



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

October 23, 2009

MEMORANDUM TO:           ACRS Members

FROM:                    Sherry Meador                                 /RA/  
                              Technical Secretary, ACRS

SUBJECT:                 CERTIFICATION OF THE MEETING MINUTES FROM  
                              THE ADVISORY COMMITTEE ON REACTOR  
                              SAFEGUARDS 560<sup>th</sup> FULL COMMITTEE MEETING  
                              HELD ON MARCH 5-7, 2009, IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on April 21, 2009 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

April 21, 2009

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

FROM: Cayetano Santos, Chief */RA/*  
Reactor Safety Branch  
Advisory Committee on Reactor Safeguards

SUBJECT: MINUTES OF THE 560<sup>th</sup> MEETING OF THE ADVISORY  
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),  
March 5-7, 2009

I certify that based on my review of the minutes from the 560<sup>th</sup> ACRS Full Committee meeting, and to the best of my knowledge and belief, I have observed no substantive errors or omissions in the record of this proceeding subject to the comments noted below.

OFFICE	ACRS	ACRS:RSB
NAME	SMeador	CSantos/sam
DATE	04/ 21 /09	04/ 21 /09

OFFICIAL RECORD COPY

CERTIFIED

Date Certified: 4/21/2009

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March 5-7, 2009

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- III. Draft Final Revisions to 10 CFR 50.61, "Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events" (Open)
- IV. Draft Final Regulatory Guide 1.200 (formerly DG-1200), "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (Open)
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    - A. Reconciliation of ACRS Comments and Recommendations
    - B. Report on the Meeting of the Planning and Procedures Subcommittee Held on Wednesday, March 4, 2009.
    - C. Future Meeting Agenda

During its 560<sup>th</sup> meeting, March 5-7, 2009, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letters, and memoranda:

### REPORT

Report to Dale E. Klein, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Regulatory Guide 5.71, "Cyber Security Programs For Nuclear Facilities," dated March 19, 2009

### LETTERS

Letters to R. W. Borchardt, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Rule 10 CFR 50.61a, "Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events," dated March 13, 2009
- Draft Final Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel," dated March 19, 2009
- Crediting Containment Overpressure in Meeting the Net Positive Suction Head Required to Demonstrate that the Safety Systems can Mitigate the Accidents as Designed, dated March 18, 2009

### MEMORANDA

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

- Draft Final Revision 3 to Regulatory Guide 10.4, dated March 12, 2009
- Proposed Revision to Regulatory Guide 1.141 (DG-1213), dated March 12, 2009
- Proposed Revisions to Regulatory Guide 1.205 (DG-1218) and Standard Review Plan Section 9.5.1.2, dated March 12, 2009

MINUTES OF THE 560<sup>th</sup> MEETING OF THE  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

ROCKVILLE, MARYLAND

The 560<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on March 5-7, 2009. Notice of this meeting was published in the *Federal Register* on February 19, 2009 (72 FR 7707-7709). The purpose of this meeting was to discuss and take appropriate action on the items listed in the meeting agenda. The meeting was open to public attendance.

A transcript of selected portions of the meeting is available in the NRC's Public Document Room at One White Flint North, Room 1F-19, 11555 Rockville Pike, Rockville, Maryland. Copies of the transcript are available for purchase from Neal R. Gross and Co., Inc., 1323 Rhode Island Avenue, NW, Washington, DC 20005. Transcripts are also available at no cost to download from, or review on, the Internet at <http://www.nrc.gov/ACRS/ACNW>.

ATTENDEES

ACRS Members: Dr. Mario Bonaca (Chairman), Dr. Said Abdel-Khalik (Vice-Chairman), Mr. J. Sam Armijo (Member-at-Large), Dr. George E. Apostolakis, Dr. Sanjoy Banerjee, Dr. Dennis Bley, Mr. Charles Brown, Dr. Michael Corradini, Mr. Otto L. Maynard, Dr. Dana A. Powers, Mr. Harold Ray, Dr. Michael Ryan, Dr. William Shack, Mr. John Sieber, and Mr. John Stetkar. Other attendees can be found at the sign-in sheets in Appendix III.

I. Chairman's Report (Open)

[Note: Mr. Sam Duraiswamy was the Designated Federal Official for this portion of the meeting.]

