

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

May 2, 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 592<sup>nd</sup> FULL COMMITTEE MEETING

HELD ON MARCH 8-10, 2012 IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on March 22, 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

March 22, 2012

MEMORANDUM TO: Sherry Meador, Technical Secretary

Advisory Committee on Reactor Safeguards

FROM: J. Sam Armijo //RA/

ACRS Chairman

SUBJECT: MINUTES OF THE 592<sup>nd</sup> MEETING OF THE ADVISORY

COMMITTEE ON REACTOR SAFEGUARDS (ACRS),

MARCH 8-10, 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	03/22/12	03/22/12

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## MINUTES OF THE 592<sup>nd</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

#### ROCKVILLE, MARYLAND

The 592<sup>nd</sup> 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 March 8-10, 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 (<a href="mailto:pdr.resource@nrc.gov">pdr.resource@nrc.gov</a> or 1-800-397-4209), or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS), or at <a href="http://www.nrc.gov/reading-rm/doc-collections/acrs/agenda/">http://www.nrc.gov/reading-rm/doc-collections/acrs/agenda/</a>. 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. Said Abdel-Khalik, 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
- M. Banerjee
- C. Brown
- 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 592<sup>nd</sup> ACRS MEETING March 8-10, 2012

## THURSDAY, MARCH 8, 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 - 10:30 AM <u>Selected Chapters of the Safety Evaluation Report (SER) with</u>

Open Items Associated with the US Evolutionary Power Reactor (EPR) Design Certification Application (Open/Closed) (DAP/KDW)

2.1) Remarks by the Subcommittee Chairman

2.2) Briefing by and discussions with representatives of the NRC staff and AREVA Nuclear Power regarding selected chapters of the NRC staff's SER with open items associated with the EPR design certification 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)]

10:30 AM - 10:45 AM \*\*\* BREAK \*\*\*

3) 10:45 AM - 12:15 PM Source Terms for Small Modular Reactors. (Open) (DCB/MB)

3.1) Remarks by the Subcommittee Chairman

3.2) Briefing by and discussions with representatives of the Nuclear Energy Institute (NEI) regarding the development of source terms for small modular reactors.

12:15 PM - 1:15 PM \*\*\* LUNCH \*\*\*

4) 1:15 PM - 2:45 PM

#### Extremely Low Probability of Rupture (Open) (JSA/CLB)

- 4.1) Remarks by the Subcommittee Chairman
- 4.2) Briefing by and discussions with representatives of the NRC staff regarding the development of a technical basis for meeting the requirements of 10 CFR 50 Appendix A, General Design Criteria 4. The staff's approach involves developing a computer model that calculates failure probabilities due to various degradation mechanisms.

2:45 PM - 3:00 PM

\*\*\* BREAK \*\*\*

5) 3:00 PM - 4:30 PM

<u>Turkey Point Units 3 and 4 Extended Power Uprate Application</u> (Open/Closed) (WJS/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 Turkey Point Units 3 and 4 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)]

6) 4:30 PM - 7:00 PM

Preparation of ACRS Reports (Open/Closed)

- 6.1) Implementation of the Near-Term Task Force (NTTF)
  Recommendations Stemming from the Fukushima event
  (SAK/AFD)
- 6.2) Selected Chapters of the SER with Open Items Associated with the US EPR Design Certification Application (DAP/KDW)
- 6.3) Extremely Low Probability of Rupture (JSA/CLB)
- 6.4) Turkey Point Units 3 and 4 Extended Power Uprate Application (WJS/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, MARCH 9, 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 - 10:00 AM <u>Future ACRS Activities/Report of the Planning and Procedures</u> <u>Subcommittee</u> (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) 10:00 AM - 10:15 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.

10:15 AM - 10:30 AM \*\*\* BREAK \*\*\*

10) 10:30 AM - 11:30 AM Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program (Open) (MLC/HPN)

- 10.1) Remarks by the Subcommittee Chairman
- 10.2) Discussion on the proposed draft final report on the biennial ACRS review of the NRC Safety Research Program.

