



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

October 22, 2012

NOTE TO: FILE

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

The minutes of the subject meeting were certified on May 23, 2012 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 23, 2012

MEMORANDUM TO: ACRS Members

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

SUBJECT: CERTIFICATION OF THE MEETING MINUTES FROM
THE ADVISORY COMMITTEE ON REACTOR
SAFEGUARDS 594th FULL COMMITTEE MEETING
HELD ON MAY 10-12, 2012, IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on May 23, 2012 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 23, 2012

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

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

SUBJECT: MINUTES OF THE 594th MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),
MAY 10-12, 2012

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:RSB/Sunsi
NAME	SMeador	CSantos/sam
DATE	05/23/12	05/23/12

OFFICIAL RECORD COPY

MINUTES OF THE 594th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

ROCKVILLE, MARYLAND

The 594th 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 10-12, 2012. A copy of the meeting agenda is attached.

The summary report 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. J. Sam Armijo (Chairman), Mr. John Stetkar (Vice-Chairman), Mr. Harold Ray (Member-at-Large), Dr. Sanjoy Banerjee, Dr. Dennis Bley, Mr. Charles Brown, Dr. Michael Corradini, Dr. Dana A. Powers, Dr. Joy Rempe, Dr. Michael Ryan, Dr. Stephen Schultz, Mr. Gordon Skillman, Dr. William Shack, and Mr. John Sieber.

ACRS Staff

E. Hackett
C. Santos
K. Weaver
W. Wang
H. Nourbakhsh

A list of other attendees is attached.



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

**AGENDA
594th ACRS MEETING
May 10-12, 2012**

**THURSDAY, MAY 10, 2012, CONFERENCE ROOM T-2B1, 11545 ROCKVILLE PIKE,
ROCKVILLE, MD**

- 1) 8:30 AM - 8:35 AM Opening Remarks by the ACRS Chairman (Open) (JSA/EMH)
1.1) Opening Statement
1.2) Items of Current Interest
- 2) 8:35 AM - 9:30 AM U.S. EPR Spent Fuel Cask Transfer Facility (Open/Closed)
 (DAP/KDW)
2.1) Remarks by the Subcommittee Chairman
2.2) Briefing by and discussions with representatives of AREVA
 regarding the U.S. EPR spent fuel cask transfer facility
 including an overview of the fuel storage and handling
 system.

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

9:30 AM - 9:45 AM

***** BREAK *****

- 3) 9:45 AM - 11:45 AM Selected Chapters of the Safety Evaluation Report (SER) with
Open Items Associated with the U.S. EPR Design Certification
(DC) Application (Open/Closed) (DAP/KDW)
3.1) Remarks by the Subcommittee Chairman
3.2) Briefing by and discussions with representatives of the
 NRC staff and AREVA regarding selected chapters of the
 NRC staff's SER with open items associated with the U.S.
 EPR DC application.

**[NOTE: A portion of this session 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 - 12:45 PM

***** LUNCH *****

4) 12:45 PM - 2:15 PM

State-of-the-Art Reactor Consequence Analysis (SOARCA) Project (Open) (WJS/HPN)

- 4.1) Remarks by the Subcommittee Chairman
- 4.2) Briefing by and discussions with representatives of the NRC staff regarding the Draft NUREG Report on the SOARCA Project.

2:15 PM - 2:30 PM

***** BREAK *****

5) 2:30 PM - 4:00 PM

St. Lucie Unit 1 Extended Power Uprate Application (Open/Closed) (SB/WW)

- 5.1) Remarks by the Subcommittee Chairman
- 5.2) Briefing by and discussions with representatives of the NRC staff and Florida Power & Light Company regarding the St. Lucie Unit 1 Extended Power Uprate Application.

