7926 Jones Branch Drive
Suite 620
McLean, VA 22102
Tel: 703 848 8842 Ext: 124
Fax: 703 848 9001
www.endyna.com[attachment "PAGS Comments 8Oct2012 EnDyna.xlsx" deleted by Sara DeCair/DC/USEPA/US]

PAGS Comments 9Oct2012 EnDyna.xlsx

Jess and Sara

Here is an electronic copy of the FAQ document.

Talk to you at 2

Bill

FAQs All November 2011 with revisions draft 2.doc

FAQs All November 2011 with revisions draft 2.doc

William D. Sacks
U.S. Environmental Protection Agency
Radiation Protection Division
202.343.9707

Jessica Wieder---06/12/2012 09:26:50 AM---I am working at home today. So for our meeting at 2, go to room 533 (It is a little room in a back c

From: Jessica Wieder/DC/USEPA/US
To: William Sacks/DC/USEPA/US@EPA, Sheena Martenies/DC/USEPA/US@EPA
Cc: Sara DeCair/DC/USEPA/US@EPA
Date: 06/12/2012 09:26 AM
Subject: PAGs FAQ discussion

I am working at home today. So for our meeting at 2, go to room 533 (It is a little room in a back corner) and use this call in number **Ex. 6 - Personal Privacy**

Bill -Please send me and Sara electronic copies of the FAQs. Thank you.

Jess

Jessica Wieder
U.S. Environmental Protection Agency
Radiation Protection Division
Center for Radiation Information
w: (202) 343-9201
bb: (202) 420-9353

Submit Time: 10/25/2012 15:27:48
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: The whole kit and kaboodle

I do like a meaningful subject line.....

Key Issues on PAGs for chat with OMB 10-25-2012 v2.docx Key Issues on PAGs for chat with OMB 10-25-2012 v2.docx

PAG Manual with OMB and EPA cmts incorp 10-25-2012 320 pm.docx PAG Manual with OMB and EPA cmts incorp 10-25-2012 320 pm.docx

PAGS Comment Responses Oct 25 2012.xlsx PAGS Comment Responses Oct 25 2012.xlsx

And the FR, which we haven't talked much about -- water language, FRMAC Manual links, and one change per a suggestion that comments can be sent to FDA anytime on the Food PAGs. Ha! Ha! That's now how they see it.

PAGs FR with OMB cmts incorp 10-25-2012.docx PAGs FR with OMB cmts incorp 10-25-2012.docx

Subject: with line numbers
To: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA
Cc:
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 10/2/2012 12:37:31

See if this is useful; let me know what versions we will be working from going forward. Thx

2012 PAG Manual 7-20-2012_Summary Comments 10_01_2012_with-line#s.docx

line#s.docx 2012 PAG Manual 7-20-2012_Summary Comments 10_01_ 2012_with-line#s.docx**2012 PAG Manual 7-20-2012_Redline Comments from 10_1_2012_with-**

