

**U.S. Environmental Protection Agency
Science Advisory Board
Radiation Advisory Committee (RAC) RadNet Review Panel**

Summary Minutes of Public Conference Call Meeting¹
April 10, 2006

Committee: Radiation Advisory Committee (RAC) RadNet Review Panel of the U.S. Environmental Protection Agency's (EPA's) Science Advisory Board (SAB). (See Roster - Attachment A.)

Date and Time: Monday, April 10, 2006 from 1:00 p.m. to 4:23 p.m. eastern standard time (See Federal Register Notice - Attachment B).

Location: This is a conference call with no location announced. All participants were connected via the conference lines.

Purpose: The purpose of this public conference call meeting is for the RAC's RadNet Review Panel to continue edits on their April 6, 2006 Working Review Draft Report #2 (Attachment F) prepared by the RAC RadNet Review Panelists in response to this advisory activity.² The RAC's RadNet Review Panel's draft report is in direct response to the Environmental Protection Agency's draft document entitled "*Expansion and Upgrade of the RadNet Air Monitoring Network, Vols. 1 & 2 Concept and Plan,*" dated October 2005.

SAB/RAC RadNet Review Panel Attendees: Panel Members Dr. Jill Lipoti, RAC and RadNet Review Panel Chair, Dr. Bruce Boecker, Dr. Antone Brooks, Dr. Gilles Bussod, Dr. Brian Dodd, Dr. Shirley Fry, Dr. William Griffith, Dr. Helen Grogan, Dr. Richard Hornung, Mr. Richard Jaquish, Dr. Jan Johnson, Immediate Past RAC Chair; Dr. Bernd Kahn, Dr. Jonathan Links, Dr. Gary Sandquist, Dr. Richard Vetter, and Ms. Susan Wiltshire (stayed on until 11:20 am) were present. (See Attachment A); Dr. K. Jack Kooyoomjian (Designated Federal Officer) and Dr. Anthony F. Maciorowski, Associate Director of Science - SAB Staff Office, participated.

Agency Staff Attendees: ORIA, Washington, DC: Dr. Mary E. Clark; ORIA/National Air and

¹ NOTE: Please note that these minutes represent comments that are individual statements and opinions and are not necessarily consensus comments at this stage of the process in the review of any given topic. In all cases, the final SAB report to the EPA Administrator represents the consensus on the topic.

² See also the Feb 28, 2005 minutes where the RAC was briefed by the Agency's ORIA staff on the proposed National Monitoring System (NMS) Upgrade to the Environmental Radiation Ambient Monitoring System (ERAMS), now referred to as RadNet. See also the Dec. 1, 2005 minutes for the first public conference call of the RAC's RadNet Review Panel, the Dec. 19-20, 2005 minutes of the first face-to-face meeting of the RAC's RadNet Review Panel, as well as the March 20, 2006 minutes of the public conference call editing session.

Radiation Environmental Laboratory (NAREL) staff, Montgomery, AL: Dr. John Griggs, Robert Lowry, Charles (Chuck) Petko, and Ms. Rhonda Sears; ORIA/Radiation and Indoor Environments National Laboratory (RIENL) staff in Las Vegas: Mr. Brian Moore.

Public Attendees: There were no attendees from the public.

Meeting Summary: The meeting followed the issues and general timing as presented in the meeting Agenda (see Meeting Agenda - Attachment C). Other than open discussions with EPA staff, no comments, either verbal or written were provided to the Panel by the interested public during the course of the conference call meeting.

Welcome and Introductions: Dr. K. Jack Kooyoomjian, Designated Federal Officer (DFO), opened the meeting at approximately 1:03 pm with identification of the participants logging into the call and with opening remarks. He introduced himself as the DFO for the Radiation Advisory Committee's (RAC) RadNet Review Panel, explained the purpose of the call, indicating that this Panel operates under the requirements of the Federal Advisory Committee Act (FACA) and is chartered to conduct business under the SAB Charter. He explained that, consistent with FACA and with EPA policy, the deliberations of the RAC's RadNet Review Panel are conducted in public meetings, for which advance notice is given. He explained that he is present to ensure that the requirements of FACA are met, including the requirements for open meetings, for maintaining records of deliberations of the RAC's RadNet Review Panel, and making available the public summaries of meetings, as well as providing opportunities for public comment.

