

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

Summary Minutes of Public Conference Call Meeting¹
December 1, 2005

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: Thursday, December 1, 2005 from 1:00 p.m. to 3:00 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 to provide background information for the RAC RadNet Review Panelists on the issues in preparation for the advisory activity. The Panelists are to (a) discuss the charge, review and background materials provided to the Panel; (b) to discuss specific charge assignments for the Panelists; and (c) advise the Office of Radiation and Indoor Air (ORIA) staff of any specific points that may need clarification for the December 19 & 20, 2005 meeting. ² (See Meeting Agenda - Attachment C.)

SAB/RAC RadNet review Panel Attendees: Panel Members Dr. Jill Lipoti, RAC and RadNet Review Panel Chair, Dr. Bruce Becker, Dr. Antone Brooks, Dr. Gilles Bussod, Dr. Shirley Fry, Dr. William Griffith, Dr. Helen Grogan (on conf call for last 35 minutes), 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 (joined conf call around 2:00 pm), and Ms. Susan Wiltshire were present. (See Attachment A); Dr. K. Jack Kooyoomjian (Designated Federal Official) and Dr. Anthony F. Maciorowski, Associate Director for Science, - SAB Staff Office, participated. Dr. Brian Dodd was unable to participate.

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.

Agency Staff Attendees: ORIA, Washington, DC: Dr. Mary E. Clark, Ms. Helen Burnett, Ms. Sara DeCair, Mr. Barnes Johnson, Mr. Adam Klinger; ORIA/National Air and Radiation Environmental Laboratory (NAREL) staff, Montgomery, AL: Mr. Ronald (Ron) Fraass, Dr. John Griggs, Mr. Robert Lowry, Dr. Keith McCroan, Dr. Charles (Chuck) Petko, Cdr. Scott Telofski, and Ms. Mary Wisdom; ORIA/Radiation and Indoor Environments National Laboratory (RIENL) staff in Las Vegas: Mr. Brian Moore.

Public Attendees: Mr. Robert Snyder, New York State Department of Health, Bureau of Environmental Radiation Protection; and Ms. Michelle Morris of the Navajo Nation's EPA.

Meeting Summary: The meeting followed the issues and general timing as presented in the meeting Agenda (see Meeting Agenda - Attachment C). No written comments were submitted to the Committee for the meeting, but public verbal comments were offered during the course of the conference call meeting. All public commenters were offered the opportunity to submit written comments following the meeting, but none were received.

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 interest 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. He also advised that the biosketches of each Panelist are posted on the SAB website.

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 introduce themselves, starting with herself as Chair of the RAC's RadNet Review Panel. Dr. Lipoti then asked the members of the ORIA Staff and the public participants to also introduce themselves.

Overview of the Meeting:

After the introductory remarks and statements of interest by the Panelists, and introductions of the Agency staff and other participants, at 1:25 pm Mr. Barnes Johnson, Deputy Director of ORIA gave some brief remarks and provided the Panel with an overview of EPA's request to the SAB. He stressed the Agency's appreciation of advice conveyed on a number of technical and scientific issues, and recognized also the time and dedication of the SAB's RAC in the many past activities, and the work that is ahead of the RAC's RadNet Review Panel for this upcoming review. He noted that he will not be able to be at the review meeting on December 19 and 20 in Montgomery, AL, but that ORIA's Director, Ms. Elizabeth Cotsworth would be there. Dr. Lipoti noted that the SAB's RAC appreciates the hospitality of the Laboratory staff, and that the Panel is looking forward to the visit and the review on site where many of the staff implementing RadNet reside.

Dr. Mary E. Clark, Assistant Director for Science of ORIA, introduced herself. She directed the Panel to the NAREL web site (www.epa.gov/narel), and noted that the staff at the NAREL facility in Montgomery, AL, plan to have the monitors on display for the Panel to look at, and that arrangements would be made to tour the facility. She also noted that staff from the Radiation and Indoor Environments National Laboratory (RIENL) in Las Vegas, NV and the ORIA Headquarters (HQ) staff in Washington, DC, would also be present to engage in the review and provide support as needed.

Dr. Lipoti began the Panel discussion of the charge request with Charge Question (CQ) #1, which is "*Are the proposed upgrades and expansion of the RadNet air monitoring network reasonable in meeting the air network's objectives?*" (See the back of Attachment C or more details in Attachment D for the charge questions).

Dr. John Griggs of the ORIA/NAREL Staff remarked that the overall tenor of CQ #1 is intended to be a very broad question to allow the Panel to include comments on a variety of perspectives. He noted that there are practical budget limitations, as well as technical, timing and personnel limitations. He noted, for instance, as an extreme example, that the Agency could have a monitoring system on every cell tower, but that would be prohibitively expensive.