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

4:00 PM - 4:15 PM

***** BREAK *****

6) 4:15 PM - 7:00 PM

Preparation of ACRS Reports (Open/Closed)

- 6.1) Draft Final NUREG-1921, "Fire HRA Guidelines" (JWS/JCL)
- 6.2) Selected Chapters of the SER with Open Items Associated with the U.S. EPR DC Application (DAP/KDW)
- 6.3) SOARCA Project (WJS/HPN)
- 6.4) St. Lucie Unit 1 Extended Power Uprate Application (SB/WW)

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

**FRIDAY, MAY 11, 2012, CONFERENCE ROOM T-2B1, 11545 ROCKVILLE PIKE,
ROCKVILLE, MD**

- 7) 8:30 AM - 8:35 AM Opening Remarks by the ACRS Chairman (Open) (JSA/EMH)
- 8) 8:35 AM - 11:00 AM Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (JSA/EMH)
- 8.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings.
- 8.2) 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 ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.]**
- 9) 11:00 AM - 11:15 AM Reconciliation of ACRS Comments and Recommendations (Open) (JSA/EMH/CS)
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.
- 11:15 AM - 12:30 PM *** LUNCH *****
- 10) 12:30 PM - 2:00 PM Preparation for Meeting with the Commission on June 7, 2012 (Open) (JSA/EMH)
Discussion of the topics for upcoming meeting with the Commission on June 7, 2012.
- 2:00 PM - 2:15 PM *** BREAK *****

- 11) 2:15 PM - 7:00 PM Preparation of ACRS Reports (Open/Closed)
Continue discussion of the proposed ACRS reports listed under Item 6.

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

SATURDAY, MAY 12, 2012, CONFERENCE ROOM T-2B1, 11545 ROCKVILLE PIKE, ROCKVILLE, MARYLAND

- 12) 8:30 AM - 11:30 AM Preparation of ACRS Reports (Open/Closed)
Continue discussion of the proposed ACRS reports listed under Item 6.

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

- 13) 11:30 AM - 12:00 PM Miscellaneous (Open) (JSA/EMH)
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, phone number 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.



The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jaczko:

REPORT

- State-of-the-Art Reactor Consequence Analyses (SOARCA) Project, dated May 15, 2012

Letters to R. W. Borchardt, Executive Director for Operations, NRC, from J. Sam Armijo, Chairman, ACRS:

- Draft Final NUREG-1921, (EPRI Report 1023001), “EPRI/NRC-RES Fire Human Reliability Analysis Guidelines,” dated May 17, 2012
- Chapters 3, 9, 14, and 19 of the Safety Evaluation Report with Open Items Associated with the U.S. Evolutionary Power Reactor Design Certification Application, dated May 18, 2012

Memorandum to R. W. Borchardt, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- Withdrawal of Regulatory Guides 5.67 and 7.3

HIGHLIGHTS OF KEY ISSUES

1. U.S. EPR Spent Fuel Cask Transfer Facility

The Committee met with representatives of AREVA to discuss the U.S. EPR fuel storage and handling system. The fuel storage and handling system is similar to current operating French pressurized water reactor plants. AREVA provided an overview of the spent fuel transfer facility and operations in the fuel building. In addition, AREVA discussed beyond design basis accident scenarios.

Committee Action

This was an information briefing. No Committee action was necessary.

2. Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. EPR Design Certification (DC) Application

The Committee met with representatives of the NRC staff and AREVA to discuss the following chapters of the Safety Evaluation Report (SER) with Open Items associated with the review of the U.S. EPR DC application: Chapter 3, "Design of Structures, Components, Equipment, and Systems"; Chapter 9, "Auxiliary Systems"; Chapter 14, "Initial Test Program and Inspections, Tests, Analyses, and Acceptance Criteria"; and Chapter 19, "Probabilistic Risk Assessment and Severe Accident Evaluation." Representatives of AREVA provided a general overview of the U.S. EPR design certification application for each of the chapters including its major design features, main safety systems, severe accident mitigation strategies, and protection features for external hazards. The staff discussed its schedule for reviewing the EPR design certification application and summarized the open items in each of these SER chapters.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated May 18, 2012, concluding that its review of these SER chapters has not identified any additional issues that require further consideration by the Committee at this time. The Committee will review the staff's resolution of open items in these SER chapters in future meetings.