11:30 AM - 12:30 PM \*\*\* LUNCH \*\*\*

11) 12:30 PM - 7:00 PM

#### Preparation of ACRS Reports (Open/Closed)

- 11.1) Implementation of the Near-Term Task Force (NTTF)
  Recommendations Stemming from the Fukushima Event
  (SAK/AFD)
- 11.2) Selected Chapters of the SER with Open Items Associated with the US EPR Design Certification Application (DAP/KDW)
- 11.3) Extremely Low Probability of Rupture (JSA/CLB)
- 11.4) Turkey Point Units 3 and 4 Extended Power Uprate Application (WJS/WW)
- 11.5) Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program (MLC/HPN)

There may be 15-minute breaks at some point during this activity.

[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, MARCH 10, 2012, CONFERENCE ROOM T-2B1, 11545 ROCKVILLE PIKE, ROCKVILLE, MARYLAND

12) 8:30 AM - 1:00 PM

Preparation of ACRS Reports (Open/Closed)

Continue discussion of the proposed ACRS reports listed under Item 11. There may be a 15 break at some point during this activity.

[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) 1:00 PM - 1:30 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.

#### **NOTES:**

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

March 29, 2012

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

SUBJECT: SUMMARY REPORT – 592<sup>nd</sup> MEETING OF THE ADVISORY COMMITTEE ON

REACTOR SAFEGUARDS, MARCH 8-10, 2012

#### Dear Chairman Jaczko:

During its 592<sup>nd</sup> meeting, March 8-10, 2012, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letters, and memorandum:

#### **REPORT**

Report to Gregory B. Jaczko, Chairman, NRC, from J. Sam Armijo, Chairman, ACRS:

 ACRS Review of Proposed Orders in Response to Fukushima Lessons Learned (SECY-12-0025), dated March 14, 2012

#### **LETTERS**

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

- Response to February 27, 2012 Letter Regarding Final Disposition of Fukushima-Related ACRS Recommendations in Letters Dated October 13, 2011 and November 8, 2011, dated March 13, 2012.
- Chapters 6, 7, 11, 13, 15, 16, and 18 of the Safety Evaluation Report with Open Items Associated with the U.S. Evolutionary Power Reactor Design Certification Application, dated March 15, 2012
- 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, dated March 20, 2012

 Review and Evaluation of the NRC Safety Research Program, to be issued by April 15, 2012

#### **MEMORANDUM**

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

Draft Final Regulatory Guide 1.82, dated March 15, 2012

#### HIGHLIGHTS OF KEY ISSUES

1. <u>Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. Evolutionary Power Reactor (EPR) Design Certification Application</u>

The Committee met with representatives of the NRC staff and AREVA NP to discuss the following chapters of the SER with Open Items associated with the review of the U.S. EPR design certification application: Portions of Chapter 6, "Engineered Safety Features" (except for Sections 6.2.1.2 and 6.2.2); Chapter 7,"Instrumentation and Controls"; Chapter 11, "Radioactive Waste Management"; Chapter 13, "Conduct of Operations"; Portions of Chapter 15, "Transient and Accident Analysis" (except for Section 15.6.5); Chapter 16, "Technical Specifications"; and Chapter 18, "Human Factors Engineering." 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 number of open items in each of these SER chapters.

#### Committee Action

The Committee issued a letter to the EDO on this matter, dated March 15, 2012, concluding that the staff has identified appropriate open items in its review of these chapters of the U.S. EPR design certification application and can move to resolution of these open items. The Committee also identified four additional issues in connection with these chapters that the staff should consider as they resolve the open items. These issues are associated with the "watchdog" timer design, the importance of human activities, operation with only three reactor coolant pumps, and the algorithm for the evaluation of the departure from nucleate boiling ratio (DNBR).