line#s.docx 2012 PAG Manual 7-20-2012_Redline Comments from 10_1_2012_with-line#s.docx

~~~~~~~~~~~~~

Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~

Submit Time: 11/26/2012 13:27:00
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: Ex. 6 - Personal Privacy
Cc:
Subject: Fw: FYI - NTI Article

Ah good, we were worried this guy would stop writing about us altogether. He switched publications but here we go again, complaining about the PAGs!!

----- Forwarded by Sara DeCair/DC/USEPA/US on 11/26/2012 01:26 PM -----

From: Lee Veal/DC/USEPA/US
To: Alan Perrin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA
Date: 11/26/2012 01:12 PM
Subject: FYI - NTI Article

FYI

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322
----- Forwarded by Lee Veal/DC/USEPA/US on 11/26/2012 01:12 PM -----

From: "Veal, Kevin" <Kevin.Veal@nnsa.doe.gov>
To: Lee Veal/DC/USEPA/US@EPA
Date: 11/26/2012 12:51 PM
Subject:

---

http://www.nti.org/gsn/article/federal-panel-dirty-bomb-cleanup-need-not-follow-us-cancer-rules/

Federal Panel: Dirty Bomb Cleanup Need Not Follow U.S. Cancer Rules

Nov. 26, 2012

By Douglas P. Guarino

Global Security Newswire

WASHINGTON – A new federally funded report is likely to recommend that contamination from a so-called "dirty bomb" should not have to be cleaned up as thoroughly as hundreds of existing radioactive sites throughout the United States, even though official estimates suggest this change would dramatically increase the risk of cancer in people living in the affected area.

In the event of such an attack, a new, more flexible approach to cleanup will be needed in order to deal with economic realities, the report, sponsored by the U.S. Homeland Security Department and expected sometime next year, will urge. Detractors, however, say the government's conventional approach already allows for such flexibility – without the expense to public health.

Since the 1980s, cleanup of the nation's most heavily contaminated properties -- including former nuclear weapons manufacturing and testing facilities owned by the Energy Department – has been governed by the U.S. Environmental Protection Agency's Superfund program. Pursuant to Superfund guidelines, remediation is designed so that 1 out of 10,000 people exposed to a site for 30 years would be expected to develop cancer in a worst-case scenario. One in 1 million people would be expected to develop cancer in the best possible situation.

The head of the panel that is writing the new report says he and his colleagues do not believe these longstanding guidelines need to be followed in the event of an attack involving a dirty bomb or other illicit nuclear device, however.

Instead, they will suggest that a radiation dose to the human body of between 100 and 2,000 millirems per year be the target that officials keep in mind when deciding on cleanup actions, said S.Y. Chen, a senior environmental engineer at Argonne National Laboratory in Illinois.

Roughly 1 in 23 people would be expected to develop cancer from receiving a 2,000 millirem dose of radiation annually for 30 years, based on estimates from the International Commission on Radiological Protection, a private, nongovernmental organization whose work Chen cites as the basis for his recommendations. Approximately 1 in 466 people would be expected to develop cancer from an annual dose of 100 millirems over the same time period, according to calculations *Global Security Newswire* conducted using ICRP projections.

"It is just ethically indefensible," Daniel Hirsch, a nuclear policy lecturer at the University of California-Santa Cruz told *GSN*. "Anyone proposing such a thing should go to jail."

Scope

Chen counters that EPA guidelines are not applicable to terrorist situations by arguing that the

Superfund program was developed to deal with contamination that is more limited in scope. The experience of the Japanese in the wake of last year's earthquake- and tsunami-induced nuclear power plant meltdowns proves the need to consider economic factors in carrying out a massive cleanup, he said.

"Bring Superfund to Japan and see how it's going to work. It will fail miserably," Chen said in a recent interview with *GSN*. In the event of a dirty bomb or nuclear attack, "it won't just be a Superfund-like community where several acres are contaminated," he said. "Everywhere everybody will get disrupted big time. You have to worry about your jobs, you worry about business, you worry about your livelihood on a daily basis. So all of the sudden it's no longer a contamination issue, it's a bigger society issue that everyone has to cope with."

Many Superfund sites are actually larger than what federal officials and other experts typically describe when they talk about how much land they would expect a dirty bomb to contaminate, however. An existing DHS guide that the forthcoming report is meant to supplement describes the area likely affected by a dirty bomb as ranging between "a single building or city block" to "conceivably several square miles.

"However, most experts agree that the likelihood of impacting a very large area is low," the DHS guide says.

In 2002 testimony to the Senate Foreign Relations Committee, Federation of American Scientists President Henry Kelley presented three hypothetical dirty bomb scenarios. The first two, which involved terrorists using TNT to explode a medical gauge containing radioactive cesium and a source of radioactive americium used in oil well surveying, contaminated areas slightly larger than one square mile. In the third, which Kelley said was less likely, a piece of radioactive cobalt from a food irradiation plant contaminated an area of about 386 square miles.

By comparison, the former nuclear weapons production facility at Hanford, Wash., that the Energy Department is cleaning up pursuant to Superfund is 586 square miles. The Savannah River Site in South Carolina, also undergoing Superfund cleaning, is 310 square miles.

"It's called Superfund for a reason – these are big sites with big problems, the nation's most contaminated sites," Hirsch said.

The existing DHS guide and the anticipated supplement confuse the issue by addressing dirty bombs together with improvised nuclear devices, the latter of which would be expected to cause a far greater degree of devastation, Hirsch contends.

“If you have an [improvised nuclear device] you’re going to be missing a portion of your city. If you have a dirty bomb it’s a tiny chemical explosion like a pipe bomb and you’ve got radiation that’s been released over a few blocks,” he said.

Flexibility

Chen argues that using the 100 to 2,000 millirem per year dose range as the target for remediation goals will give stakeholders the flexibility to prioritize the use of limited cleanup resources in the face of widespread contamination. While a schoolyard might be cleaned to a more stringent level, higher amounts of radiation could be tolerated elsewhere, he said.

“You only have so much technology, manpower, money and supply,” Chen said. Prioritizing cleanup projects “will take a lot of effort and stakeholder involvement. It’s not going to be a government prescribed approach like we had before.”

The Superfund remedy selection process does involve stakeholder input, however. Cleanup plans are subject to public review and comment before they are finalized and Superfund rules dictate that cost-effectiveness, community acceptance and state government approval be among the criteria considered when deciding on how best to deal with contamination.

Superfund goals can also be adjusted depending on the expected use for a particular piece of land, in part because the amount of hours per week a person would be expected to spend at a location varies depending on its purpose. “Something you know is going to be used for agricultural [or residential] uses you clean up to a stricter standard than some place that’s only going to be industrial,” Hirsch said. “All that flexibility is in Superfund.”

Carl Spreng, a project manager at the Colorado Public Health and the Environment Department, noted that under Superfund, the number of years regulators assume a person will be exposed to a site can also be adjusted to account for site specific circumstances, and cleanup goals adjusted accordingly. While 30 years is considered a conservative rule of thumb for how long Americans are likely to live in a particular location, at some sites people are expected to spend less time, and at others more, he said.

Spreng said that when DHS officials proposed in past years to set an acceptable post-dirty bomb dose range similar to what Chen is now suggesting, state officials throughout the country “were frankly shocked.”

The dose range the new report is expected to suggest is “way outside the numbers that we would

consider safe and have argued for many years," Spreng said. "We'd still have significant concerns with numbers like those."

Origins

Chen's panel is writing the report for the privately run National Council on Radiation Protection and Measurements with funds from the U.S. Homeland Security Department. The report is intended to expand on a controversial document Homeland Security published in 2008.

Commonly referred to as a "protective action guide" or "planning guidance," the document was meant to advise responders at the federal, state and local levels in the event of a radiological attack.

Along with scenarios involving a dirty bomb -- a crude weapon terrorists would use to disperse radioactive material over a relatively small area through the detonation of conventional explosives – the DHS guide and the ensuing NCRP report are also intended to advise the response to improvised nuclear devices that could produce levels of destruction closer to that of a traditional atomic bomb.

In the initial aftermath of such attacks, the DHS guide recommends largely following previously established EPA guidelines for nuclear emergencies. During this time period – the days and weeks immediately following an incident -- responders would have to make quick decisions regarding sheltering, evacuation and contaminated food and water supplies.

When it comes to long-term efforts to clean up and reclaim areas affected by the radiological blast, however, the DHS guide parts ways with standard U.S. practice. Rather than follow Superfund protocol, it recommends interested stakeholders follow a process called "optimization" when making decisions about how contaminated areas should be cleaned up or otherwise managed. Optimization involves weighing factors such as human health and public welfare against cost and economic impact, the guide says.

However, the DHS guide provides little explanation as to how this optimization approach would actually work in the real world. Unlike Superfund, the system the DHS guide describes includes no numerical guidelines – such as a specific risk or dose range that a site should comply with when cleanup is complete.

To provide more detail on how optimization would work, Homeland Security in 2010 began providing funds for the NCRP panel to write the forthcoming report on remediation. In addition

to Chen, the panel consists of experts on a wide range of topics, including health physics, economics and public communication.

The optimization approach was already attracting strong opposition from critics both in and outside of government. A coalition of more than 60 public health and nuclear watchdog groups signed a letter condemning the Bush administration's 2008 attempt to incorporate the DHS approach into an EPA guide on responding to a broader array of radiological incidents. The Obama administration ultimately delayed execution of the Bush plan.

Internal e-mail messages the agency later released under the Freedom of Information Act showed that some EPA staff and state government officials had also opposed the optimization concept and its potential inclusion in the EPA document. A revised version is pending review at the White House Management and Budget Office.

Risk

At the time, critics feared the lack of numerical cleanup guidelines in the DHS optimization guide would lead to decisions that the public can be exposed to levels of radiological contamination far above what EPA rules normally allow.

Indeed, the high end of the dose range that Chen is now suggesting – 2,000 millirems per year, a 1 in 23 cancer risk from 30 years of exposure to a remediated dirty bomb attack site -- is more than 400 times less stringent than the worst-case 1-in-10,000 cancer risk the government would normally accept. It is 43,000 times less stringent than Superfund's 1-in-1 million ideal.

National Academy of Sciences projections the Environmental Protection Agency adopted last year suggest an even greater cancer risk. A 2,000 millirem per year dose for 30 years would cause 1 in 15 people to develop cancer, using NAS figures.

Hirsch, who as president of the watchdog group Committee to Bridge the Gap led the opposition to including optimization in the EPA guide in 2008, likens receiving the high end of Chen's dose range for 30 years to getting 10,000 chest X-rays, "with no medical benefit."

Arjun Makhijani, president and senior engineer at the Institute for Energy and Environmental Research, said the cancer risk could decline somewhat over the years due to radioactive decay and "various types of erosion." Even with this caveat, however, the risk at the upper end of the proposed dose range is still high, he said.

"Plus risks to children are higher than the average and for some radionuclides much higher," Makhijani added.

David Brenner, director of the Center for Radiological Research at Columbia University, noted, however, that the ICRP recommendations Chen is looking to adopt urge selecting cleanup targets from the lower end of the 100 to 2,000 millirem per year dose range. Even if exposures have already been reduced below the range, cleanup can continue "as long as there is room to reduce exposures further in conformity with the optimization process," the ICRP recommendations say.

"I think their picture is that one should get down below [100 millirems per year] as quickly as is reasonably achievable," Brenner added. "The scenario of [2,000 millirems per year] every year for 30 years … seems quite inconsistent with that picture."

Even at the low end, however, Chen's suggested dose of 100 millirems per year – a 1 in 466 risk over 30 years -- carries a cancer risk 20 times greater than the worst-case scenario for remediated Superfund sites. It is 2,000 times less stringent than the ideal.

In Colorado, state regulators consider the lower end of Chen's proposed range to be the upper end of what they would permit, according to Spreng, the state official. The state uses a 25 millirem per year dose as a target for residential cleanups, with 100 millirems per year considered the upper limit.

Chen argued the Superfund approach to cleanup is ill-equipped to deal with some of the long range problems that could follow a radiological attack, such as the problem of wildlife wandering into contaminated areas and then later entering the human food supply. He argued that the flexibility of the optimization approach makes it more adept to dealing with such continuous, long term issues than Superfund.

"It's different for Superfund because with Superfund you bring the bulldozer, you take away the contamination, you wash your hands and walk away and say I'm done," Chen said. "You will not get done with this."

At the Savannah River Site, however, the Energy Department has run a monitored deer and hog hunting program since 1965. Animal remains are scanned for cesium contamination before a hunter is allowed to take them off the property.

"Monitoring road kill is a standard approach at [Superfund] sites," added Hirsch. In addition, EPA officials review completed Superfund cleanups – which often take years or even decades to

finish – every five years to ensure that they are still effectively protecting human health.

Precedent

A major concern among watchdog groups is that the DHS guide, combined with the forthcoming NCRP report, will establish a precedent that will relax remediation standards not only for areas contaminated by dirty bombs, but also for the more routine cleanup of nuclear weapons facilities owned by the Energy Department and other sites with radioactive contamination.

The draft EPA guide put on hold by the Obama administration would have extended application of the optimization approach beyond just dirty bomb and improvised nuclear device attacks, watchdog groups complained. Under the document, optimization would have been the preferred approach to cleaning up after a wide range of incidents, including accidents and attacks at nuclear power plants and industrial facilities that use radioactive material.

The DHS and NCRP documents are the "camel's nose under the tent," according to Hirsch. Once federal reports on dirty bombs adopt the dose range Chen suggests, it becomes easier for government agencies and private parties responsible for decontaminating other types of radioactive residue to argue that they should not be held to higher standards, he said.

Further exacerbating activists' concern is the fact that last month, the NCRP panel dropped the phrase "terrorism events" from the title of its forthcoming report and replaced it with the word "incidents." Hirsch said this suggests the panel is looking to apply optimization to a broader range of scenarios. He noted that officials with the Energy Department, which is responsible for paying for the cleanup of nuclear weapons sites, also sit on the panel.

Submit Time: 10/17/2012 17:14:36
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Manual and FR with redline for Mike to send

Alan,

These looks pretty good to me -- but you know how it is when you look at a thing for TOO long!

S.

PAG Manual with OMB cmts incorp 10-17-2012 0400 pm.docx PAG Manual with OMB cmts incorp 10-17-2012 0400 pm.docx PAGs FR with OMB cmts incorp 10-17-2012.docx 2012.docx PAGs FR with OMB cmts incorp 10-17-2012.docx

Here are some ideas for Mike's note (it has a lot of borrowing from his previous note!)

Colleagues,

Here are, as promised, redline/strikeout versions of the PAG Manual and Federal Register Notice so that you can quickly review the edits we made in response to OMB's review. These documents are close-hold: Please limit distribution. Provide any high-level critical comments to me **no later than noon on Monday, Oct. 22**, but if you can provide your concurrence prior to that, we'll be able to talk with OMB sooner and move this project toward public review and comment.

Thanks for your help in finally getting to closure on this document. Please give me a call if you have any questions or concerns. Thanks,

Mike

Subject: Fw: FOR REVIEW: Draft Federal Register Notice and Radiation Guidance
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Brian Doster/OU=DC/O=USEPA/C=US@EPA CN=Debbie Dietrich/OU=DC/O=USEPA/C=US@EPA
From: CN=Susan Stahle/OU=DC/O=USEPA/C=US
Submit Time: 5/31/2012 09:15:50

Hi Alan --

Attached are comments on the FR Notice and the PAG Manual.

The most substantive comments made are those regarding the legal authority sections in both documents, including the "Key Points" section at the end of Chapter 1. As mentioned previously, I drafted the legal authorities paragraphs to carefully and accurately explain our legal authorities for this Manual. It looks like others have made edits to these paragraphs. Please make the correcting edits I have included in these document to make sure these documents accurately describe our legal authorities for issuing this Manual.

Please also note I have included other minor editorial edits in the Manual.

Otherwise, ARLO concurs with these documents.

Please let me know if you have any questions.

Draft 2012 PAG Manual 5-22-2012 (ss (053012).doc Draft 2012 PAG Manual 5-22-2012 (ss (053012).doc Draft PAGs FR 5-22-2012 (ss 052912).doc Draft PAGs FR 5-22-2012 (ss 052912).doc

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

----- Forwarded by Susan Stahle/DC/USEPA/US on 05/31/2012 09:10 AM -----

From: Debbie Dietrich/DC/USEPA/US
To: Lisa Feldt/DC/USEPA/US@EPA, Larry Stanton/DC/USEPA/US@EPA, Dana Tulis/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA, Barnes Johnson/DC/USEPA/US@EPA, Pamela Barr/DC/USEPA/US@EPA, Eric Burneson/DC/USEPA/US@EPA, David Travers/DC/USEPA/US@EPA, John Michaud/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Mike Flynn/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Cc: Juan Reyes/DC/USEPA/US@EPA, Lisa Nanko/DC/USEPA/US@EPA, Cayce Parrish/DC/USEPA/US@EPA
Date: 05/23/2012 02:26 PM
Subject: FOR REVIEW: Draft Federal Register Notice and Radiation Guidance

---

Intra-agency colleagues and PAGs reviewers,

This is in follow-up to Alan Perrin's email of March 28, 2012 and my more recent message of May 17, 2012. Attached for your review is a proposed federal register notice and radiation guidance that has been drafted as a result of Principal Level Exercise (PLE) 3-10.

Since your last review of the PAG Manual and FR Notice in early April (Alan's email), an agreement was reached between EPA, DHS and the White House to incorporate the DHS 2008 RDD/IND Planning Guide into the PAG Manual, in effect, merging the Deputies' PLE Cleanup paper and the RDD/IND Late Phase guidance. Attached are draft versions of the slightly expanded combined Manual and the FR Notice for your review and concurrence.

Since the language in the PAGs and the Deputies' PLE papers has already been approved at a high level, very few changes have been made. Since the last review: most comments received were incorporated; some text was updated to provide bridging language between the Deputies' cleanup paper and the 2008 RDD/IND Late Phase guidance. It is good news that, with this merged document, users will end up with a single guidance for radiological incidents once the PAG Manual is finalized.

I apologize for the current review time frame! EPA is being asked to meet some very demanding external deadlines, unfortunately that means our internal deadlines must be equally demanding. **Please provide your office's consolidated concurrence/comments via email not later than 4:00 pm on Tuesday, May 29, to Alan Perrin with a cc to me**. We are meeting with the Deputy Administrator at 1 pm the following day (5/30) to discuss any remaining issues. Let me know if you have any concerns, and thank you for providing your input on such a short schedule.

[attachment "Draft PAGs FR 5-22-2012.doc" deleted by Susan Stahle/DC/USEPA/US] [attachment "Draft 2012 PAG Manual 5-22-2012.doc" deleted by Susan Stahle/DC/USEPA/US]

Debbie Dietrich
Associate Administrator for Homeland Security
USEPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Ph 202-564-6978
Fax 202-501-0026

Subject: ch 4 key points
To: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Daniel Schultheisz/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 5/22/2012 09:31:56

Here are those edits in track change if that is easier (I'm only trying to convey the edits in that section - not sure what else is in this particular file.

111-temp_ch4_key-points_adp.doc 111-temp_ch4_key-points_adp.doc

~~~~~~~~~~~~~~

Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~~

Submit Time: 6/1/2012 12:44:54
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Better version for Debbie

Sorry I didn't get to these before last night!