3. State-of-the-Art Reactor Consequence Analysis (SOARCA) Project

The Committee met with representatives of the NRC staff to discuss the SOARCA project. The staff presented a summary overview of the objectives, approach, and the results of the analyses for the two pilot plants, Surry and Peach Bottom. The staff also briefed the Committee on the ongoing SOARCA uncertainty analysis for Peach Bottom. The analyses in the SOARCA project are described as "best-estimate" analyses in NUREG-1935. However, this report does not define "best estimate." During the discussion with the staff it appeared that the "best estimate" is intended to mean "most likely." The Committee noted that some of the ongoing uncertainty analyses could affect the "best-estimate" results described in NUREG-1935 and its supporting documents.

Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated May 15, 2012, concluding that the SOARCA work is a major step forward in developing more realistic, integral deterministic analyses for severe accident progression for selected accident sequences. The Committee also provided recommendations regarding the conduct of uncertainty analyses and priorities for future work related to SOARCA.

4. St. Lucie, Unit 1, Extended Power Uprate Application

The Committee met with representatives of the NRC staff and Florida Power and Light Company (FPL), regarding the St. Lucie, Unit 1, Extended Power Uprate (EPU) application and the staff's associated draft safety evaluation report. St. Lucie, Unit 1, is a Combustion Engineering designed pressurized water reactor. FPL applied for a power uprate of approximately 12 percent above the currently licensed thermal power of 2700 megawatts thermal (MWt) to 3020 MWt. This uprate also represents approximately an 18 percent increase from its originally licensed thermal power of 2560 MWt. FPL summarized the modifications made to Unit 1 and presented analyses, methodologies, and results for non loss of coolant (LOCA) events, small break LOCAs, and large break LOCAs. FPL also presented the results of their analysis of the steam generator tube integrity under EPU conditions. The staff discussed the thermal conductivity degradation (TCD) issue and the license condition to account for the evolving treatment of TCD. Based on the data and evaluation of the calculations, the staff concluded FPL's safety analyses results analyses are acceptable.

Committee Action

The Committee will consider a proposed report on this matter during their June 6-8, 2012 meeting.

5. Withdrawal of Regulatory Guides 5.67 and 7.3

The Committee considered the staff's bases for withdrawing the following Regulatory Guides. The Committee has no objection to the staff's proposal to withdraw these Guides.

- Regulatory Guide 5.67, "Material Control and Accounting for Uranium Enrichment Facilities Authorized to Produce Special Nuclear Material of Low Strategic Significance"
- Regulatory Guide 7.3, "Procedures for Picking Up and Receiving Packages of Radioactive Materials"

RECONCILIATION OF ACRS RECOMMENDATIONS

- The Committee considered the EDO's response of March 15, 2012, to a recommendation included in the February 16, 2012, ACRS letter on draft final Revision 1 to Regulatory Guide 1.93, "Availability of Electric Power Sources." The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the EDO's response of April 9, 2012, to a recommendation included in the March 20, 2012, ACRS letter on the final safety evaluation report associated with the Florida Power and Light Turkey Point Nuclear Plant, Units 3 and 4, license amendment request for an extended power uprate. The Committee decided that it was satisfied with the EDO's response.

SCHEDULED TOPICS FOR THE 595th ACRS MEETING

The following topics are scheduled for the 595th ACRS meeting, to be held on June 6-8, 2012.

- Proposed Revision of 10 CFR Part 20 for Conformance with International Commission on Radiological Protection (ICRP) Recommendations
- Disposition of Near-Term Task Force (NTTF) Tier 3 Recommendations and Guidance Documents Associated with NTTF Recommendation 2.3
- Proposed Revision 1 to Regulatory Guide (RG) 1.192, "Operation and Maintainability Code Case Acceptability, ASME OM Code"
- Grand Gulf Nuclear Station Unit 1 Extended Power Uprate Application
- Assessment of the Quality of Selected NRC Research Projects
- Meeting with the Commission
- Significant Reactor Operating Experiences