#### 2. Source Terms for Small Modular Reactors

The Committee met with representatives of the Nuclear Energy Institute (NEI) to discuss the development of a framework for establishing source terms for small modular reactors (SMRs). The focus of the current effort is on integrated pressurized water reactor (iPWRs). The industry has formed a working group for this activity. The work includes establishing a sound technical

basis for the radionuclide inventories in iPWRs, and the postulated release and transport mechanisms. The iPWR design and operations attributes that are different from the large light water reactors could result in the need for research. These attributes include the radionuclide composition, release point proximity to ground, and timing of release. Additional research and development would be needed for computer code development for SMR beyond design basis events, passive removal mechanisms in small containment and reactor volumes, and atmospheric dispersion at close distances. The task force work also includes a regulatory evaluation to determine applicable regulatory requirements and guidance. NEI plans to develop a position paper on the subject of SMR source terms.

#### **Committee Action**

This was an information briefing. No Committee action was necessary. The Committee plans to review assessment of accidents that could lead to core damage in SMRs.

#### 3. <u>Extremely Low Probability of Rupture (xLPR) Program</u>

The Committee met with representatives of the NRC staff to discuss the Extremely Low Probability of Rupture (xLPR) research project. 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 4 allows the dynamic effects of postulated pipe ruptures to be excluded from the design basis if the probability of pipe rupture is extremely low. Standard Review Plan (SRP) section 3.6.3, "Leak-Before-Break Evaluation Procedures," describes a deterministic assessment that can be used to demonstrate this low probability of pipe rupture. However, the SRP does not account for active degradation mechanisms such as primary water stress corrosion cracking. To address this issue, the xLPR program has been developed with the long-term goal of producing a probabilistic assessment tool that can be used to directly demonstrate compliance with GDC 4. Specifically, the tool would account for the effects of both active degradation mechanisms and the mitigation activities used to address this degradation. The staff presented the initial pilot study results used to assess effectiveness of the program, the capabilities of the xLPR codes, and the path forward for future work in this area.

#### Committee Action

The Committee will consider a proposed report on this matter during its April 12-14, 2012, meeting.

#### 4. Turkey Point Units 3 and 4 Extended Power Uprate Application

The Committee met with representatives of the NRC staff, Florida Power and Light Company (FPL), and their respective consultants to discuss the Turkey Point Nuclear Plant (PTN), Units 3 and 4, extended power uprate (EPU) application and the associated staff draft safety evaluation. FPL has applied for an EPU of approximately 15 percent above the current licensed thermal power of 2300 megawatts thermal (MWt) to 2644 MWt. This uprate also represents

approximately a 20 percent increase from the original licensed thermal power of 2200 MWt. The meeting reviewed remaining issues from the full committee meeting on January 18-19, 2012. The licensee summarized loss of offsite power (LOOP) events and the risk associated with a dual-unit LOOP. The licensee also addressed the shared systems for PTN Units 3 and 4. The staff presented the resolution of open items with a focus on the thermal conductivity degradation (TCD) issue. Also, the staff evaluated FPL's proposed interim solution involving safety analyses which account for the TCD. Based on the comparisons to data, the NRC analysis, and benchmark calculations, the staff concluded that the licensee's analysis methods and the safety analyses results are acceptable.

#### **Committee Action**

The Committee issued a letter to the Executive Director for Operations on this matter, dated March 20, 2012, recommending that the license amendment request for an extended power uprate of PTN, Units 3 and 4, be approved.

#### 5. Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program

The Committee completed its biennial review and evaluation of the safety research program sponsored by the NRC. In its evaluation of the NRC research activities, the Committee considered the programmatic justification for the research as well as the technical approaches and progress of the work. The evaluation also identifies research crucial to the NRC mission.

#### Committee Action

The Committee will issue its report entitled, "Review and Evaluation of the Nuclear Regulatory Commission Safety Research Program," by April 15, 2012. The final report will be published as NUREG-1635, Volume 10.

#### 6. Draft Final Regulatory Guide 1.82

The Committee considered draft final Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," and decided not to review it. The Committee has no objection to the staff's proposal to issue this Regulatory Guide as final.

#### RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

 The Committee considered the EDO's response of January 24, 2012, to comments and recommendations included in the December 7, 2011, ACRS report on the safety aspects of the Progress Energy Florida Inc. combined license application for Levy Nuclear Plant, Units1 and 2. The Committee decided that it was not satisfied with the EDO's response, and it will consider a further response during its April 12-14, 2012, meeting.

- The Committee considered the EDO's response of January 30, 2012, to comments and recommendations included in the August 11, 2011, ACRS report on draft final Revision 3 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of January 27, 2012, to comments and recommendations included in the November 14, 2011, ACRS report on the draft final Revision 6 of Standard Review Plan Branch Technical Position 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of February 17, 2012, to comments and recommendations included in the January 26, 2012, ACRS report on the proposed draft rule for 10 CFR 50.46c, "Emergency Core Cooling System Performance During Loss-of-Coolant Accidents." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of November 3, 2011, to comments and recommendations included in the September 22, 2011, ACRS report on a proposed rulemaking to introduce a site-specific performance assessment and human intrusion analysis requirement to 10 CFR Part 61. On another closely related letter on this subject, the Committee also considered the EDO's response of February 3, 2012, to comments and recommendations included in the December 13, 2011, ACRS report on a revised Branch Technical Position regarding concentration averaging and encapsulation of low-level radioactive waste. The Committee decided that it was satisfied with both of the EDO responses.
- The Committee considered the EDO's response of February 27, 2012, to comments and recommendations included in the November 8, and October 13, 2011 ACRS reports on (1) the NRC Near-Term Task Force (NTTF) Report on Fukushima, (2) the staff's recommendations to be taken without delay, and (3) the staff's prioritization of recommended actions to be taken in response to Fukushima lessons learned. The Committee issued a response to the EDO on this matter, dated March 13, 2012, concluding that the staff's disposition of ACRS recommendations are appropriate with the following exceptions:
  - Discussions with stakeholders regarding near-term actions for additional hydrogen control and mitigation measures in plants with Mark I and Mark II containments should be included in the staff's Tier 1 actions.
  - ACRS recommendations regarding fire response procedures should be addressed as part of NTTF Recommendation 8 (Tier 1) since integration of the fire response procedures presents similar challenges to those faced by

integration of the Severe Accident Management Guidelines (SAMGs) and Extensive Damage Mitigation Guidelines (EDMGs) with the Emergency Operating Procedures (EOPs).

### SCHEDULED TOPICS FOR THE 593rd ACRS MEETING

The following topics are scheduled for the 593<sup>rd</sup> ACRS meeting, to be held on April 12-14, 2012:

- Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Calvert Cliffs Unit 3 Combined License (COL) Application
- Spent Fuel Pool Scoping Study
- Final Safety Evaluation Report Associated with the License Renewal Application for the Columbia Generating Station
- Risk-Informed Regulatory Framework for New Reactors
- Draft Final NUREG-1921, "Fire Human Reliability Analysis (HRA) Guidelines"

Sincerely,

/RA/

J. Sam Armijo Chairman

## ADVISORY COMMITTEE ON REACTOR SAFEGUARDS 592<sup>nd</sup> FULL COMMITTEE MEETING

### March 8-10, 2012

### PLEASE PRINT

TODAY'S DATE: March 8 <sup>th</sup> , 2012	
NAME.	<u>AFFILIATION</u>
Darrell Gardner	AREVA
BRIAN MINTYME	AREVA
TIM STACK	AREVA
Jana Bergman	Scientach_
Steve Kline	Beltel
EDWARD BURFS	Westinghouse
sam Hobbs	Enercon Services
Susan Vraherens	NRCOGC - NRP
STEVEN MIRSKY	Nu Scale Power
112 Abbott	FPL
STEVE HALE	FPL
Carl O'Farrill	FPL
Mark Averett	FPL
MIKE KILEY	FPL
CESARE FREPOU	Westing house
EdMonahan	Westing house
Mike Watson	Westinghouse
Steven Hamrick	FPLI
Charles Brinkman	Westinghouse
Jim Crusham	westinghouse
Paul Kersting	Westinghouse
SAM SHAFTER	FPL "
Philip Tiemenn	FPL
Nicholas DiFranceso	NRR/BORL/LPL3-2
THOMAS RODACK	WESTNEHOUSE
Yun Long	Westinghouse
Dan MENONFRO	WESTINGHOUSE