Dr. Mario Bonaca, Committee Chairman, convened the meeting at 8:30 a.m. In his opening remarks he announced that the meeting was being conducted in accordance with the provisions of the Federal Advisory Committee Act. He reviewed the agenda items for discussion and noted that no written comments or requests for time to make oral statements from members of the public had been received. Dr. Bonaca also noted that a transcript of the open portions of the meeting was being kept and speakers were requested to identify themselves and speak with clarity and volume.

II. Draft Final Regulatory Guide 5.71 (formerly DG-5022), "Cyber Security Programs for Nuclear Facilities"

[Note: Mrs. Christina Antonescu was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff to discuss the Draft Final Regulatory Guide (RG) 5.71, "Cyber Security Programs for Nuclear Facilities," and NRC staff's resolution of stakeholders' comments. 10 CFR 73.54 establishes performance-based requirements to ensure that the functions of critical systems and critical digital assets are protected from cyber attack using a graded approach. RG 5.71 conveys NRC staff positions for developing a program that provides an effective protection mechanism against cyber attacks. It also provides NRC staff positions regarding the minimum set of elements needed within a program to protect a facility, the networks within it, the plant systems, the digital assets that implement system functions, and operating systems and applications within those digital assets that accomplish the functions to be protected. A generic cyber security plan template, NEI-08-09, is also being jointly-developed between staff and industry for later consideration as a reference in RG 5.71.

The Committee issued a report to the NRC Chairman, dated March 19, 2009, recommending that RG 5.71 not be published until it is revised to: (i) provide a reference Digital I&C (DI&C) computer, communication, and network security framework that identifies assets, associated plant functions, vulnerabilities, and interaction and access pathways; (ii) include examples and more specific guidance on how the stated requirements can be met; (iii) ensure that the guidance distinguishes between DI&C system and non-real-time information technology system architectures; and (iv) address the issues of threat assessment, dependency analysis, and the use of probabilistic risk assessment (PRA).

III. Draft Final Revisions to 10 CFR 50.61, "Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events"

[Note: Mr. Christopher Brown was the Designated Federal Office for this portion of the meeting.]

The Committee met with representatives of the NRC staff to discuss Draft Final rule 10 CFR 50.61a, "Alternative Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events." The discussion on the technical basis of the rule centered on the studies used to show that the rule was generally applicable across the entire fleet of pressurized water reactors (PWRs). The screening limits in the proposed rule were developed through detailed studies of three PWRs: Beaver Valley, Oconee, and Palisades. The generalization studies then considered five additional plants in order to infer the broader applicability of the rule. The events that offered the most challenge to vessel were found to be driven by factors that are similar across the fleet.

The main features of 10 CFR 50.61a include: limitations on applicability; less restrictive screening criteria; evaluation of plant-specific flaw distributions; and implementation of new embrittlement models and surveillance data evaluations. The staff's conclusion was that 10 CFR 50.61a is appropriate for providing protection of public health and safety and for reducing unnecessary regulatory burden.

The Committee issued a letter to the Executive Director for Operations on this matter, dated March 13, 2009, recommending that the rule be approved and that the staff verify and document the capability of nondestructive examination procedures used to characterize flaw distributions in reactor vessels. The Committee also concluded that an effort is needed to plan for the most effective use of surveillance samples in tracking embrittlement trends.

IV. Draft Final Regulatory Guide 1.200 (formerly DG-1200), "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"

[Note: Dr. Hossein Nourbakhsh was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff to discuss the Draft Final Revision 2 of Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." Revision 2 of Regulatory Guide 1.200 endorses a national consensus standard, jointly developed by the American Nuclear Society (ANS) and the American Society of Mechanical Engineers (ASME), regarding the content of a technically acceptable PRA. It also endorses PRA peer review guidance developed by the Nuclear Energy Institute (NEI). The staff discussed the resolution of public comments and the major outstanding industry issues. One of the industry comments is regarding independence of the peer reviewers. Industry claims that achieving the level of independence recommended by this guide could be a problem because of a lack of PRA experts. The staff also discussed the future work on standard development that would require future revisions to RG 1.200. The ACRS members' questions were related to alternative risk metrics, non-light water reactor PRA standards, and handling of uncertainty. The Committee plans to issue a letter on this matter during its April 2-4, 2009, meeting.