Sincerely,

/RA/

J. Sam Armijo
Chairman

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
594th FULL COMMITTEE MEETING

May 10-12, 2012

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TODAY'S DATE: May 10, 2012

	<u>NAME</u>	<u>AFFILIATION</u>
1	MATTHEW MILLER	AREVA
2	TIM STACK	AREVA
3	Darrell Gardner	AREVA
4	Sikanta Thomas	UNISLAR
5	Nitinkumar Pandya	AREVA
6	Dennis Willford	AREVA
7	PAVAN THALLAPRAGADA	AREVA
8	MASRUB KHAN	BECHTEL
9	Lodd Horton	FPL
10	Chris Wasik	FPL
11	Rich Anderson	FPL
12	STEVE HAUG	FPL
13	Jay Kabadie	FPL
14	Jack Hoffman	FPL
15	David Brown	FPL
16	Eric Boon	Westinghouse
17	Bert Dunn	AREVA
18	Tim Lindquist	AREVA
19	ANANT MOHAN	AREVA
20	Chris Allison	Areva
21	Rudy Gie	FPL
22	JOE PALJUG	AREVA
23	Steve Fluit	Babcock & Wilcox
24	Steve Hamrick	FPL
25	ERIC KATZMAN	FPL
26		
27		
28		

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TODAY'S DATE: May 10, 2012

NAME	NRC ORGANIZATION
DON DUBE	NRO/DSRA
Richard Cheng	RES/DSA
R Sullivan	NSIR
Jen Gall	NRR/SKXS
Sim Miranda	NRR/SKXS
Ben Parks	NRR/SKXS
Allen Howe	NRR/NRR/DORL
Nicholas DiFrancesco	NRR/DORL
Jonathan Barr	RES/DSA
Farideh Saba	NRR/DORL
Doug Broadus	NRR/DORL
ANTHONY MENDIOLA	NRR/DSS/SNPB
Susan E. Cooper	RES/DRA/HFRB
Matthew Panicker	NRR/DSS/SNPB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
594th FULL COMMITTEE MEETING
May 10-12, 2012

PLEASE PRINT

TODAY'S DATE: May 10, 2012

	<u>NAME</u>	<u>NRC ORGANIZATION</u>
1	Getachew Tesfaye	NRC/NRO/DNRL
2	MICHAEL MIERBICKI	NRC/NRO/DNRL
3	Ed Stutzman	NRC/NRO/DSEA/APAC
4	Frank Pham	NRC/NRO/DSEA/SPRA
5	ANGELO STUBBS	NRC/NRO/DSEA/BFPF
6	Eileen McKenna	NRC/NRO/DSEA/BPTS
7	Gordon Curran	NRC/NRO/DSEA/BPTS
8	David Petrak	NRC/NMIS/SFST/SAMP
9	LARRY WHEELER	NRC/NRO/DSEA/BPTS
10	David Terao	NRC/NRO/DE
11	PRABHA KRISHNASWAMI	EMC ² /NRC-CONTRACTOR
12	KEITH WICKHAM	EMC ² /DEC CONTRACTOR
13	ERIC REICHELT	NRC/NRO/DE
14	Torico Sweet	NRC/NRO/BPTS
15	Raul Hernandez	NRC/NRO/BFPF
16	Tuan Le	NRC/NRO/DE/EMB
17	Anne-Marie Grady	NRC/NRO/DSEA
18	Ranad Jaganathan	NRC/NMIS/SFAS
19	Joe Colacino	NRC/NRO/DE
20	Andrea Keim	NRC/NRO/DCIP
21	Ed Fuller	NRC/RES/DSA
22	Charles Ader	NRC/NRO/DSEA
23	Tanya Ford	NRC/NRO/DNRL
24	KEVIN KAWANAGA	NRC/NRO/DCIP
25	Yin Low	NRC/NRO/DE
26	David Jaffe	NRC/NRO/DNRL
27	JOHN PARILLO	NRC/NAR/DRA
28	Andrea Kock	NRC/OCM/WCO