The Panel interpreted that the second charge question (CQ #2), which is "*Is the overall approach for siting monitors appropriate and reasonable given the upgraded and expanded systems objectives,*" (see also CQ 2a through 2d for details), refers to location and siting of monitors, whereas CQ #1 refers to detection of radionuclides. The ORIA Staff also observed

that 3d (referring to quality assurance and control procedures on the selected measurements) touches on measurement and detection issues for radionuclides. The question seemed to be interpreted as ... *"Are the systems sensitive enough? Can you distinguish one radionuclide from another?"*

The ORIA Staff acknowledged that they had to go forward and make a decision to purchase the detectors prior to the SAB review. The Panel questioned whether the currently stated objectives are open to discussion, whether the list of radionuclides and targets could also be discussed, in addition to whether the system meets the mission (stated objectives). The Panel also noted additional issues pertaining to sensitivity and detection, whether the fixed and mobile detectors provide a decrease in overall uncertainty, and whether there is a model (or models) available to measure that decrease in uncertainty. A discussion followed on a variety of issues, such as whether the Agency had a 0 to 4-day strategy, how to get a 24-hour mobile deployment to help understand early behavior of a problem in the far-field and long-term, how the Federal Radiological Monitoring and Assessment Center (FRMAC) would come into play, and how deployment of these units would be conducted. The Agency staff indicated that they would be able to address these issues at the face-to-face meeting. The Panelists indicated that they were interested in being briefed during the presentation at the December 19 & 20, 2005 meeting on how various persons interact at the federal, state and local levels, and to be provided with some sense of the organizational relationships.

The ORIA Staff indicated that they have spent a lot of time talking with their state and local counterparts and other organizations and stakeholders pertaining to radiological emergencies. The Panel requested that they just need a presentation on context of how the current system works to help them better respond to the charge questions pertaining to emergency response. Dr. Links volunteered to explain how Baltimore's emergency response plan works, if this is needed.

The Panel understood that the main function of the RadNet system is to get a sufficiently sensitive measurement. They asked if there are enough stations proposed to be scattered around the country to accomplish this. The Panel discussed the likely locations for the monitors, noting some areas, such as Hanford where proposed monitors may be duplicative, if there already is good coverage at this site (there may therefore be less of a need to locate additional monitors in this location, if the monitors are compatible and the information is shared by the parties involved).

The Panel observed that interpreting data is one challenge, but that collecting and sharing data is another challenge, and data compatibility also needs to be looked at by the Panel. They observed that the response to hurricane Katrina pointed out how fragile communications are. There was a question on the role of Department of Homeland Security (DHS) as the prime agency on defense of the nation pertaining to radiological threats and other aspects. A discussion followed on a wide variety of related topics, including the multiple objectives in the National Response Plan (NRP) for nationally significant events, the Radiological Annex to the NRP (the old Federal Radiological Emergency Response Plan (FRERP)), the system update to

the NRP/FRERP to include terrorist incidents. A brief discussion followed on local and federal interactions, biological and chemical monitoring systems and tie-ins to the DHS. The Panel was questioning whether these are coupled systems, whether they are or should be discussed further, and whether the Panel needs to obtain some background information on the Biowatch System. The ORIA staff acknowledged that there are other systems for radiological detection, that they are primarily focused on interdiction objectives, and that certain aspects of Biowatch are “official use only.” To discuss these with the Panel, the Agency staff would likely have to get permission from DHS staff. It was acknowledged that Biowatch has very different system objectives than RadNet.

The Panel was concerned to know if there is an effort to integrate these systems. The Panel was also cognizant that these systems should be cost-effective and not duplicative. Dr. Anthony Maciorowski, Associate Director for Science acknowledged that the SAB has a separate Homeland Security Advisory Committee, and that some of the meetings are public and some are not. A discussion followed regarding concerns for Radiological Dispersion Devices (RDD’s), foreign and international radiological incidents, etc. and how these events get at the issue of source terms. It was suggested by the Panel that the Agency staff may wish to talk with DHS about these questions being raised by the Panel.

The Panel discussed the charge questions and volunteered to handle various components of the charge questions. Dr. Lipoti thought it might be helpful to make preliminary assignments on the charge questions, but stressed that there would be ample opportunity to allow everyone to switch once we get to the Montgomery NAREL, since there may be more appropriate assignments once we get together for the first time and discuss the details of our response to the charge questions in our face-to-face meeting. Initial discussions yielded the following preliminary charge assignments:

CQ #1: Jill Lipoti volunteered to be the overall editor, and suggested that everyone should contribute to CQ #1 (Susan Wiltshire volunteered for CQ #1; other contributors appear to be Bruce Boecker, Shirley Fry, Rick Hornung, Gary Sandquist and Dick Vetter);

CQ #2: Gilles Bussod & Jan Johnson volunteered to be Co-Leads for all of CQ #2. (Jonathan Links and Bernd Kahn also volunteered to contribute to CQ #2. It was also thought that Helen Grogan would contribute to CQ #2);

CQ #3: Tony Brooks volunteered for CQ #3c, and observed that in CQ #3b on modes of data transmission, there are 3-orders of magnitude in data surveys (he will write something on this); Brian Dodd (CQ #3b) and Dick Jaquish volunteered for CQ #3; Bill Griffith volunteered to address communications systems and data systems in CQ #3; Susan Wiltshire volunteered for CQ #1 & especially CQ #3.