V. Draft Final Regulatory Guide 5.73 (formerly DG-5026), "Fatigue Management for Nuclear Power Plant Personnel"

[Note: Ms. Yoira Diaz-Sanabria was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff, the Professional Reactor Operator Society (PROS), the Nuclear Energy Institute (NEI), and the International Brotherhood of Electrical Workers (IBEW) to discuss Draft Final Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel." RG 5.73 endorses NEI 06-11, Revision 1, "Managing Personnel Fatigue at Nuclear Power Reactor Sites," with certain exceptions. The first exception relates to periodic overtime. The staff feels that allowing overtime on the day off could lead to rule violations, and that there is already sufficient flexibility to make this a rare situation. The second exception relates to outage activities at multi-unit sites. The staff disagrees with the NEI position that licensed operators responsible for an operating unit (and the operators who provide relief for them) can be considered to be "working on outage activities."

A representative of PROS stated that RG 5.73 will make utilities change the way they schedule staff on the front and back end of an outage, possibly having a negative impact on their ability to safely execute an outage. PROS recommended that instead of defining an outage as having a reactor unit disconnected from the grid, an outage be defined as the time period beginning one week prior to disconnecting the unit from the grid and ending when the unit is reconnected and achieves 75 percent power. This would require a rule change as well as a change to the regulatory guide. The PROS representative also recommended that for multi-unit sites, the concept of "outage unit" be replaced with a concept of "outage site." This would allow multiple unit facilities with combined control rooms to modify all site personnel schedules to accommodate the outage. The advantages of this include a simpler set of work rules and more opportunity to keep work teams intact over the outage.

A representative of NEI discussed industry implementation of the fatigue management rule and stated that the regulatory guide's exceptions to NEI 06-11 are not necessary. It is not clear what problem is being addressed by the exception to outage activities. Regarding overtime, the NRC staff position adds to the complexity of schedule changes and would result in a significant distraction for first-line supervision.

A representative of IBEW agreed with the PROS proposal on the definition of outages. Regarding the issue of periodic overtime, IBEW supports the NEI position. Regarding multi-unit outages, IBEW is still working to address the issue of multi-unit outages.

The Committee issued a letter to the Executive Director for Operations on this matter, dated, March 19, 2009, recommending that Draft Final Regulatory Guide 5.73 be issued as final. The Committee also recommended that the staff closely track industry pilot applications and confirm that practical scheduling and time monitoring programs achieve the desired fatigue management objectives within an integrated framework that maintains stable shift manning and workforce controls throughout all plant operating modes.

#### VI. International Human Reliability Analysis (HRA) Empirical Pilot Study

[Note: Dr. Hossein Nourbakhsh was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff, Sandia National Laboratories (SNL), the Organization for Economic Cooperation and Development Halden Reactor Project (HRP), and Paul Scherrer Institute (PSI) to discuss International Human Reliability Analysis (HRA) Empirical Study. The NRC staff described the benchmark study of HRA methods using control room simulator data; the NRC and industry efforts to improve HRA guidance; interactions with national and international experts to pursue testing and benchmarking of HRA methods; and further support for Halden Reactor Project initiatives. The NRC staff also discussed the value of simulator exercises in providing insights on issues related to human behavior that can be used to improve HRA methods.

Representatives of HRP discussed the new data analysis approach that was developed to optimize the comparison of HRA methods predictions to empirical observations and improve the usefulness of simulator data for HRA purposes. They also discussed experimental work that identified the extent of crew-to-crew variability, the significance of teamwork factors, and the importance of event dynamics in determining crew performance.

The representative of SNL discussed the qualitative analysis of HRA methods and its comparison with Halden crew data. All HRA methods identified some of the important factors that affected crew performance, but most HRA analyses failed to identify important factors for some Human Failure Events (HFEs). Additionally, several methods have significantly over- or underestimated the difficulty of some HFEs.

The representative of PSI discussed the quantitative comparisons between HRA predictions and the empirical data. There were significant limitations on the quantitative results. The quantitative comparisons supplement the qualitative comparisons and insights. The overall evaluation of the HRA methods is based on both qualitative and quantitative insights; however, the qualitative insights should be weighted more strongly. This was an information briefing and no Committee action was necessary at this time.