This version incorporates numerous helpful (editorial) improvements suggested yesterday by Sue Stahle of OGC/ARLO. We also had already incorporated Sue's suggestions on the Legal Basis section up front to properly cite our authorities for providing PAGs.

Draft 2012 PAG Manual 6-1-2012 v2.doc Draft 2012 PAG Manual
6-1-2012 v2.doc

Subject: Fw: Review and Edit PAG Lecture
From: CN=Edward Tupin/OU=DC/O=USEPA/C=US
Submit Time: 8/3/2012 08:25:24
To: "DeCair, Sara" <Decair.Sara@epamail.epa.gov>
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US

Sara

I am forwarding Ed Maher's request to you for action, as this is your project. Note his deadline.

Ed
Edward A. Tupin, MS, CHP
Health Physicist
Radiation Protection Division
Office of Radiation and Indoor Air
USEPA
Office: 202-343-9383
Cell: 202-253-8206

Location: 1310 L St., NW 5th floor
Washington, DC

Sent by EPA Wireless E-Mail Services

From: Ed Maher [emaher@moellerinc.com]
Sent: 08/03/2012 05:20 AM MST
To: Edward Tupin
Cc: "ETupin@alumni.wfu.edu" <ETupin@alumni.wfu.edu>; "etupin@yahoo.com" <etupin@yahoo.com>
Subject: Review and Edit PAG Lecture

Hi Ed!

I'm taking you up on your offer to review and edit the PAG lecture we give at the Radiological Emergency Planning course at the School of Public Health. I appreciate you willing to review and edit. I will need this back by COB on August 22, or sooner so the lecture can be printed for the class on time.

Thanks Again,

Ed

Edward F. Maher, Sc.D., CHP

Course Director

Radiological Emergency Planning

Harvard School of Public Health

Center for Continuing Professional Education

(978) 929-9133 x3201 (Office)

(978) 929-9134 (Fax)

(978) 807-3280 (Mobile)

emaher@hsph.harvard.edu

emaher@moellerinc.com

Maher - Protective Action Guides Rev 2012.pptx

ED_001057C_T3_00182852

Protective Action Guides (PAGs)

Edward F. Maher, Sc.D., CHP

RADIOLOGICAL EMERGENCY PLANNING

Harvard School Of Public Health

August 24, 2012

ED_001057C_T3_00182852

Brief Overview

- What are Protective Action Guides?
- History of the PAG Manual
- PAG Manual: EPA-400-R-92-001
- Technical Approach to PAGs and Derived Response Levels
- Status of Revision to the PAG Manual
- Projecting Doses for use with PAGs

ED_001057C_T3_00182852

Protective Action Guide

The projected dose to reference man, or other defined individual, from an unplanned release of radioactive material at which a specific protective action to reduce or avoid that dose is recommended.

ED_001057C_T3_00182852

Protective Action

During a nuclear incident, when the source of exposure of the public is not under control, the public usually can be protected only by some form of intervention which will disrupt normal living. Such intervention is termed <u>protective action.</u>

ED_001057C_T3_00182852

Four Principles for PAGs

- Avoid Acute Effects
- Risk of delayed effects should not exceed upper bounds under emergency conditions
- PAGs should not be higher than justified based on optimization of cost and risk
- Risk of protective action should not exceed risk from the dose avoided

ED_001057C_T3_00182852

Protective Action Guides…….

- Are NOT Absolute Standards
- DO NOT Define “Safe” or “Unsafe” Levels of Exposure or Contamination
- DO Represent Approximate Levels at Which the Protective Actions are Justified

ED_001057C_T3_00182852

Brief PAG History

- First recommendations by FRC in 1960's
  - Fallout radionuclides (iodines, cesium)
  - Ingestion pathway (milk)
- Function transferred to EPA (1970)
- FEMA re-delegated role to EPA (1982)
- EPA role in PAG reaffirmed by FRERP (1996) NRP (2004)and NRF (2008)

ED_001057C_T3_00182852

Why Revise the PAG Manual?

- Expand applicability (post 9/11)
- Include new (1998) FDA guidance on food
- Include new FDA policy on use of KI
- Update dosimetry basis (ICRP 60+ and FGR 13/CD Supplement)

EPA Recommendations 1982

- Reflected Three Mile Island accident
- Three accident phases:
  - Early (first four days)
  - Intermediate (weeks to months)
  - Late (months to years)
- Nuclear power plant accident driven
- General format of current PAG manual
- Major emphasis on early phase activities

ED_001057C_T3_00182852

ED_001057C_T3_00182852

Exposure Pathways & Phases

EXTERNAL RADIATION-PLUME

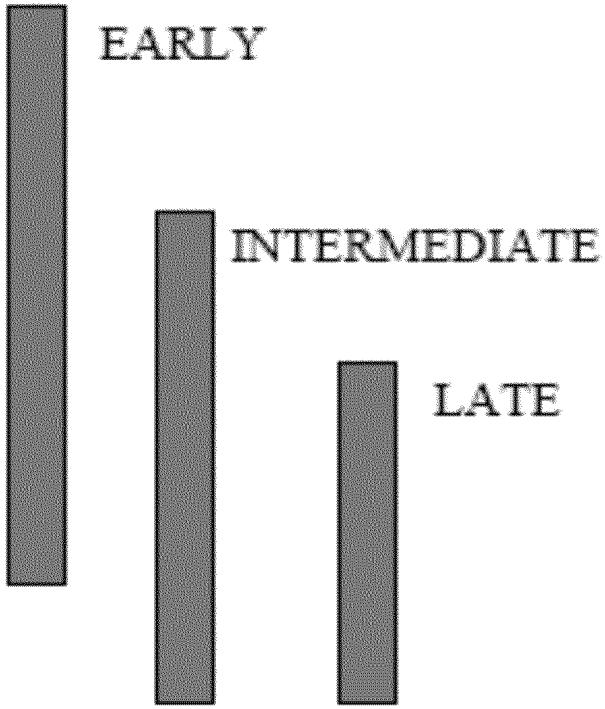
INHALATION-PLUME

CONTAMINATION OF SKIN AND CLOTHES

EXTERNAL RADIATION -- GROUND DEPOSITION

INGESTION

INHALATION -- RESUSPENDED



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PAG is Based on Dose *Avoided* Not Dose *Received*

"Doses incurred prior to initiation of a protective action should not normally be included. Similarly, doses that might be received following the early phase should not be included for decisions on whether or not to evacuate or shelter. . . . For those situations where significant dose has already occurred prior to implementing protective action, the projected dose for comparison to a PAG should not include this prior dose." EPA 400, page 2-9.

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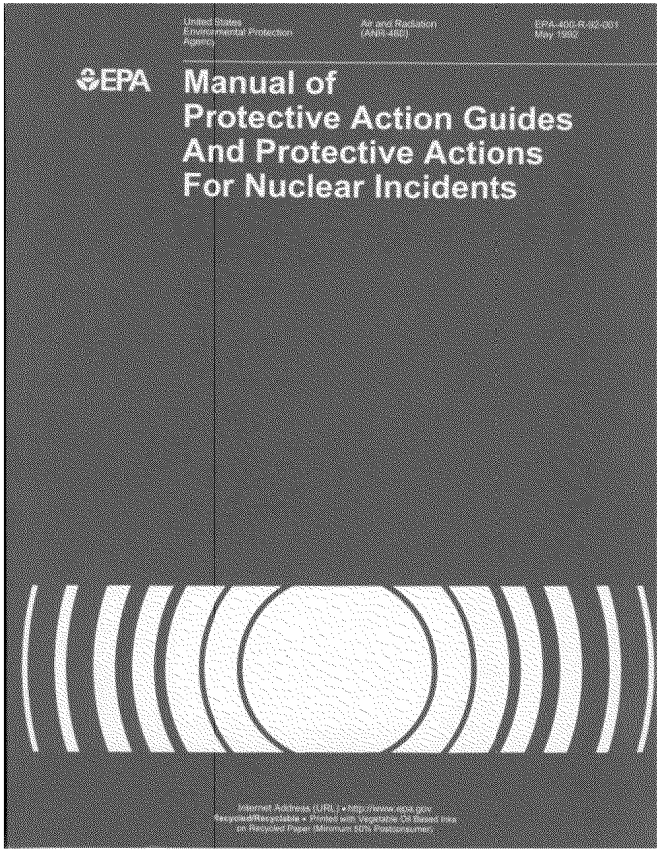
1992 EPA PAG Manual

- Still Based on Nuclear Power Plant Experience
- Evolved from previous versions since 1982
- Consistent with FRG 11
- ICRP 30 Methodology



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1992 PAG Manual (contin.)

- Included Food and Drug Administration (FDA) 1983 Recommendations on food and animal feed contamination
- Drinking water guidance promised
- Cleanup and recovery guidance promised
- Web site for the PAG manual:

  http://nepis.epa.gov/pubtitleOAR.htm

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Emergency Worker Exposure

- 5 rem (OSHA radiation worker dose)
- 10 rem protection of valuable property*
- 25 rem life saving or protection of large populations*
- >25 rem life saving or protection of large populations*

*When lower values not practical. Voluntary basis, fully informed

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Assumptions for Basis of Early Phase PAGs

- The value selected as the *avoided dose* which justifies evacuation is 1 -5 rem because:
  - it limits risk of delayed effects (protective of fetus)
  - cost of implementation at lower value not justified
  - avoids acute effects and risk of dose > risk of evacuation
- It is assumed the dose normally avoidable by evacuation is one half of the projected dose.