# ADVISORY COMMITTEE ON REACTOR SAFEGUARDS 592<sup>nd</sup> FULL COMMITTEE MEETING March 8-10, 2012

### PLEASE PRINT

TODAY'S DATE: March 8, 2012

<u>NAME</u>	NRC ORGANIZATION
Don Carlson	NRO DAMA
Jonathan DeGange	NRO/DARA
STU MAGRUDER?	NROLDARR
Any Cubase	NRO/DAKK
GREG CRANSTON	NROIDARR
Stephonne Coffin	NROI DVMK
Charles Adar	NRO/DSRI+
Pave Rilland	RES/DE
Tim Lupold	NRR/DE/EPNB
Michael Benson	#RES/DEICIB
SHAH MALIK	RESIDE/CBB
STUART RICHARDS	res n=
Rachel Vaucher	MACINIACINE/CZB
Rob Tryon my	Re3/10st
Ray 4 youngan	NEE (RES/DE/CAB)
Paul Cliphone	NRR DSS
Summer D Sum	NRR /DSS
DougBroaddus	NRR/DORL
Andrew Proffitt	NRR/DSS/SNP/S
Al Contus	MRC/RES/DE
MUDINE SHOOP	MRR/BRA/AHPB
Sam Miranda	NRR/DSS/SRXB
ANTHONY MENDIOLA	NRR/DSS/SNPB
Christoplar Hunt	MIRR / DE/ESGR
GREG CISTO	USS MILE
_ Bill Kulank	DSS/NKK
Jenny Vay	DSS/NRR
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# ADVISORY COMMITTEE ON REACTOR SAFEGUARDS 592<sup>nd</sup> FULL COMMITTEE MEETING March 8-10, 2012

### PLEASE PRINT

TODAY'S DATE: March 8, 2012

	NAME	NRC ORGANIZATION
1	Getachen Testage	NAC/NRO/DNRL
2	Shir- Jene Pery	MRC/MRO / DSRA
3	Michelle Hard	NRC/NRO/DSEA
4	Defindre Spalding - YRoman	NRCINIZO DE
5	HIEN LE	MRC(WRO/OSRA
6	Anne-Mary Coad	NEC INDUIDSEALSOUR
7	JC Dehmel	LINE/SCEA/RPAC
8	David Teras	NRC/DE/CIR
9	Mike McCoppin	NRC/NRO/DSEATRPAC
10	Ken Mott	Nec/NRO/DE/ICE
11	Downe Thang	NRCLURO IDE //CF
12	PROSANTA CHOWDHORS	Me/NRO/DNRL
13	Rashe Vaulos	MRCINROIDE/CXB
14	Elean Mckenna	NRE (NRO/JSRA
15	Tack Zhao	NRC/ANKO/DE
16	John Segala	NRC/NRO/DNAL
17	Billy Gleaves	NRC/NRO
18	JOHN BUDZYNSKI	NAC/WROIDSRA/SRSR
19	Terry Jackson	NRCI NROIDELICE
20	Wendell Morton	NRC/NRO/DE/TEEL
21	Yanely Walave	NRC/NRO/DARR/APRIS
22	DAV no/ DIEC	me / NSTR
23	PERLER	USNIC,
24	John Miskingan	NRC/NRO/DSRA
25	Wesley Held	NRC/ NRO/ DARR
26	JOHN PARILLO	NRC/NRRIDRA
27	Rowhaltera	NRO/DSEX/RPAC
28	Robert Schaaf	HRO/DSEB/RPAC