



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

August 2, 2016

NOTE TO: FILE

FROM: Sherry Meador, Technical Secretary */RA/*
Advisory Committee on Reactor Safeguards

The minutes of the subject meeting were certified on May 20, 2016 as the official record of the proceedings of that meeting.



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

May 20, 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 634th FULL COMMITTEE MEETING
HELD ON MAY 5-7, 2016, IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on May 20, 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**

May 13, 2016

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

FROM: J. Sam Armijo */RA/*
ACRS Chairman

SUBJECT: MINUTES OF THE 634th MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),
MAY 5-7, 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	05/13/2016	05/13/2016

OFFICIAL RECORD COPY

MINUTES OF THE 634th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

ROCKVILLE, MARYLAND

The 634th 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 May 5-7, 2016. A copy of the meeting agenda is attached.

The summary report [ML16155A117] 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

A. Valentin
M. Banks
M. Snodderly
K. Weaver

A list of other attendees is attached.



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

**AGENDA
634th ACRS MEETING
MAY 5-7, 2016
11545 ROCKVILLE PIKE, ROCKVILLE, MD**

THURSDAY, MAY 5, 2016, CONFERENCE ROOM T-2B1

- 1) 8:30 AM – 8:35 AM Opening Remarks by the ACRS Chairman (Open) (DCB/ADV)
- 1.1) Opening Statement
 - 1.2) Items of Current Interest

- 2) 8:35 AM – 10:00 AM Additional Guidance to Support the Closure Plan for the
Reevaluation of Flooding Hazards (Open) (JWS/MRS)
- 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefings by and discussions with representatives of the
NRC staff regarding implementation of the mitigating
strategies and flooding hazard reevaluation action plan

10:00 AM - 10:15 AM

***** BREAK *****

- 3) 10:15 AM – 11:45 AM Review of Fukushima Tier 2 Group 3 Recommendation Regarding
Other Natural Hazards Screening Evaluations (Open) (JWS/KDW)
- 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefings by and discussions with representatives of the
NRC staff regarding the reviews of other natural hazards
screening evaluations

11:45 AM - 1:00 PM

***** LUNCH *****

- 4) 1:00 PM – 3:00 PM NuScale Topical Report TR-0515-13952, Risk Significance
Determination - Use of RAW Importance Measure (Open/Closed)
(MLC/MB)
- 4.1) Remarks by the Subcommittee Chairman
 - 4.2) Briefings by and discussions with representatives of the
NRC staff regarding the safety evaluation associated with
the subject NuScale topical report

[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).]

5) 3:00 PM – 6:00 PM

Preparation of ACRS Reports (Open/Closed)

- 5.1) Updated Guidance for Performing the Integrated Assessment for External Flooding (JWS/MRS)
- 5.2) Review of Fukushima Tier 2 Group 3 Recommendation Regarding Other Natural Hazards Screening Evaluations (JWS/KDW)
- 5.3) NuScale Topical Report TR-0515-13952, Risk Significance Determination - Use of RAW Importance Measure (MLC/MB)

[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, MAY 6, 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/ADV)

- 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/ADV/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 – 6:00 PM

Preparation of ACRS Reports (Open/Closed)

8.1) 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, MAY 7, 2016, CONFERENCE ROOM T-2B1

9) 8:30 AM – 11:30 AM

Preparation of ACRS Reports (Open/Closed)

9.1) 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).]

10) 11:30 AM – 12:00 PM

Miscellaneous (Open) (DCB/ADV)

10.1) 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**

June 8, 2016

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

SUBJECT: SUMMARY REPORT – 634th MEETING OF THE ADVISORY COMMITTEE ON
REACTOR SAFEGUARDS, MAY 5-6, 2016

Dear Chairman Burns:

During its 634th meeting, May 5-6, 2016, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following letters and memoranda:

LETTERS

Letters to Victor M. McCree, Executive Director for Operations, NRC, from Dennis C. Bley, Chairman, ACRS:

- “NRC Staff Updated Assessment of Fukushima Tier 2 Recommendations Related to Evaluation of Natural Hazards other than Seismic and Flooding,” dated May 17, 2016
- “Draft Interim Staff Guidance JLD-ISG-2016-01, ‘Guidance for Activities related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment’,” dated May 18, 2016
- “NuScale Power, LLC Licensing Topical Report, ‘Risk Significance Determination’,” dated May 18, 2016

MEMORANDA

Memoranda to Victor M. McCree, Executive Director for Operations, NRC, from Andrea D. Valentin, Executive Director, ACRS:

- “Documentation of Receipt of Applicable Official NRC Notices to The Advisory Committee on Reactor Safeguards for May 2016,” dated May 16, 2016
- “Draft Regulatory Guide 1.117, ‘Protection against Extreme Winds and Missiles for Nuclear Power Plants’,” Revision 2, dated May 16, 2016

HIGHLIGHTS OF KEY ISSUES

1. Draft Interim Staff Guidance JLD-ISG-2016-01, "Guidance for Activities related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment"

The Committee met with representatives of the NRC staff and the Nuclear Energy Institute (NEI) to discuss draft Interim Staff Guidance JLD-ISG-2016-01, "Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment." Interim Staff Guidance JLD-ISG-2016-01 endorses, with some clarifications, the graded evaluation process and guidance in NEI 16-05, "External Flooding Integrated Assessment." The integrated assessments and focused evaluations of reevaluated flooding hazards described in NEI 16-05 may account for the FLEX mitigation strategies in the context of overall plant response, or they may confirm that flood protection strategies and installed plant equipment can effectively cope with the reevaluated flood, without benefit from the FLEX equipment.

Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on this matter, dated May 18, 2016, with the following conclusions and recommendations: 1) Except for the treatment of flooding from local intense precipitation, the graded approach that is endorsed in JLD-ISG-2016-01 provides an appropriate framework to evaluate the plant-specific effects from reevaluated flooding hazards, 2) If mitigation strategies are needed to maintain or restore key safety functions during a flood caused by local intense precipitation, the staff should review those evaluations in the same manner as the integrated assessments that are performed for other flooding mechanisms, 3) The staff should better specify expectations for assurance of reliable personnel performance in the integrated assessments that are performed according to the guidance for the higher frequency scenarios in Path 5 and all scenarios in Path 4, 4) The staff should develop guidance to ensure that the evaluations examine external flooding scenarios that result from seismic events which also cause damage at the plant site, and 5) It would be challenging to conduct comprehensive and timely peer review of these flooding assessments according to the guidance and expectations.

2. NRC Staff Updated Assessment of Fukushima Tier 2 Recommendations Related to Evaluation of Natural Hazards other than Seismic and Flooding

The Committee met with the NRC staff to discuss the staff's White Paper, "NRC Staff Updated Assessment of Fukushima Tier 2 Recommendations related to Evaluation of Natural Hazards other than Seismic and Flooding." The staff discussed its assessments and conclusions, and their plans to complete these evaluations by the end of 2016.

Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on this matter, dated May 18, 2016, with the following conclusions and recommendations: 1) We agree with the staff's conclusion that further evaluation of the effects from high winds and snow loads is warranted, 2) We plan to review the analyses which support the staff's conclusions that no further effort is needed to examine the effects from downstream dam failures and intake water seiche conditions at selected sites, 3) The staff has provided adequate justification for excluding most other natural hazards from further evaluation. The following items merit additional attention: Hazards that may disable the ultimate heat sink as a source of water with adequate quality to support long-term heat removal. Hazards that may prevent reliable operation of plant equipment and alternative mitigation equipment which rely on adequate air quality for combustion or ventilation, and 4) The staff should remain involved in the multi-agency investigation of severe geomagnetic storms. They need to distill from this effort expeditiously those factors important for the regulatory process.

3. NuScale Power, LLC Licensing Topical Report, "Risk Significance Determination"

The Committee met with representatives of the NRC staff to discuss its review of the NuScale Topical Report, "Risk Significance Determination." The topical report outlined the proposed methodology for defining the term "significant" to identify candidate risk significant structures, systems, and components (SSCs) for input to the NuScale Design Reliability Assurance Program. The topical report methodology involves the use of alternative metrics compared to Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," for defining the term "significant."

Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on this matter, dated May 18, 2016, with the following conclusion and recommendations: 1) The staff continues to deal with criteria for determining risk significance in a case-by-case manner and this can lead to inconsistencies in regulatory positions, 2) The staff should develop a consistent approach by adopting a continuous scale to determine quantitative risk significance criteria, with more margin allowed for plants with lower risk, 3) The proposed approach by NuScale is reasonable provided that the core damage frequency (CDF) or large release frequency (LRF) remains consistent with their current estimates in the licensing topical report, and 4) The staff will need to address the multi-module aspects of the NuScale design that could alter the CDF and LRF risk estimates and associated SSCs classification.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the Executive Director for Operations' response of April 7, 2016, to the March 15, 2016 ACRS letter, "Non-power Production or Utilization Facilities Proposed License Renewal Rulemaking." The Committee was satisfied with the Executive Director for Operations' response.

SCHEDULED TOPICS FOR THE JUNE 2016 ACRS MEETING

The ACRS meeting scheduled to be held on June 8-10, 2016 was canceled.

Sincerely,

/RA/

Dennis C. Bley
Chairman

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
634th FULL COMMITTEE MEETING
May 5-7, 2016

PLEASE PRINT

TODAY'S DATE: May 5, 2016

	<u>NAME</u>	<u>NRC ORGANIZATION</u>
1	ERIC BOWMAN	NRR/JLD
2	Joe Sebrosky	NRR/JLD
3	STEVE WYMAN	NRR/JLD
4	Aida Rivera	NRO/DSEA
5	Nilesh Chokshi	NRO/DSEA
6	Chris Cook	NRO/DSEA
7	ROBERT BERNARD	NRR/JLD
8	David Desaulniers	NRO/DCIP
9	Mehdi ReisiFard	NRR/DRA
10	ANTHONY MINARIK	NRR/JLD
11	JUAN URIBE	NRR/JLD
12	MICHAEL D. MAZAIKA.	NRO/DSEA/RHMBI
13	GARSON CURRAN	NRR/DSS
14	Bruce Harvey	NRO/DSEA/RHMBI/RMOT
15	Stewart Scitex	NRR/JLD
16	GEORGE THOMAS	NRR/DLR
17	Omid Tabatabai	NRC/NRO/DNRL/LBI
18	Mark Tonacci	NRC/NRO/DNRL/LBI
19	John Segale	NRC/NRO/PSRA
20	John Mounier	NRC/NRO/PSRA
21	Lynn Mrowka	NRC/NRO/PSRA/SPRA
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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
634th FULL COMMITTEE MEETING

May 5-7, 2016

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TODAY'S DATE: May 5, 2016

	<u>NAME</u>	<u>AFFILIATION</u>
1	MIKE TSCHILTZ	NEI
2	THOMAS ZACHARIAH	NEI
3	STEVEN POPE	NWSCALE
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