Public Comment: At 12:18 pm, Dr. Lipoti asked if there were any members of the public who wished to address the Panel.

Mr. Robert Snyder of New York State Department of Health, Bureau of Environmental Radiation Protection made general comments about New York State's local response plan, and how the state and local people respond under the FRMAC.

Ms. Michelle Morris of the Navajo Nation's EPA commented on the desirability of locating monitoring stations within or around the perimeter of the Navajo Nation's reservation land in New Mexico, Arizona and a portion of Utah. She advised that the Navajo Nation has recently received delegation from the U.S. EPA & would like to enquire about the possibility to have monitors on reservation land or near the reservation land. She discussed the Churchhoff, NM spill in 1999 where there was a measurement of high radionuclide levels on the reservation.

The ORIA Staff indicated that they would be happy to share plans with Ms. Morris and the Navajo Nation, indicating a desire to be able to measure radiation deposition and radiation measurements to the Navajo Nation. The Panel observed that there are 6 blue dots in that general area, and that CQ #2 should address this interest by groups as to where to move these blue dots. The Panel also recognized that a discussion on where to move the blue dots would be helpful, especially if the discussion focuses of where there this might result in a reduction in uncertainty. The Panel did enquire if the Agency staff had thought about a formal analysis focusing on monitor locations as an exercise to reduce uncertainties. The Panel also observed that the blue dot proposed in Farmington, NM is right next to the Navajo Nation.

The public comment period concluded at 12:29 pm.

Continued Panel Discussion:

The Panel continued discussions on the charge questions, observing that perhaps the objectives of the RadNet system are less clear to the Panelists than they originally thought. A suggestion was made that it might be better to examine the RadNet system and its objectives in light of early, intermediate, and late phases of events. It is clear that the current and proposed enhancements to the system should be to inform the public officials, yet it does not actually serve as an early warning system. It was thought to be very helpful if the Agency's ORIA staff could better articulate their objectives for RadNet during the face-to-face meeting. Other Panelists observed that they were struck with the fact that the draft document was so clearly written until they got to this portion of the document.

The ORIA staff noted that many of the objectives are tempered and defined by the time frame required, the resources available, as well as activities that mesh with other coordinating groups who may be outside the Agency. The ORIA staff acknowledged that it would be very helpful to have further discussion where the objectives may not be clear to the Panel. The Panel did want to make a distinction that once they clearly understand the objectives, another question

that should be addressed is if the Panel agrees with the objectives. It was thought that it would be a productive exercise to have one Panel member, on behalf of the Panel, to further discuss and seek clarification regarding the objectives with the ORIA Staff. Dr. Jonathan Links volunteered to represent the Panel in such a follow-up discussion, whenever that its scheduled. The DFO, Dr. Kooyoomjian would be present during those discussions (POSTSCRIPT: The discussion took place on Wednesday, December 7 from 10:30 am to 12:00 noon EST. A focus of the discussion was to clarify objectives. Discussants included Drs. Clark, Griggs, Kooyoomjian, and Links. It was agreed that the ORIA Staff would adjust their presentation materials to clarify issues relating to the objectives and any other clarifications that may be needed to enable the Panel to have a focused review during the face-to-face meeting of December 19 & 20, 2005 at the NAREL facility in Montgomery, AL).

During the December 1, 2005 public conference call, further suggestions from the Panel included a request for information from the Agency on the following items:

- 1) monitoring device sensitivity and manufacturer specifications;
- 2) a brief presentation or demonstration on models that process information for decision-making;
- 3) data generated for models versus the modeling activity;
- 4) background on use of models (focusing on such things as what organization and who does the modeling) in emergency response activities and other systems, such as the Federal Radiological Monitoring and Assessment Center (FRMAC), standard National Atmospheric Release Advisory Center NARAC models, the Inter-Agency Modeling and Atmospheric Assessment Center (IMAAC) in Livermore, CA, etc.;
- 5) a discussion on work flow that is needed to optimize results;
- 6) the models that might be available if the Agency does not have data in certain areas, etc.; how the Agency utilizes feedback loops;
- 7) a presentation of a map or scenario showing detection within hours of an event(s), the identification of possible hot spots, etc.

The Panel welcomed the opportunity to meet at the NAREL in Montgomery, AL on December 19, and 20, 2005 where most of the ORIA/NAREL staff are located, to examine the facilities, meet with staff, view the air samplers, and engage with the Agency staff on the RadNet topic.

There being no additional business to be discussed, Dr. Lipoti adjourned the meeting at 3:04 pm on December 1, 2005.

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 [December 1, 2005 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: November 16, 2005, Vol. 70, No. 220, pages 69550- 69551
C	Meeting Agenda dated November 22, 2005
D	The Charge to the Science Advisory Board's Radiation Advisory Committee (RAC) RadNet Review Panel (dated November 22, 2005)
E	ORIA Review Document entitled "Expansion and Upgrade of the RadNet Air Monitoring Network, Volume 1 & 2, Concept and Plan," 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