## VII. Subcommittee Reports

### Plant License Renewal Subcommittee Report (Indian Point License Renewal Application)

The Chairman of the Plant License Renewal Subcommittee provided a report to the Committee summarizing the results of the March 4, 2009, meeting with the NRC staff and representatives of Entergy Nuclear Operations Inc. (Entergy) to review the Draft Safety Evaluation Report (SER) with Open Items related to the license renewal application for the Indian Point Nuclear Generating Station, Units 2 (IP2) and 3 (IP3).

The current operating licenses for the IP2 and IP3 expire on September 28, 2013, and December 12, 2015, respectively. Entergy submitted the license renewal application on April 23, 2007. The staff's draft SER, issued in January 2009 contained 20 open items. During the meeting, Entergy described the plant, its operating history, the license renewal review methodology, the aging management programs, and its commitment tracking system. The staff discussed the open items and stated that 13 out of the 20 open items have been closed. The staff and Entergy are in the process of resolving the remaining seven open items.

A public interest group, Riverkeeper, provided written comments regarding its concerns on the Indian Point license renewal and made oral statements during the meeting.

The Committee plans to review the final SER related to the license renewal application for the Indian Point Nuclear Generating Station, Units 2 and 3 in September 2009.

### US-APWR Subcommittee Report

The Chairman of the US-APWR Subcommittee provided a report to the Committee summarizing the results of the February 18-20, 2009, site visits to Westinghouse offices in Monroeville, PA, and Mitsubishi Electric Power Products, Inc. (MEPPI) facilities in Cranberry Township, PA. On February 18, 2009, the Subcommittee participated in a tour and demonstration of the Westinghouse AP1000 digital control room simulator. On February 19, 2009, the Subcommittee met with representatives of the NRC staff and MEPPI to discuss three topical reports related to

large-break loss-of-coolant-accident (LOCA), small-break LOCA, and non-LOCA methodologies associated with the US-APWR Design. On February 20, 2009, the subcommittee participated in a tour and demonstration of the Mitsubishi APWR digital control room simulator. The Committee plans to continue its review of the topical reports and draft SERs related to the US-APWR design certification in future meetings.

## VI. Executive Session

[Note: Mr. Edwin Hackett was the Designated Federal Official for this portion of the meeting.]

### A. Reconciliation of ACRS Comments and Recommendations/EDO Commitments

- The Committee considered the EDO's response of January 23, 2009, to conclusions and recommendations included in the December 18, 2008, ACRS letter on the technical basis and rulemaking strategy for the revision of 10 CFR 50.46(b), "Loss of Coolant Accident Embrittlement Criteria for Fuel Cladding Materials." The Committee decided that it was satisfied with the EDO's response.

### B. Report of the Planning and Procedures Subcommittee Meeting

#### Review of the Member Assignments for the March ACRS Meeting

Member assignments for the March ACRS meeting were discussed. Reports and letters that would benefit from additional consideration at the future ACRS meeting were also discussed.

#### Anticipated Workload for ACRS Members

The anticipated workload for ACRS members through June 2009 was discussed. The objectives were:

- Review the reasons for the scheduling of each activity and the expected work product and to make changes, as appropriate
- Manage the members' workload for these meetings
- Plan and schedule items for ACRS discussion of topical and emerging issues

#### Biennial ACRS Report on the NRC Safety Research Program

The biennial ACRS report on the NRC Safety Research Program is due to the Commission in March 2010. Drs. Shack and Powers have the lead in coordinating the preparation of the report. Proposed assignments provided by Dr. Powers were discussed and members should provide input to Drs. Powers, Shack, and Nourbakhsh by September 15, 2009. A draft report will be prepared for Committee consideration during the October 2009 meeting.

## ACRS Meeting With the Commission

The ACRS is scheduled to meet with the Commission on June 4, 2009 to discuss items of mutual interest. A list of topics proposed by the ACRS is:

- Overview
- Accomplishments
- Future Plant Activities
- License Renewal/Power Uprates
- Ongoing/Future Activities
- Containment Overpressure Credit Issue
- Pressurized Thermal Shock Rule
- Digital I&C Matters
- Options to Revise NRC Regulations Based on ICRP Recommendations

## Draft Regulatory Guides and Proposed Standard Review Plan

The staff plans to issue the following Draft Regulatory Guides (DG) and proposed Standard Review Plan (SRP) for public comment and would like to know whether the Committee wants to review these documents prior to being issued for public comment.