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Dose Conversion Factors (DCFs)

For Early Phase DCFs given for three pathways:

- Immersion in Cloud (External Dose)
- Inhalation in Cloud (Inhalation Dose)
- Deposition of Radioactivity (External Dose)
- Combination of the three pathways

Immersion DCF Assumptions

- Based on immersion in Plume (conservative for overhead Plume)
- Semi-infinite Cloud

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Inhalation DCF Assumptions

- Chemical and physical form of released material is that which gives the highest dose

- Uses ICRP* 30 Methodology (1977) which has been superseded by ICRP 66 Methodology (1990)

*International Commission on Radiological Protection

Deposition DCF Assumptions

- Deposition velocity is 1 cm/s for iodines and 0.1 cm/s for particulates
- Depletion of plume occurs at beginning of release
- Exposure to deposited radioactivity occurs for 4 days (96 hours)

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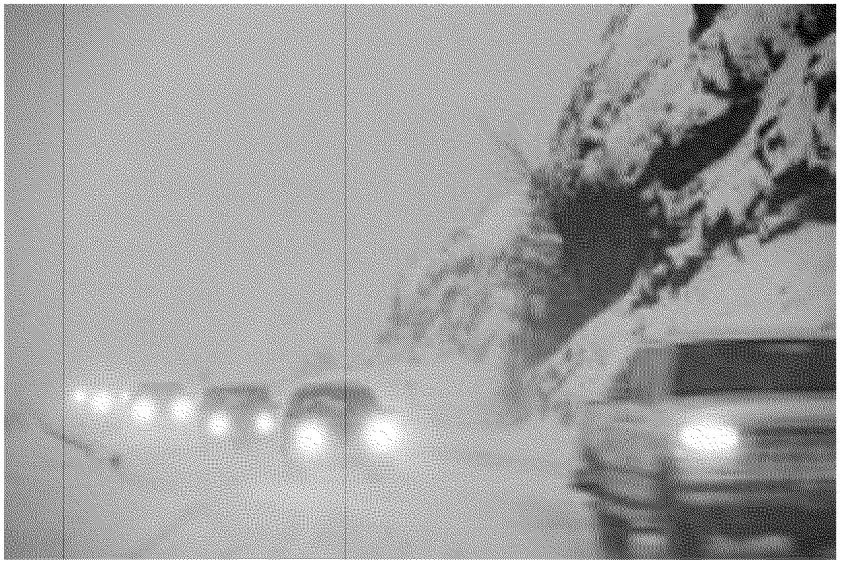
Considerations for Evacuation

- Dose is only avoided if evacuation time is shorter than exposure time
- Risk of evacuation is greater for some individuals
- Risk of evacuation is greater under adverse weather conditions

Considerations for Evacuation



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Evacuation PAG of 1-5 rem may not be appropriate

- For a short duration, high exposure release sheltering may be more protective.
- Sheltering may be preferred for higher risk groups up to 5 rem.
- Sheltering may be preferred for hazardous environmental conditions up to 5 rem (or 10 rem for higher risk groups)

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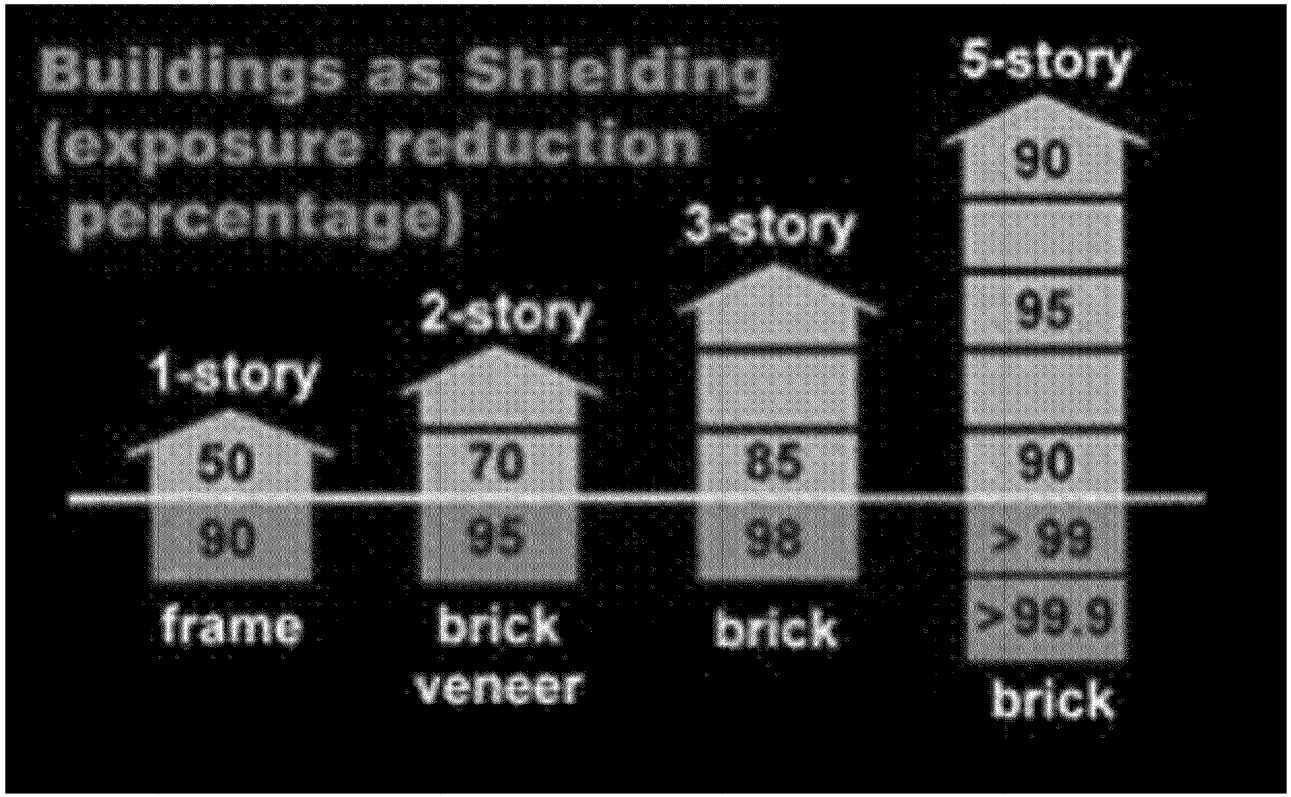
Sheltering Dose Reduction Factors for External Radiation



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Sheltering Dose Reduction Factors for Internal Exposure

Ventilation Rate (air changes/h)	Duration of Plume (h)	DRF
0.3	0.5	0.07
	1	0.14
	2	0.25
	6	0.54
1.0	0.5	0.21
	1	0.36
	2	0.56
	6	0.83

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Sheltering May not Be Protective For Longer Release Times

- Dose reduction from external exposure is extremely variable
- Sheltering for more than 1-2 air exchanges is not very effective
- Persons not leaving the shelter after the plume passes can receive increased exposure from contaminated indoor air.

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Early Phase PAGs

Old	New
• Potassium Iodide (KI) 25 rem thyroid dose (adult)	• KI threshold 5 rem thyroid dose (child) • KI use: includes new FDA over the counter sale approval (2001) recommendations and additional guidance (2003-2004)

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FDA 2002 KI Recommendations

	Thyroid Dose*	KI dose
– Adults over 40 yrs	500 rad	130 mg
– Adults 18-40 yrs	10 rad	130 mg
– Pregnant women	5 rad	130 mg
– Children 3 -18 yrs	5 rad	65 mg
– Children 1-36 mos	5 rad	32 mg
– Birth through 1 month	5 rad	16 mg

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KI: More Harm Than Good?

- Effective evacuation and/or sheltering reduces the dose to the whole body and the thyroid.
- Effective administration of KI only reduces dose to the thyroid.
  - May slow down evacuation/sheltering process
  - May give false sense of security so other protective action recommendations are not properly followed.

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Intermediate Phase

- From time source release is controlled until additional protective actions are terminated
- Reliable environmental measurements available for decision making on protective actions
- Lasts weeks to many months

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Intermediate Phase (Residents)

- Contamination
- External radiation from ground deposition
- Inhalation of resuspended radioactive material
- Ingestion of contaminated food and water
- Release of property items
- Decontamination of persons
- Relocation
- Access controls
- Decontamination of land and property
- Food and water controls
- Decontamination of items

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Intermediate Phase Issues

Re-entry - return of individuals to a contaminated, access controlled area for a limited time for a specific purpose

- Workers to repair or operate critical infrastructure
- Workers to feed and/or milk animals
- Workers to retrieve vital records, equipment
- Residents to retrieve personal effects

Assumptions for Basis of Intermediate Phase PAGs

The value selected as the *avoided dose* which justifies relocation is 2 rem first year; 0.5 rem second and any subsequent year not to exceed 5 rem in 50 years because:

* using a typical nuclear power plant source term a projected dose of 2 rem in the first year will give 0.5 rem in the second year and less than 5 rem in 50 years.
* It is assumed the dose normally avoidable by relocation is 60% of the projected dose.

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Re-entry

What considerations go into a re-entry PAG?