Dr. Kooyoomjian also commented on the status of this Panel's compliance with Federal ethics and conflict-of-interest laws. The RAC's RadNet Review Panel follows the Committee and Panel Formation Process, as well as determinations made by the SAB staff and others pertaining to confidential financial information protected under the Privacy Act. Each Panelist has complied with all these provisions; there are no conflict-of-interest or appearance issues for any of the Panelists, nor did any individual need to be granted a waiver or be recused. Dr. Kooyoomjian further noted that the Form 3110-48 Financial Disclosure and Ethics Training was completed by all Panelists and is on file at the SAB, that there is no need for disclosure, and that there is no particular matter that may pose a potential conflict of interest. He advised that the Panel should briefly introduce themselves and their interests in relation to the RadNet review topic just to inform the interested parties and the public of their relations and experiences to the issues pertaining to the discussions to take place today.

Dr. Lipoti provided some brief opening remarks at 1:15 pm, welcoming members and participants (Roster, Attachment A), reviewed the meeting agenda (Attachment C), and then asked that the Panelists briefly "log-in" and introduce themselves. After some brief remarks regarding the status of the current draft, big points to be raised in the yet to be written Executive Summary and Letter to the Administrator, Dr. Lipoti asked the members of the ORIA Staff and any public participants who may be on the line to also introduce themselves.

Overview of the Meeting:

A Discussion of the Big Issues or Special Points:

At approximately 1:18 p.m., Dr. Lipoti opened up the meeting to the Panel on any big issues or special points they wish to raise to the Panel. The Panelists observed that there will be some minor editorial suggestions, along with some recommended changes to be made in the way some of the points are emphasized or delivered to the Agency. Some of the edits, for instance were aimed at reducing repetition that may still be in the draft. Citations now include some of recommended elements of good modeling practices directly from the draft REM Guidance Review Panel report (the February 24, 2006 Quality Review Draft).

The Panel discussed moving more explicitly towards “common vision” regarding the goals and objectives for RadNet, such as pertaining to the output of the monitors, or whether the data outputs from the monitors are drivers to the models. The Panel recognized that this perspective permeates the discussion and needs to be expressed clearly and unambiguously. Some Panelists were concerned that the RadNet goals may be giving the public a high set of expectations that might not be met, perhaps due to ignorance or a lack of understanding of the scope of the RadNet responsibility. It therefore becomes a challenge for the Agency, or those other entities that use and integrate the RadNet data into some form, to communicate realistic expectations to the public.

The Panel believes that the current improved draft still has items which may convey conflicting points-of-view and perspectives regarding risk assessment. The Panel agreed that clarification and distinction should be made between the gathering of the data as compared to how the data, along with other sources of information gathered by other entities may be used for risk assessment. The Panel recognized that there may be a responsibility for communicating with states, but that with the raw data, the answer may be “don’t communicate, until you QC the data and place it in the proper reporting framework.”

A discussion followed on the meaning and appropriateness of background readings on a given monitor, as well as what is the meaning if the monitor readings are providing inputs to a network model, and whether this leads to inconsistent or apparently contradictory conclusions. Raw data from individual monitors may not be as significant as the overall system output through a model. The Panel thought that it tried to state this concept in the current draft and that EPA will not be communicating raw data to anyone. The Panel recognized that this message may have gotten “muddied” in the current draft.

A discussion followed on whether the advice provided by the Panel goes beyond RadNet, and whether it should be fed to others. It was recognized that RadNet has several functions, and emergency response is not the only function. Communications will occur both for emergency and non-emergency (routine) events, and it is understood and anticipated that the vast majority of the time, the data being communicated will deal with non-emergency (routine) events. Further, there is some value in the output of individual monitors, and the Panel concluded that the advice

contained in the current draft needs to say this more succinctly and clearly.

