeting with the Commission

Sincerely,

/RA/

Dennis C. Bley
Chairman

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

632nd FULL COMMITTEE MEETING

March 3-5, 2016

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TODAY'S DATE: March 3, 2016

NAME

Liz Gormsen
 Andi Mervitt
 Robert Beall
 Kevin Folk
 Tony Bowers
 Rich Clement
 KOSMAS LOIS
 Nan Gilles
 Justin Fuller
 Howard Schwartz
 Robert Kreck
 NATAN SIE
 Sud Basu
 Joe Sebrosky
 ERIC BOWMAN
 TIM REED
 Raj Anilude
 Ed Fuller
 Deirdra Spaulding-Yesman
 Thom Herrity
 Edward Roach
 UNPINE SHUP
 DINESH TANEJA
 Pang Chung
 RICHARD LOT

NRC ORGANIZATION

ICF International
 ICF International
 NRR
 NRR
 NRC/NRR/DIES
 NRC
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 COMM/OCM
 COMM/OCM
 OGC
 NRC/COM/INR
 NRC/RES
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 NRC/NRO/DEIA/ICE
 RES/ICEEB
 RES/DSA/FSCB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
632nd FULL COMMITTEE MEETING

March 3-5, 2016

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TODAY'S DATE: March 3, 2016

	<u>NAME</u>	<u>AFFILIATION</u>
1	Bill Williams	CUA/BWR OG
2	JEFF CARL	JENSEN Hughes
3	Andrew Dercher	JENSEN HUGHES
4	Damian Minzio	PUROG
5	N. Reed LaBarge	PLW ROG
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