- Who is going to enter
- Doses and dose rates
- Activities to be performed
- Protective clothing – need, type
- Respiratory protection
- Monitoring

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Intermediate Phase

Old

- Population relocation – ≥ 2 rem (projected dose)
- Apply dose reduction techniques - < 2 rem
- Food (FDA 1982 Guidance Federal Register Notice and Background document incorporated)
- Drinking Water PAG– just promised

New

- Population relocation – ≥ 2 rem (projected dose)
- Apply dose reduction techniques - < 2 rem
- Food (FDA 1998 Guidance incorporated) – most limiting of
  - 0.5 rem CEDE or
  - 5 rem CDE to organ or tissue
- Drinking water – 0.5 rem CEDE first year

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FDA Food PAGs (old)

- FDA 1982 Federal Register Notice
  - 0.5 rem annual dose equivalent
  - ICRP 30 methodology
  - Derived Intervention Level (DIL) calculation equation
  - Sum of fractions for multiple radionuclides

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FDA Food PAGs (new)

- 1998 FDA guidance - most limiting of
  - 0.5 rem Committed Effective Dose Equivalent (CEDE)
  - 5 rem Committed Dose Equivalent (CDE) to most exposed organ or tissue
  - ICRP 56 methodology
- Table of Derived Intervention Levels (DIL)
  - Calculated for nine “marker” radionuclides
  - Default assumption: 30% of diet is contaminated
  - Sum of fractions for multiple radionuclides

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Relocation Calculation

- Doses already received by population not used in calculating **future** projected doses
- Any doses already received should be used by decision makers in deciding whether or not to relocate

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Late or Recovery Phase

- Restoration of incident site to conditions as near as possible to "normal"
- Removal of contamination
- Elimination of access restrictions
- End food and water controls
- Return of population to homes and jobs

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Late or Recovery Phase

- State and local governments have the primary responsibility for planning the recovery
- State and local governments will initiate recovery planning after stabilization of the emergency situation

Late Phase PAGs

- Promised in 1992
- Optimized long-term PAG for recovery
- RDD/IND addressed by DHS Consequences Management subgroup
- Final document published in Federal Register August 1, 2008

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Approach to Late Phase PAGs

- Focus on process for reaching consensus decision on acceptable levels
  - Identify stakeholders
  - Identify factors for consideration
- Describe protective actions that can be taken during recovery phase
- Identify existing standards and guidance

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Release of Property

- Personal property will need to be brought out of controlled areas for uncontrolled release
- May happen during evacuation and relocation
- Criteria for survey and release needed

Cleanup Issues Subgroup

- DHS lead RDD/IND Consequences Management Subgroup addressed recovery phase issues
- Optimization based on “Framework for Environmental Health Risk Management” (1997)
- Details developed by Operational Guides Technical Working Group – DOE lead
- Interim Final Report Feb 2009

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Optimization Factors

- Areas impacted (e.g., size, location relative to population)
- types of contamination (chemical and physical forms of radionuclides)
- Other hazards present (chemical, biological and physical)
- Actions already taken during the early and intermediate phases
- Projected land use

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Optimization Factors (contin.)

- Costs and available resources to implement
- Potential adverse impacts (e.g., to human health, environment, and economy)
- Long-term effectiveness
- Public acceptability, including local cultural sensitivities

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Optimization Process

- Variety of dose or risk benchmarks identified by state, Federal or others
- Use benchmarks as gauge to analyze various options for remediation
- Establish cleanup goals based on the optimization analysis

Operational Guides

- Address a wide range of personal and real property types
- Companion Software tool will facilitate use and interpretation of the guidelines
- Will be available for use in agency or organization specific planning documents

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OGT Stay Time Tables

- Operational Guides Technical Workgroup (OGT) developing example stay time tables to provide some guidance
- Radionuclide – specific
- Scenario (actions) – specific

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Example OGT Stay Times

TABLE 4 Scenario D1-2 Operational Guidelines for 0.5 rem Annual Dose: Indoor Worker Performing Essential Business inside the Building

	Surface Street Concentration pCi/m^2			
Radionuclide	4 Work Days	12 Work Days	4 Work Weeks	12 Work Week
Am-241	5.69E+07	3.14E+07	1.93E+07	9.69E+06
Cf-252	1.62E+08	9.04E+07	5.61E+07	2.88E+07
Cm-244	1.02E+08	5.67E+07	3.47E+07	1.75E+07
Co-60	1.47E+09	5.02E+08	2.23E+08	8.25E+07
Cs-137	6.14E+09	2.09E+09	9.27E+08	3.43E+08
Ir-192	4.79E+09	1.69E+09	8.03E+08	3.71E+08
Po-210	1.25E+09	5.28E+08	2.70E+08	1.23E+08
Pu-238	6.45E+07	3.56E+07	2.19E+07	1.10E+07
Pu-239	5.89E+07	3.25E+07	2.00E+07	1.00E+07
Ra-226	9.01E+08	3.47E+08	1.64E+08	6.34E+07
Sr-90	1.15E+10	5.07E+09	2.60E+09	1.09E+09

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Future of PAGs

- PAGs are being revised by EPA
- DHS published "**Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents:** Final August 1, 2008
- EPA expects draft for public comment of new PAGs by end of 2012 (?)

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Improvised Nuclear Devices

- Application of PAGs to IND events
  - Scope and scale
  - Fallout threats
  - Priority on lifesaving and avoidance of acute effects
  - Short response timeframe
  - Unique fallout decay curve
- New PAGS will refer reader to IND guidance from National Security Staff

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Changes to PAGs

- Clarifies the use of the existing 1992 PAGs for incidents other than nuclear power plant accidents.
- Lowers the projected thyroid dose for administration of stable iodine based on data from the Chernobyl accident.
- Updates the dosimetry basis from ICRP 26/30 to ICRP 60+.

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Key Activities & Milestones

- **Oct. 2006:** Multi-agency review of incomplete draft revision by PAGs Subcommittee of the Federal Radiological Preparedness Coordinating Committee
- **Feb. 2007:** The new Federal Radiological Monitoring and Assessment Center (FRMAC)-calculated tables and associated language was added to the draft revision
- **Mar. 2007:** Multi-agency review of full document by PAGs Subcommittee
- **Apr. 2007:** 4-hour PAGs workshop at National REP Conference
- **May 2007:** 4-hour PAGs workshop at CRCPD Conference
- **Late 2012:** Revised PAG Manual will be issued as draft for public comment?????

QUESTIONS?

ED_001057C_T3_00182852

Submit Time: 10/25/2012 11:36:21
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Manual per recent comment incorporation discussions

What I think I don't have right is the water lingo -- can't seem to find the latest greatest that you (I?) sent up to Mike.

PAG Manual with OMB and EPA cmts incorp 10-25-2012 1130 am.docx PAG Manual with OMB and EPA cmts incorp 10-25-2012 1130 am.docx

I think it looks good, of course, I did have a few additional edits (in attached w/o track changes because I didn't remember to turn it on...)

Process Path for PAGs 5-22-2012_v3.docx Process Path for PAGs 5-22-2012_v3.docx

~~~~~~~~~~~~~

Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

Sara DeCair---05/22/2012 04:43:50 PM---I'll print the PAG Manual and a final version of this two-pager first thing in the morning. Do you t

From: Sara DeCair/DC/USEPA/US
To: Lee Veal/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 05/22/2012 04:43 PM
Subject: PAGs two-pager updated for Mike

I'll print the PAG Manual and a final version of this two-pager first thing in the morning. Do you think the "Issue:" line up top does the trick here? Thanks for suggestions!

S.

[attachment "Process Path for PAGs 5-22-2012.docx" deleted by Alan Perrin/DC/USEPA/US]
~~~~~~~~~~~~~

Subject: Fw: draft PAG Manual and FRN
To: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA CN=Daniel Schultheisz/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 6/1/2012 12:59:29

Let's huddle after you've had a chance to absorb a bit of this.
~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

----- Forwarded by Alan Perrin/DC/USEPA/US on 06/01/2012 12:58 PM -----

From: Barnes Johnson/DC/USEPA/US
To: Debbie Dietrich/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA
Cc: Lisa Feldt/DC/USEPA/US, Dana Tulis/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA, Jennifer Wilbur/DC/USEPA/US@EPA, Thea Williams/DC/USEPA/US@EPA, Phyllis Anderson/DC/USEPA/US@EPA, Bruce Means/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA
Date: 06/01/2012 12:40 PM
Subject: Fw: draft PAG Manual and FRN

Dear Debbie and Alan,

We have just a few lingering issues. I have ordered them in terms of importance with the first being the most important.

Ex. 5 - Deliberative Process

Unfortunately I am off to a doctor's appointment in about an hour but Phyllis will be here this afternoon if there is any call for more discussion.

Take care,

Barnes Johnson | U.S. Environmental Protection Agency | Superfund | Tel 703 603 8960 | Fax 703 603 9146 | johnson.barnes@epa.gov
----- Forwarded by Barnes Johnson/DC/USEPA/US on 06/01/2012 12:30 PM -----