The Panel suggested that defining the message for both emergency and non-emergency (routine) events would be helpful, and that EPA's ORIA is the most logical office to communicate what the output from RadNet means. Some of the Panelists recognized that the more complicated models are beyond the scope of the RadNet system, but that the Agency should be thinking about the models and model systems or platforms, as well as the individual monitors.

The DFO to the RAC, Dr. Jack Kooyoomjian is also the DFO to the Regulatory Environmental Modeling (REM) Guidance Review Panel. In that capacity, he offered some thoughts regarding the use of model platforms, and how the Agencies, Departments and Commissions can insert their own particular module(s), or some other preferred modules on the model platforms.

A discussion followed on data from fixed and deployable monitors, and the time to get information from the deployables. A question was raised how the data on ERAMS came in on the Chernobyl incident in 1986. The Agency staff responded that the data came through the normal channels to ORIA within 2 or 3 days, and it was clear that fallout containing Iodine 131 was an issue.

The Panel was polled by the Chair to see if there was any sentiment to change the current language in the draft to use more deployables in advance of the fixed monitors. It was thought that the Panel could make it clearer in the revised draft to use the deployables to "fill in the gaps." The Panel recognized that some of the existing language has that concept inter-laced in the draft text, and the text revisions should be clearer.

One Panelist drew the attention of the Panel to the general budget trends, namely successive cuts each year in nearly all program areas. It was observed that EPA is suffering cuts across many programs, and the RadNet Review Panel needs to err on the side of being conservative. The impression one is left with is that the cuts will continue through perhaps 4 funding cycles, and leave EPA with much less buying power to conduct its mission. The Panel felt some sense of urgency to send a message regarding the utility of the RadNet system. It has been 4 years since 9/11, and the Panel needs to underscore (emphasize) the point that all proposed monitors (or deployables in the interim) need to be acquired. The Panel agreed to edits in the current language to use the deployables to fill in the gaps in knowledge.

Further discussion took place regarding the monitors. In earlier discussions with the Agency, the Panel was left with the impression that some of the fixed monitors may not be deployed until the year 2012. A concern of the Panel was that more of the budget might be consumed in maintenance of the existing monitors, and that perhaps the Panel has not yet gotten to the heart of the issues.

At 2:05 pm, the Panel began the page-by-page edits. The Panel suggested a number of

specific edits and discussed what items should be brought forward in the Letter to the Administrator and the Executive Summary. The Panel stressed the need to clearly highlight the differences between emergency and non-emergency (routine) situations, and the differences or similarities between the fixed versus deployable monitors, and how they can compliment one-another. The Panel suggested edits to reduce redundancy, and to state more clearly what is intended in the recommendations.

The Panelists agreed to their assignments on the re-writes. They agreed mainly to clarifications to language, various succinct language edits to explain what we really mean in certain portions of the draft text, and to italicize all recommendations and statements of distinction.

Clarification discussions took place with the ORIA Staff present during the public conference call regarding the sampling procedures, the particulars of the design capabilities of the deployable units, the compatibility needs of the fixed and deployable detectors, the level of data quality and data interpretations expected from both fixed and deployable detectors, what should be included in the Executive Summary, and in the Letter to the Administrator.

The Panel was leaning toward providing more details regarding the managing of the output of the individual detectors in the re-write to the SAB RAC RadNet Review Panel's draft report. For instance, with some of the group changes, the RAC thought to change the term "assigning" to "estimating" radionuclides, to change all the *'s to sigma, and select text throughout the draft text was identified to be italicized (e.g., p. 19, lines 10, 11, and 12; p.19 lines 41 to 42, etc.).

Public Comment: At 2:30 p.m., Dr. Lipoti asked if there were any members of the public who wished to address the Panel. Nobody from the public was present, and therefore no public comments were offered at this time, nor were any written comments provided.

After several calls for public comments, and hearing none, the public comment period concluded at 2:30 p.m., and the Panel resumed its page-by-page edits commencing on page 22 of the April 6, 2006 public draft (See Attachment F-2).