### Proposed Revision 1 to Regulatory Guide 1.205 (DG-1218), "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants"

The staff issued the initial RG 1.205 in May 2006 to provide a method acceptable to the staff to comply with the requirements in 10 CFR 50.48(c) (commonly known as the National Fire Protection Association (NFPA) 805 Rule). At this time, 48 reactor units are transitioning to NFPA 805 using guidance provided in current version of RG 1.205. This includes pilot plants Oconee Units 1, 2, 3 and Shearon Harris. The non-pilots will benefit from the lessons learned from the pilot reviews. The revision of the RG is one of several vehicles to share lessons learned from the pilot reviews with other plants. The staff received the pilot license amendment requests in June 2008. Pilot plants supplemented their submittals with additional information. Based on the lessons learned from the pilot reviews, the staff is revising RG 1.205.

### Draft Regulatory Guides (DG) 1213, "Containment Isolation Provisions for Fluid Systems"

This Guide describes updated methods that the staff considers acceptable for use in complying with the Commission's requirements for containment isolation of fluid systems. DG-1213 is a proposed Revision 1 to Regulatory Guide 1.141 of the same title. The changes to the Guide consist of adding provisions in the Regulatory Positions to reflect operating experience. The American National Standards Institute (ANSI) N271-1976 Standard is still applicable, subject to the provisions listed in DG-1213.

### Proposed Standard Review Plan (SRP) Section 9.5.1.2, "Risk-Informed, Performance-Based Fire Protection Program"

This guidance is being issued as an alternate to the existing guidance currently provided under SRP section 9.5.1. This is stand alone guidance and is provided for the benefit of licensees of existing plants who choose to adopt Risk-Informed, Performance-Based Fire Protection Program that meets the requirements of National Fire Protection Association (NFPA) Standard 805. The NRC staff will also incorporate the approved SRP Section 9.5.1.2 into the next revision of RG 1.205 and any related guidance documents.

### Draft Final Regulatory Guide

The staff plans to issue the following Draft Final Regulatory Guide and would like to know whether the Committee wants to review this Guide prior to being issued final.

### Draft Final Revision 3 to Regulatory Guide 10.4, "Guide for the Preparation of Applications for Licenses to Process Source Material"

Regulatory Guide 10.4 describes the information currently acceptable to the NRC staff for the review of applications for new, renewal, or amended licenses to process source material in research and development, shielding, and alloy manufacturing. The proposed Revision 3 to Regulatory Guide 10.4 was issued for public comment as DG-0020 in September 2008. The public comment period closed November 10, 2008. No comments were received.

### Pellet Clad Interaction Failures Under Expedited Power Uprate (EPU) Conditions

During the meeting on March 3, 2009, the Materials, Metallurgy, and Reactor Fuels Subcommittee met with the staff to discuss pellet clad interaction failures under EPU conditions. This issue was raised during the ACRS review of the Susquehanna EPU application.

### Annual Visit to a Nuclear Plant and Meeting with the Regional Administrator

The members plan to visit a plant in Region II. Since the ACRS is in the process of reviewing the activities associated with the Watts Bar Unit 2 operating license, it was suggested that the members consider touring the Watts Bar plant (Unit 1 Operating and Unit 2 - 60% complete).

The meeting was adjourned at 12:00 noon on March 7, 2009.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
560<sup>th</sup> FULL COMMITTEE MEETING

March 5-7, 2009

PLEASE PRINT

TODAY'S DATE: March 5, 2009

	<u>NAME</u>	<u>NRC ORGANIZATION</u>
1	Timothy Kolb	NRR/DIRS
2	Greg Bowman	OG
3	Carole Reuelle	NRR/DIRS
4	Nancy L. Salgado	NRR/DIRS/IOLB
5	Howard Benowitz	OGC
6	Mike Boggi	NRR/IOLB
7	John Rejcek	RES/DE/RGDB
8	Autumn Szabo	RES/DRA
9	David Desautels	NRO/DCIP
10	Fred Brown	NRC/NRR
11	Sean Peters	NRC/RES/DRA
12	NATHAN SUE	NRC/RES/DRA
13	GARETH PARRY	NRC/NRR/DRA
14	Taesuk Hwang	NRR/DRA (foreign assignee)
15	Ann Ramsey-Smith	NRO/DCIP/CLP
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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
559<sup>th</sup> FULL COMMITTEE MEETING