From: Stuart Walker/DC/USEPA/US
To: Barnes Johnson/DC/USEPA/US@EPA
Cc: Bruce Means/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA, Jennifer Wilbur/DC/USEPA/US@EPA, Phyllis Anderson/DC/USEPA/US@EPA, Thea Williams/DC/USEPA/US@EPA
Date: 06/01/2012 12:26 PM
~~~~~~~~~~~~~

Subject: Fw: draft PAG Manual and FRN

Attached are my redline/strikeout comments with explanatory comment boxes. Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Draft PAGs FR 5-31-2012 Stuart.doc Draft PAGs FR 5-31-2012 Stuart.docDraft 2012 PAG Manual 6-1-2012 Stuart.doc Draft 2012 PAG Manual 6-1-2012 Stuart.doc

I will walk over with a hard copy in a minute
----- Forwarded by Stuart Walker/DC/USEPA/US on 06/01/2012 12:08 PM -----

From: Stuart Walker/DC/USEPA/US
To: Barnes Johnson/DC/USEPA/US@EPA
Cc: Bruce Means/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA, Jennifer Wilbur/DC/USEPA/US@EPA, Phyllis Anderson/DC/USEPA/US@EPA, Thea Williams/DC/USEPA/US@EPA
Date: 06/01/2012 10:57 AM
Subject: Fw: draft PAG Manual and FRN

To aid anyone's review who is looking at this, I have attached two versions that show how todays draft PAG FR Notice and Manual differs from the previous versions IF OSRTI's comments had been incorporated. So I took our redline/strikeout comments, made that a clean version, and compared it to the todays version. The redline/strikeout shows how ORIA's draft today differs.
[attachment "Changes in today's PAG FR Notice from previous OSRTI comments version.docx" deleted by Stuart Walker/DC/USEPA/US] [attachment "Changes in today's PAG Manual from previous OSRTI comments version.docx" deleted by Stuart Walker/DC/USEPA/US]
----- Forwarded by Stuart Walker/DC/USEPA/US on 06/01/2012 10:53 AM -----

From: Stuart Walker/DC/USEPA/US
To: Barnes Johnson/DC/USEPA/US@EPA
Cc: Bruce Means/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA, Jennifer Wilbur/DC/USEPA/US@EPA, Phyllis Anderson/DC/USEPA/US@EPA, Thea Williams/DC/USEPA/US@EPA
Date: 06/01/2012 10:32 AM
Subject: Re: Fw: draft PAG Manual and FRN

I think Bruce is out today. I think my congressional call on Homestake is over in a few minutes. I'll start reviewing

Barnes Johnson---06/01/2012 10:29:31 AM---FYI - are any of you available to take a look at this? Bruce, how did it go with Alan yesterday? Th

From: Barnes Johnson/DC/USEPA/US
To: Phyllis Anderson/DC/USEPA/US@EPA, Bruce Means/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA
Cc: Thea Williams/DC/USEPA/US@EPA, Jennifer Wilbur/DC/USEPA/US@EPA, James Woolford/DC/USEPA/US@EPA
Date: 06/01/2012 10:29 AM
Subject: Fw: draft PAG Manual and FRN

FYI - are any of you available to take a look at this? Bruce, how did it go with Alan yesterday?

Thanks,

Barnes Johnson | U.S. Environmental Protection Agency | Superfund | Tel 703 603 8960 | Fax 703 603 9146 | johnson.barnes@epa.gov
----- Forwarded by Barnes Johnson/DC/USEPA/US on 06/01/2012 10:28 AM -----

From: Debbie Dietrich/DC/USEPA/US
To: "Barnes Johnson" <Johnson.Barnes@epamail.epa.gov>, "John Michaud" <Michaud.John@epamail.epa.gov>, "James Woolford" <Woolford.James@epamail.epa.gov>
Date: 06/01/2012 10:18 AM
Subject: Fw: draft PAG Manual and FRN

Here is the final draft. Pls let me know by noon any showstopper issues.
Alan Perrin

----- Original Message -----
From: Alan Perrin
Sent: 06/01/2012 09:48 AM EDT
To: Debbie Dietrich
Cc: Mike Flynn; Jonathan Edwards; Lee Veal; Sara DeCair
Subject: draft PAG Manual and FRN
Debbie,

Here are the revised draft PAGs Manual and the associated draft Federal Register Notice following the most recent intra-agency review.

[attachment "Draft 2012 PAG Manual 6-1-2012.doc" deleted by Stuart Walker/DC/USEPA/US]
[attachment "Draft PAGs FR 5-31-2012.doc" deleted by Stuart Walker/DC/USEPA/US]

Regards, Alan
~~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~~

Sara

I went through the FAQs again using the notes that we both took during the conference call and the 1992 PAGs Manual. Instead of having you sift through the entire FAQ document, I pulled out the major edits and put them in a separate doc (Important FAQ edits 6.13.2012.docx). The full version is also attached.

If you still want to meet up tomorrow to go over these, I am free all day other than between 2:30 and 3:30.

ATTPQNFB.docx Important FAQ edits 6.13.2012.docx

FAQs All November 2011 with revisions draft 2.doc

2.doc FAQs All November 2011 with revisions draft 2.doc

William D. Sacks
U.S. Environmental Protection Agency
Radiation Protection Division
202.343.9707

Sara DeCair---06/12/2012 04:26:53 PM---Bill -- Here is a paper that has talking points you'll need for the recovery and cleanup discussion

From: Sara DeCair/DC/USEPA/US
To: William Sacks/DC/USEPA/US@EPA
Date: 06/12/2012 04:26 PM
Subject: Re: PAGs FAQ discussion

Bill --

Here is a paper that has talking points you'll need for the recovery and cleanup discussion -- see Chapter 4 where there is some great language on who to include in the work groups and for how long. I can help pick out key statements if you have time on Thursday. Thanks so much!!

S.

[attachment "Draft 2012 PAG Manual 6-1-2012 v2.doc" deleted by William Sacks/DC/USEPA/US]

William Sacks---06/12/2012 09:33:39 AM---Jess and Sara Here is an electronic copy of the FAQ document.

From: William Sacks/DC/USEPA/US
To: Jessica Wieder/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA
Date: 06/12/2012 09:33 AM
Subject: Re: PAGs FAQ discussion

Jess and Sara

Here is an electronic copy of the FAQ document.

Talk to you at 2

Bill
[attachment "FAQs All November 2011 with revisions draft 2.doc" deleted by Sara DeCair/DC/USEPA/US]

William D. Sacks
U.S. Environmental Protection Agency
Radiation Protection Division
202.343.9707

Jessica Wieder---06/12/2012 09:26:50 AM---I am working at home today. So for our meeting at 2, go to room 533 (It is a little room in a back c

From: Jessica Wieder/DC/USEPA/US
To: William Sacks/DC/USEPA/US@EPA, Sheena Martenies/DC/USEPA/US@EPA
Cc: Sara DeCair/DC/USEPA/US@EPA
Date: 06/12/2012 09:26 AM
Subject: PAGs FAQ discussion

I am working at home today. So for our meeting at 2, go to room 533 (It is a little room in a back corner) and use this call in number **Ex. 6 - Personal Privacy**

Bill -Please send me and Sara electronic copies of the FAQs. Thank you.

Jess

Jessica Wieder
U.S. Environmental Protection Agency
Radiation Protection Division
Center for Radiation Information
w: (202) 343-9201
bb: (202) 420-9353

From: "Tyler A. Willis" <twillis@endyna.com>
To: Sara DeCair/DC/USEPA/US@EPA
Cc: "Brie Welzer" <bwelzer@endyna.com>
Subject: RE: PAGs Comments
Submit Time: 4/16/2012 09:06:23

Sara,

Attached are the FR Notice and 2012 Guidance Document with edits from both commenters incorporated. Let me know if you have any questions or comments.

Regards,

Tyler A. Willis

Senior Environmental Consultant
twillis@endyna.com

EnDyna, Inc.
7926 Jones Branch Drive, Suite 620
McLean, VA 22102
Tel: (703) 848-8842, ext. 124
Fax: (703) 848-9001
www.endyna.com

From: Sara DeCair [mailto:DeCair.Sara@epamail.epa.gov]
Sent: Thursday, April 12, 2012 8:05 PM
To: Tyler A. Willis
Subject: Re: PAGs Comments

It's okay, and will it be fine to promise bosses Monday? We didn't get some needed feedback but are going to OMB anyway. Let me know, thanks you!
S.

Sent by EPA Wireless E-Mail Services

From: "Tyler A. Willis" [twillis@endyna.com]
Sent: 04/12/2012 04:34 PM AST
To: Sara DeCair
Subject: PAGs Comments

Sara,

It looks like the returned work may be COB tomorrow. Let me know if that is not going to work.

Regards,

Tyler A. Willis

Senior Environmental Consultant
twillis@endyna.com

EnDyna, Inc.
7926 Jones Branch Drive, Suite 620
McLean, VA 22102
Tel: (703) 848-8842, ext. 124
Fax: (703) 848-9001
www.endyna.com

Draft PAGs FR 04-16-2012.doc **Draft PAGs-Combined Document - 4-16-12.doc**

From: "Tyler A. Willis" <twillis@endyna.com>
To: Sara DeCair/DC/USEPA/US@EPA
Subject: RE: New version, just a little formatting
Submit Time: 3/23/2012 10:50:27

Sara,

Attached are the documents reformatted. The FR Notice has been formatted in a way that is more effective, but this process takes more time, so I did not do it for the Manual as the documents size would require hours you may not have in the budget. In the future this can be avoided by setting up all your titles, subtitles, tables, figures, and paragraphs specific formatting prior to document creation. Let me know if that is confusing or unclear.

Regards,

Tyler A. Willis

Senior Environmental Consultant
twillis@endyna.com

EnDyna, Inc.
7926 Jones Branch Drive, Suite 620
McLean, VA 22102
Tel: (703) 848-8842, ext. 124
Fax: (703) 848-9001
www.endyna.com

From: Sara DeCair [mailto:DeCair.Sara@epamail.epa.gov]
Sent: Wednesday, March 21, 2012 4:39 PM
To: twillis@endyna.com
Cc: siddhanti@endyna.com
Subject: New version, just a little formatting

Tyler,

I went through and hopefully mostly cleared up the questions you had (thank you for

highlighting those items) and now I've moved the Re-entry matrix so I messed up the formatting for it to fit. I also may have screwed up the TOC but tried to fix it -- dangerous!

In the meantime I am getting an internal review done now, and will have a few more tweaks maybe on Friday. We hope to send it for an intra-office review on Monday. So let me know if you will not be able to get a better formatted version back to me by Monday morning? Many thanks,

Sara

*(See attached file: Draft PAGs Combined Document - 03-21-2012sdd.doc)(See attached file: Draft PAGs FR Notice - 03-21-2012sdd.docm)***Draft PAGs Combined Document - 03-23-2012 (formatting).doc** **Draft PAGs FR Notice - 03-22-2012 (formatting).doc**

Subject: PAGs - Chapter 4
To: CN=Debbie Dietrich/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Mike Flynn/OU=DC/O=USEPA/C=US@EPA CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 11/27/2012 18:37:00

Debbie,

Here's is a 'Chapter 4 - Guidance for the Late Phase' only file. Note that the footnote numbering no longer corresponds to that in the complete document; I also had to leave a few blank pages front and back with header info so that this would have Chapter "4" in the auto numbering of the sections. Hope this helps. - Alan

PAG Manual redline_Chapt-4_11-27-2012_v2.docx

PAG Manual redline_Chapt-4_11-27-2012_v2.docx

~~~~~~~~~~~~~

Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~

Subject: New outline
To: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
Submit Time: 3/19/2012 16:27:26

Just a few edits as we discussed. Note the file name change.

Lee
Outline for Planning and PAG Guidance 3-16-2012.docx

Outline for Planning and PAG Guidance 3-16-2012.docx

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322

Subject: revised PAG doc
To: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA CN=Daniel Schultheisz/OU=DC/O=USEPA/C=US@EPA CN=Tony Nesky/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 7/16/2012 09:59:26

I took a cut at incorporating edits from the draft sent around last Friday with Tony & Sara's comments. I did not use anything close to everything suggested. Here is a mark up of the edits I made (many coming from Tony -- thanks very much for your review), along with a clean 7/15 version accepting the eds comments.

Draft 2012 PAG Manual 7-11-2012_eds.docx Draft 2012 PAG Manual 7-11-2012_eds.docx**Draft 2012 PAG Manual 7-15-2012.docx** Draft 2012 PAG Manual 7-15-2012.docx

Take a look to ensure you are OK with these edits, and if you have any additional changes that you think are desirable for the current draft (on its way to OMB), let me know asap. Thanks, -Alan
~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~

Submit Time: 10/24/2012 17:36:47
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: comment spreadsheet

Still a last few sorting tricks to do, so the section numbers then line numbers (and those that lack line numbers) get in order. But the responses are all done except 3 ankle-biters that I can address early tomorrow with my last go at the Manual (adding some SI units, saying worker dose guides are in Total Effective Dose, stuff like that) --

See if you think this is good for our internal use, at least?