Continued Panel Discussion:

Some areas were identified for inclusion in the Executive Summary, such as page 23, lines 11-14, and 16-19. Also, some group text changes were recommended, such as to change "We feel" to "We think" or "We believe." One Panelist was emphasizing the difficulties in exact placement of the detectors, and remarked that he would hate to be to be the one to decide exactly where the detectors should be located in New York City. Some discussion occurred on how to aggressively monitor a plume, and the Panel thought that more text discussion on this point was warranted. Another Panelist commented regarding techniques to use population centroids. ...and

yet another Panelist remarked that a detector should go near the Mayor's office.

The Panelists agreed that it might be helpful to have an overall statement regarding representativeness of a macro system, rather than a microsystem. There was a desire to re-write the section on the 2-meter rule. There was also the sense from the Panelists that essentially "the Agency got it right," and that observation needs to be conveyed in the revised text, with deletion of the negative connotations.

The Panelists noted that limited resources make it difficult to weigh in commenting on some issues. There was a sense of the Panel that use of the terms "urgency" was appropriate in using the deployables as a "gap-filling" measure until the fixed monitors could be deployed.

The Panel felt that not all the deployables should be stored in Montgomery, AL, but dispersed strategically throughout the continental US, and there should be operators handy to operate and maintain the monitors in those locations that are ultimately selected. A discussion took place on the use of volunteers, the fact that the Agency has maintained a core volunteer system for some time now in EPA's Regional Offices, but some doubt was expressed about volunteers handling or deploying the deployable monitors. Some Panelists felt that as long as the Agency pre-deployed the deployable monitors, and trained personnel to handle them, there should be no serious complications. Another Panelist commented that the States might have a good deal to say where the deployables are needed, and they should be a part of the solution in final location decisions. Another Panelist thought that the final location decisions for the deployable monitors will likely be made during emergencies by the Federal Radiological Monitoring and Assessment Center (FRMAC).

The Panel recommended a number of edits to reduce redundancy, and to include integration activities. Other cleanup edits were recommended, and various Panelists volunteered to take leads on specific sections. The Panelists liked the fact that "here are the steps" on page 26 & 27, and the thought was expressed that some of this should go into the Executive Summary.

Feedback from Agency Staff: At 3:18 p.m., Dr. Lipoti asked for feedback from the Agency Staff. The question was asked why the Agency chose a population-base criteria for location of the monitors. Dr. John Griggs clarified that there are 2 major geographic criteria for coverage, namely 1) Population Area, and 2) Geographic Coverage. The approach was to start with population area and redistribute, based on advice from various parties ("clients," or stakeholders), such as the Centers for Disease Control (CDC) in Atlanta, GA. It was noted by Agency staff that decision-makers want high quality data in a reasonably quantified manner.

Dr. Mary E. Clark, Assistant Director for Science of ORIA, noted that ORIA took the draft plan to the Conference of Radiation Control Program Directors (CRCPD) Task Force. She advised the Panel that she will provide answers from ORIA to the three questions. Dr. Clark wondered if closure could be reached sooner than the scheduled June 12th conference call.

Dr. Lipoti advised that she will be focusing to prepare for the next public conference call for Monday, June 12 from 1 to 4 pm EST. She is concerned regarding the timing, the process for closure, and whether the Panel needs more time, and concluded that it would be unrealistic to provide the revised report any faster than it is currently planned.

The Panel continued with the page-by-page edits. In discussions on the 2-meter rule, Dr. Bussod volunteered to re-write this text. The Panel suggested to italicize the sentence in reference to deploying the portable air monitors on page 30 beginning on line 43.

A discussion followed on the commitment by the Agency to at least 60 monitors, and that they are largely tilted (28-29 of them) at existing major population centers with existing infrastructure and to areas where there is an adequate supply of monitoring volunteers.

It was commented that the term, “region of interest” (ROI) is not in the Glossary, and should be spelled out.

The question was raised if EPA has any model regarding handling of very large data sets. The Agency ORIA Staff responded that sister agencies have real-time monitors. The Agency (EPA) is undertaking a large effort on developing software to automate the large volume of data. EPA has accepted the fact that the current state-of-the-art in detection isn't quite where it has to be. The Agency will learn to be conservative for false detects to therefore trigger a human review.