March 5-7, 2009

PLEASE PRINT

TODAY'S DATE: March 5, 2009

	<u>NAME</u>	<u>AFFILIATION</u>
1	Mitchel R. Torgart	PROS
2	Russell Smith	NEI
3	<del>Timothy K</del>	
4	Todd Newkirk	IBEW
5	Charles Hassler	IBEW Local 94
6	John Butler	NEI
7	Ron BORING	SANDIA
8	April Whaley	Idaho National Lab
9	Katrina Groth	Univ of Maryland
10	Jeffrey Julius	Sciencetech
11	Andrew Bye	HALDEN PROJECT
12	Pierre LEBOIT	EDF R&D
13	Luca Podda FILLINI	PSI, Switzerland
14	SALVATORE MASSIIV	IFE - NORWAY (HALDEN PROJECT)
15	JOHN FORESTERL	SANDRA LABS
16	Vinh DANG	PAUL SCHERRER INSTITUTE
17	Helene PESME	EDF R&D (France)
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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
560<sup>th</sup> FULL COMMITTEE MEETING

March 5-7, 2009

PLEASE PRINT

TODAY'S DATE: March 6, 2008

<u>NAME</u>	<u>NRC ORGANIZATION</u>
Russell Sydnor	RES/DE/DICB
Jan Jung	NRO/DE/ICEZ
John Ridgely	RES/DE/AGDIB
Stewart Bentley	NRR/DE
Dan Santos	RES/DE
STELLA ORATA	NSIR/DSP
MONIKA COFLIN	NSIR/DSP
Robert Hardies	RES/DE/CI B
Matthew A. Mitchell	NRR/DCI/CVIB
JOHN LUBINSKI	NRC/DCI
Karl Sturzebecher	NRC/RES
Veronica Rodriguez	NRC/NRR
Stephen Dinsmore	NRC/NRR/DRA
BENJAMIN PARKS	NRC/NRR/DSS
Matthew Panicker	NRC/NRR/DSS/
Gooy S. Mizun	OGC/R&FC
Pat Purtscher	NRC/DCI/CVIB
Jocelyn Mitchell	RES/DSA
Mary Tr	RES/DRA
TAREK ZAKI	RES
GARETH PERRY	NRR
JS Husky	RES
DONALD DUBE	NRO/DSRA
Yunji Orckum	NRR/DSS
Jim	RES
John Mouning	NRC/RES
Taesuk Hwang	NRR/DRA (foreign assignee)
Sud Basu	RES/DSA

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
561<sup>st</sup> FULL COMMITTEE MEETING

~~April 2-4, 2009~~ March 5-7, 2009

PLEASE PRINT

TODAY'S DATE: March 6, 2008

<u>NAME</u>	<u>NRC ORGANIZATION</u>
Jared Wermiel	NRC/NRR/DE
Stewart Sauter	NRC/NRR/DSS
Jan Jung	NRC/NRO/DE
David Desaniers	NRC/NRO/DCIP
DAVID SKEEN	NRC/NRR/DE
Nancy L. Salgado	NRC/NRR/DERS/IOWB
Allen Howe	NRC/NRR/DORL
Russell Sydnor	NRC/RES/DE
Bill KEMPER	NRC/NRR/DE
Daniel J Sauter	NRC/RES/DE
Michael Jung	NRO/DCIP/COLP
William B Kennedy	NRR/DPRI/PRTA
WADE Richards	NIST
TED QUAY	NRC/NRR/DPR
Kathryn Brock	NRC/NRR/DPRI/PRTA
William Schuster	NRC/NRR/DPR/PRTA
Cindy Montgomery	NRC/NRR/DPR/PRTA
Beth Reed	NRC/NRR/DPR/PRTA
Alexander Adams Jr	NRC/NRR/DPR/PRTA
Duane Hardesty	NRC/NRR/DPR/PRTA
Linh Tran	NRC/NRR/DPR
Charles Boutin	NIST
ANDREA VALENTIN	NRC/RES/DE
Roy MITCHELL	NRC/DE
NITW BATELY	NRC/DE
Bill HORIN	WINSTON + STRAWN