Thanks!!

S.

PAGS Comment Responses Oct 24 2012.xlsx PAGS
Comment Responses Oct 24 2012.xlsx

Submit Time: 3/10/2010 16:42:29
From: CN=Charles Openchowski/OU=DC/O=USEPA/C=US
To: CN=Mary-Kay Lynch/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Fw: Letter from Markey on PAGs

here's an article on the Markey letter -- I'll send you a copy of the actual letter next -- thanks
----- Forwarded by Charles Openchowski/DC/USEPA/US on 03/10/2010 04:41 PM -----

From: Mary-Kay Lynch/DC/USEPA/US

To: John Michaud/DC/USEPA/US@EPA, Richard Ossias/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Pat Hirsch/DC/USEPA/US@EPA, Mary-Kay Lynch/DC/USEPA/US@EPA, Earl Salo/DC/USEPA/US@EPA, Lee Tyner/DC/USEPA/US@EPA, Byron Brown/DC/USEPA/US@EPA, Ariadne Goerke/DC/USEPA/US@EPA, Arthur Elkins/DC/USEPA/US@EPA, Kevin Miller/DC/USEPA/US@EPA, Robert Friedrich/DC/USEPA/US@EPA

Date: 10/30/2009 10:56 AM

Subject: Letter from Markey on PAGs

Markey Bolsters Activists' Push To Reverse Bush EPA Radiation Policies

Rep. Edward Markey (D-MA) is joining environmentalists' calls for EPA to abandon controversial Bush-era radiation policies, including those limiting the need to address contamination until radiation reaches levels thousands of times higher than what the agency normally considers safe.

Markey's call, contained in an Oct. 27 letter to EPA Administrator Lisa Jackson, could bolster environmentalists who are scheduled to meet with key EPA officials Nov. 2 to discuss their long-standing concerns over the Bush radiation policies. Activists had requested the meeting in part due to concerns that staff in EPA's Office of Radiation and Indoor Air (ORIA) would not adequately brief the agency's new political leaders on the controversies surrounding the Bush policy proposals (*see related story*).

One environmental group, Public Employees for Environmental Responsibility (PEER), has also filed an Oct. 28 lawsuit under the Freedom of Information Act seeking agency documents showing "internal and external reviewers registered grave concerns about the radical relaxation of radiation exposure limits being proposed," the group said in a press release. Much of the information the group is seeking is similar to data Markey is asking Jackson to release.

In his letter, Markey, who chairs the House Energy & Environment Subcommittee, blasts the so-called protective action guide (PAG) for nuclear emergencies EPA drafted under Bush,

which was made public by an award-winning series of *Inside EPA* articles last year. Markey also urges Jackson to abandon other radiation policies initiated by the Bush EPA, including a controversial radiation risk guide.

According to Markey, the Bush-era policy proposals "could weaken radiation standards and protective guidance, ignoring sound scientific recommendations and dismantling decades of EPA policies for protection of the public from ionizing radiation." Markey says that if "EPA chooses to proceed with these actions, it could put public health at risk and threatens to undermine the public's confidence in the regulator meant to protect it."

Regarding the PAG, Markey notes the Bush-era proposal "would permit radioactivity concentrations in drinking water during the intermediate phase (for 1-2 years after the release) that are orders of magnitude higher than EPA's long-held drinking water standards and suggests that government officials need not provide clean water until groundwater radioactivity is thousands of times higher than traditional Superfund guidance."

The letter also echos activists' concerns that the guide embraces a controversial cleanup approach known as "optimization," which he says "allows cleanup standards far outside EPA's traditional acceptable risk range, so high that they could result in public exposures that are the equivalent of approximately 50,000 chest X-rays, with a cancer risk that EPA itself estimates at a remarkable 1 in 4" people.

Markey also demands that EPA identify who was responsible for calculating the controversial drinking water standards in the PAG and that it explain how the calculations were done. "Please provide documentation supporting the method used and all correspondence leading to the decision to adopt this methodology," Markey says.

The letter questions why, according to the Government Accountability Office, EPA as recently as September drafted yet another guidance on using the optimization approach to respond to nuclear emergencies "when this controversial approach from the prior Administration was supposed to be under review by the new administration."

Markey asks Jackson for "the status of the PAGs review by the new EPA leadership" and to "provide a detailed timeline and any preliminary conclusions."

Marcus Peacock, the Bush EPA's deputy administrator, signed off on the PAG during the administration's waning hours in office, but newly installed Obama officials halted its planned publication in the *Federal Register* days before its scheduled release, saying they wanted to review the document.

The review was initially placed on hold pending the Senate's confirmation of Gina McCarthy as EPA's new air and radiation chief. Following her confirmation, a coalition of environmental and public health groups -- including the Natural Resources Defense Counsel and Sierra Club -- requested that McCarthy, along with several other newly-appointed EPA officials, meet with them to discuss the PAG and the other controversial radiation policies before making any decisions.

McCarthy, along with Mathy Stanislaus, the Obama EPA's waste chief, and other agency officials have since agreed to meet with the activists on Nov. 2, an activist says. The purpose of the meeting will be to discuss the PAGs and the other controversial radiation proposals, including the draft risk guide, the activist says.

In his letter, Markey raises concerns that the draft risk guide, commonly known as the "Blue Book," disregards "almost every risk figure reported" by a 2006 National Academy of Sciences panel in a document chartered by EPA known as BEIR VII. "In fact, in the great majority of cases ORIA proposed to use a lower risk figure than that recommended by BEIR VII," Markey notes.

"Adopting these lower figures, would result in relaxed regulations and a concomitant increase in public exposures to radiation and potential radiation-induced cancers relative to the adoption of BEIR VII risk values," Markey says. "This has significant ramifications for all of EPA's regulatory activities even outside of ORIA, including those under the responsibility of Office of Solid Waste and Emergency Response (OSWER) and the Office of Water (OW)."

Markey in particular echoes activists' concerns that EPA in the draft Blue Book ignores a suggestion in the 2006 NAS study that radiation from "low-energy" sources such as medical X-rays may be two to three times more dangerous than previously thought.

"Does the EPA believe it is ethical to continue to [rely on its previous assumptions regarding X-rays] when in fact it is known that" they are more dangerous than previously thought, Markey's letter asks. "Please explain, particularly in light of the very large collective X-ray doses being received by the U.S population due to widespread use of CT scans in medicine."

An EPA spokesman says the agency "is reviewing the letter and will respond accordingly. -- *Douglas P. Guarino*

Subject: Enviros briefing for AA's on PAGs and other Rad issues (11-2-09)
To: CN=Elizabeth Southerland/OU=DC/O=USEPA/C=US@EPA CN=Helen Dawson/OU=DC/O=USEPA/C=US@EPA CN=RobinM Anderson/OU=DC/O=USEPA/C=US@EPA
Cc:
From: CN=Stuart Walker/OU=DC/O=USEPA/C=US
Submit Time: 11/3/2009 17:30:54

Here is a pdf of a hard copy of the briefing that I scanned in after getting a hard copy. It seems no one asked for an electronic copy.

Enviro PAG briefing.pdf Enviro PAG briefing.pdf

Concerns Regarding Pending Proposals from the Prior Administration to Significantly Weaken Radiation Protection Standards

2 November 2009

[redacted]

[redacted]

ED_001057C_T3_00571232

Starting Point: Longstanding Fundamental EPA Principles

1. Cancer Risks Should Not Exceed Acceptable Risk Range of 10^{-6} to 10^{-4}

2. Drinking Water Should Not Exceed Safe Drinking Water Levels (MCLs)

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THE OVERARCHING CONCERN

During the prior administration, ORIA proposed markedly weakening radiation standards- to levels far outside the risk range and far above the MCLs, placing longstanding EPA fundamental policies at risk.

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Background

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Key Cancer Incidence Risk Conversion Factor for Radiation

Current EPA Factor: 8.46×10^{-4}/Rem

EPA, Federal Guidance Report 13, Cancer Risk Coefficients for Environmental Exposure to Radionuclides (1991)

Newest National Academy of Sciences Factor: 1.14×10^{-3}/Rem

NAS, Health Effects from Exposure to Low Levels of Ionizing Radiation [Biological Effects of Ionizing Radiation (BEIR VII)], 2006

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In round numbers, EPA's own official figure is

$\sim 1 \times 10^{-3}$ cancer risk/Rem

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All agencies, including EPA, accept the Linear No-Threshold (LNT) Model, and the NAS has recently re-affirmed it.

LNT means there is no threshold of radiation exposure below which the risk is zero; risk increases with dose.

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Thus, for example, 0.01 Rem/yr
(10 mRem/yr)
for 30 yrs = 0.3 rem

Using EPA's radiation risk factor of
1×10^{-3} cancer/rem,
0.3 rem $= 3 \times 10^{-4}$ risk

Thus 10 mRem/yr for 30 years is at or beyond the outer limit of the risk range

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0.1 Rem/yr (100mRem/yr) for 30 yrs would, according to EPA's own risk figures, result in a 3×10^{-3} risk, or 30 times higher than the upper end of the acceptable risk range.

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1 Rem/yr for 30 yrs =
3×10^{-2} risk

10 Rem/yr for 30 yrs =
3×10^{-1} risk

300 and 3000 times the upper end of the risk range

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EPA has historically opposed any radiation standard above 15 mRem EDE/year and above. For example, NESHAPs were set at 10 mRem/yr, MCLs at 4 mRem/yr, etc.

Anything higher would exceed the EPA risk range, and EPA has declared would be "non-protective".

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ISSUE 1
THE DHS/EPA "DIRTY BOMB" PROTECTIVE ACTION GUIDE (PAG)

A Taskforce, which included EPA, issued in August 2008 final guidance for recovery from a Radiological Dispersal Device (RDD)

(Planning Guidance for Protection and Recovery Following Radiological Dispersal Device)

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The PAG included provisions for the long-term cleanup phase (which is to begin a year or two after the event).

EPA's position initially was that its CERCLA standards for cleaning up the nation's most contaminated sites should apply. Other agencies resisted; EPA acquiesced.

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The final Dirty Bomb PAG established for long-term cleanup a process called "optimization," by which there would be no health-based cleanup standard but rather one could choose any cleanup level one wished from various "benchmarks."

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Those benchmarks included

- 0.1 Rem/year
- 1 Rem/year
- 10 Rem/year

Below the benchmark, no cleanup would occur.