On page 38, line 30 it was suggested by a Panelist to clarify whose central data base is being referenced. This was recognized by the Panel Chair, Dr. Lipoti as a CQ 3b item.

On page 39, lines 39-43, it was suggested by a Panelist that one expert to 5 people was best, rather than, for instance one expert to 20 volunteers. A brief discussion took place in reference to page 39, lines 5-20 regarding the time it takes to get information from NAREL. It was thought that the existing italicized section, such as page 40, lines 26-41 is important. It was further thought that page 41, lines 42-43 regarding EPA's role also needs to recognize the roles of other staff than EPA personnel, such as those who are volunteers.

A discussion took place on the use of traditional or SI units. The suggestion was made to list the traditional units with SI units in parentheses. It was remarked that the output of monitors should be in curies or Roentgens, depending on the detector. A discussion followed on detection levels compared to background.

It was recognized that the EPA will continue to make routine RadNet data available to the public in a routine fashion. It was recognized that some edits might need to be made to better clarify the communicating risk topic in Section 5.4.6 of the Panel's current draft so that the background discussion is in proper context with regard to ORIA/NAREL and FRMAC interaction. It was thought that there should be clarifying language that stresses that EPA/ORIA/NAREL are the experts on RadNet data and that they support Agency engagement

with the FRMAC. Perhaps placing the data in terms of background levels might be the best way of presenting information. It was agreed by the Panel that Section 5.4.6 needs to be re-written to better clarify how ORIA provides information to the FRMAC and the roles of FRMAC and other people that are communicating with the public. It was thought that engagement in mock exercises might be helpful.

Dr. Lipoti volunteered to revise page 43, Section 5.4.3 regarding monitoring data to be conveyed to the public coming from the FRMAC. The Panel also thought it would be helpful to comment on how social scientists and others specializing in risk communication, decision-science and decision-making could be helpful and that this information should also be brought up and highlighted into the front end of the Panel's draft document.

A brief discussion took place on the acronyms list, as well as logistics of the edits to the Panel's current draft report. The Panel completed their edits through the entire text by extending discussion and conference time up to 4:23 p.m. At 4:18 pm, Dr. Lipoti provided a brief summary.

It was understood by all the Panelists present that their edits should be submitted to Dr. Lipoti, with a cc to Dr. Kooyoomjian no later than Close-of-Business Monday, April 24th. Dr. Lipoti thanked all the participants and indicated that she will merge the edits for the next public conference call to take place on Monday, June 12th from 1:00 pm to 4:00 pm EST.

There being no additional business to be discussed, Dr. Lipoti adjourned the meeting at 4:23 pm on Monday, April 10, 2006.

Respectfully Submitted:

Certified as True:

/S/
K. Jack Kooyoomjian, Ph.D.
Designated Federal Official
Radiation Advisory Committee (RAC)
RadNet Review Panel

/S/
Dr. Jill Lipoti, Chair
Radiation Advisory Committee (RAC)
RadNet Review Panel

List of Attachments

The following meeting materials are available on the SAB Web site, <http://www.epa.gov/sab>, at the [April 10, 2006 Radiation Advisory Committee \(RAC\) RadNet Review Panel Meeting](#) page:

<u>Attachment</u>	<u>Description</u>
A	Radiation Advisory Committee (RAC) RadNet Review Panel Roster dated November 22, 2005
B	<i>Federal Register</i> Notice: March 1, 2006, Vol. 71, No. 40, pages 10501-10502
C	Meeting Agenda dated April 6, 2006
F	RadNet Review Panel's April 6, 2006 Working review Draft report #2

The following meeting materials are available in hardcopy from the SAB Staff Office, U.S. Environmental Protection Agency (MC-1400R), 1200 Pennsylvania Ave, NW Washington, DC 20460:

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| G | ORIA Review Document entitled " <i>Expansion and Upgrade of the RadNet Air Monitoring Network, Volume 1 & 2, Concept and Plan,</i> " Prepared for the Radiation Advisory Committee RadNet Review Panel, Science Advisory Board, U.S. Environmental Protection Agency, Prepared by the office of Radiation and Indoor Air, U.S. Environmental Protection Agency |
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