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Over the standard 30 year occupancy period EPA normally assumes, doses to the public under those benchmarks would result in cancer risks, according to EPA's official risk coefficients, of approximately:

- ~3×10^{-3}
- ~3×10^{-2} and
- ~3×10^{-1} respectively

<u>1 to 3 orders of magnitude outside EPA's acceptable risk range, and as high as 1 in 3 risk</u>

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CANCER RISKS* FROM EPA/ORIA PROPOSED PROTECTIVE ACTION GUIDE "OPTIMIZATION" PROCESS FOR LONG TERM CLEANUP

Cleanup Benchmark	≈ equivalent # of Chest X-rays		Risk of Cancer (exponential)	=1 Cancer Per X People Exposed	Factor by Which EPA Acceptable Risk Range Is Exceeded
	Per Year	Over 30 Years			
100 mrem/year	17	500	3.4×10^{-3}	1 in 300	34-3,400
500 mrem/year	83	2,500	1.7×10^{-2}	1 in 60	170-17,000
1,000 mrem/year	170	5,000	3.4×10^{-2}	1 in 30	340-34,000
10,000 mrem/year	1,700	50,000	3.4×10^{-1}	1 in 3	3,400-340,000

* Based on thirty-year exposure and most recent cancer risk estimates for ionizing radiation from the National Academy of Sciences

EPA had initially resisted "optimization," insisting on long-term cleanup standards within the risk range, but acquiesced. We were assured this would be limited to the dirty bomb PAGs, but were concerned it would end up applied to all sorts of other releases, and indeed, that is what ORIA tried to publish in the last days of the outgoing administration.

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Issue 2
Revised EPA PAGs

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In the last full day before the Obama Inauguration, outgoing Acting Administrator Marcus Peabody transmitted to the Federal Register ORIA's rewrite of EPA's PAGs for dealing with a wide range of radiological releases.

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We had written the outgoing Administration urging that it not engage in such "midnight mischief."

The Obama Administration, a day or two after taking office, and before the PAG could be published in the Federal Register, pulled it back, pending review by its new team.

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That is part of why we are here, to urge that that review result in the PAGs not being issued as ORIA had drafted them in the prior Administration. As drafted, they would astronomically increase permissible exposures to radioactivity.

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The revised Protective Action Guidance would be applicable to any "event or a series of events, deliberate or accidental, leading to the release or potential release into the environment of radioactive materials in sufficient quantity to warrant consideration of protective actions."

PAG August 2007 draft, p. 1-1

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PAGs are to apply to a "wide range of incidents," including transportation events, releases from a radiopharmaceutical facility, contamination at a scrap metal or recycling facility, incidents at research reactors, and incidents and releases at Department of Energy facilities or civil power reactors.

PAG draft p. ES-2, PAG website http://www.epa.gov/radiation/rert/pags.html

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"A PAG is defined as 'the projected dose to reference man, or other defined individual, from a release of radioactive material at which a specific protective action to reduce or avoid that dose is recommended.' PAG Draft p. ES-2

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In 2001, EPA's position was that any revised general PAGs should be based on Safe Drinking Water MCLs for intermediate phase water consumption and the CERCLA risk range for long-term cleanup standards. Subsequently, ORIA effectively abandoned this position and put forward proposals to extraordinarily relax these standards.

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Intermediate Phase Water PAGs

The intermediate phase lasts for one to several years after the initial release.

Buried deep in the proposed PAGs is the following table—with no explanation that the water contamination limits in the table are different than longstanding EPA water standards, nor any substantive explanation of how they were derived. (The right-hand two columns, marked DRL, or Derived Response Levels, are the proposed water contaminant limits in the draft PAGs.)

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Table 4-1. DRLs Associated with a Total Effective Dose Equivalent of 0.5 rem Resulting from 1 Year of Ingestion

			Normalized DRLs mrem per pCi/L (TEDE)		DRLs (pCi/L)	
Radionuclide	Radioactive Decay Constant 1/s	DCF mrem/uCi	Without Radioactive Decay	With Radioactive Decay Only	Without Radioactive Decay	With Radioactive Decay Only
H-3	1.84E-04	1.85E-01	1.12E-04	1.10E-04	4.42E+06	4.54E+06
C-14	3.31E-07	2.15E+00	1.57E-03	1.37E-03	3.19E+05	3.19E+05
Na-22	7.29E-04	1.18E+01	8.61E-03	7.50E-03	5.80E+04	6.61E+04
P-32	4.85E-02	8.88E+00	6.40E-03	3.86E-04	7.71E+04	1.37E+05
P-33	2.73E-02	9.10E-01	6.84E-04	6.67E-05	7.53E+06	7.50E+06
S-35	7.93E-03	7.87E+00	2.10E-03	6.84E-04	2.38E+05	7.31E+05
Cl-36	6.30E-09	3.44E+00	2.51E-03	2.51E-03	1.99E+05	1.99E+05
K-40	1.48E-12	2.29E+01	1.66E-02	1.66E-02	3.00E+04	3.00E+04
Ca-45	4.25E-03	2.63E+00	1.92E-03	9.75E-04	2.60E+05	5.13E+05
Sc-46	6.37E-03	5.48E+00	4.00E-03	1.26E-03	1.25E+05	3.97E+05
Ti-44	3.16E-05	2.75E+01	1.57E-02	1.56E-02	3.19E+04	3.20E+04
V-48	4.27E-02	7.33E+00	5.35E-03	3.43E-04	9.34E+04	1.46E+05
Cr-51	2.50E-02	1.43E-01	1.04E-04	1.14E-05	4.79E+06	4.37E+07
Mn-54	2.22E-03	2.87E+00	1.85E-03	1.34E-03	2.57E+05	3.74E+05
Fe-55	7.03E-04	1.23E+00	8.98E-04	7.92E-04	5.57E+05	6.31E+05
Fe-59	1.56E-02	8.62E+00	4.63E-03	8.46E-04	1.03E+05	5.91E+05
Co-58	9.79E-03	3.77E+00	2.02E-03	5.50E-04	2.47E+05	9.09E+05
Co-60	3.80E-04	1.27E+01	9.37E-03	9.06E-03	5.38E+04	5.76E+04
Ni-63	1.98E-05	5.63E-01	4.11E-04	4.10E-04	1.22E+06	1.22E+06
Zn-65	2.84E-03	1.46E+01	1.07E-02	8.84E-03	4.69E+04	7.54E+04
Ge-68	2.41E-03	4.77E+00	3.46E-03	2.37E-03	1.44E+05	2.10E+05
Se-75	5.79E-03	9.66E+00	7.05E-03	2.93E-03	7.09E+04	1.70E+05
Rb-86	3.71E-02	1.04E+01	7.58E-03	5.51E-04	6.59E+04	9.02E+05
Sr-89	1.37E-02	9.51E+00	6.94E-03	1.38E-03	7.20E+04	3.63E+05
Sr-90	6.52E-05	1.63E+02	7.52E-02	7.43E-02	6.65E+03	6.73E+03
Y-90	2.60E-01	9.00E+00	7.27E-03	7.06E-05	8.88E+04	8.53E+06
Y-91	1.19E-02	5.77E+00	5.40E-03	1.47E-03	7.81E+04	2.41E+05
Zr-93	1.24E-09	4.11E+00	3.00E-03	3.00E-03	1.67E+05	1.67E+05
Zr-95	1.08E-02	3.56E+00	2.60E-03	6.48E-04	1.92E+05	7.73E+05
Nb-94	9.35E-09	6.44E+00	4.70E-03	4.70E-03	1.06E+05	1.06E+05
Nb-95	1.07E-02	2.18E+00	1.59E-03	2.21E-04	3.14E+05	2.26E+06
Mo-99	2.57E-01	2.24E+00	1.64E-03	1.78E-06	3.09E+05	2.81E+07
Tc-99	6.91E-09	2.38E+00	1.74E-03	1.74E-03	2.88E+05	2.88E+05
Ru-103	1.78E-02	2.72E+00	1.99E-03	3.09E-04	2.57E+05	1.62E+06
Ru/Rh-106	1.58E-03	2.59E+01	1.89E-02	1.37E-02	2.64E+04	3.65E+04
Ag-110m	2.77E-03	1.03E+01	7.52E-03	4.73E-03	6.65E+04	1.06E+05
Cd-109	1.49E-03	7.40E+00	5.40E-03	4.17E-03	9.26E+04	1.20E+05
Cd-113m	1.40E-04	8.51E+01	6.21E-02	6.08E-02	8.05E+03	8.29E+03
In-114m	1.40E-02	1.51E+01	1.10E-02	2.14E-03	4.54E+04	2.33E+05
Sn-113	8.02E-03	2.73E+00	1.99E-03	8.00E-04	2.51E+05	6.20E+05
Sn-123	5.36E-03	7.77E+00	5.67E-03	2.49E-03	8.82E+04	2.01E+05
Sn-125	7.16E-02	1.14E+01	8.32E-03	3.17E-04	6.01E+04	1.58E+05
Sn-126	6.25E-09	1.77E+01	1.29E-02	1.29E-02	3.87E+04	3.87E+04
Sb-124	1.15E-02	9.40E+00	6.86E-03	1.61E-03	7.29E+04	3.11E+05
Sb-126	5.59E-02	9.10E+00	6.64E-03	3.26E-04	7.53E+04	1.54E+06

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Table 4-1. DRLs Associated with a Total Effective Dose Equivalent of 0.5 rem Resulting from 1 Year of Ingestion

			Normalized DRLs mrem per pCi/L (TEDE)		DRLs (pCi/L)	
Radionuclide	Radioactive Decay Constant 1/d	DCF mrem/uCi	Without Radioactive Decay	With Radioactive Decay Only	Without Radioactive Decay	With Radioactive Decay Only
Sb-127	1.60E-01	6.10E+00	4.51E-03	6.87E-05	1.11E+05	7.28E+06
Te-127	1.70E+00	6.25E-01	4.56E-04	7.02E-07	1.10E+06	7.12E+08
Te-129	1.43E+01	2.33E-01	1.70E-04	3.26E-08	2.94E+06	1.53E+10
Te-129m	2.08E-02	1.10E+01	8.03E-03	1.07E-03	6.23E+04	4.68E+05
Te-131m	5.55E-01	7.22E+00	5.27E-03	2.60E-05	9.49E+04	1.92E+07
Te/I-132	2.13E-01	1.41E+01	1.03E-02	1.32E-04	4.86E+04	3.75E+06
I-125	1.15E-02	5.70E+01	4.16E-02	9.76E-03	1.20E+04	5.12E+04
I-129	1.21E-10	3.92E+02	2.86E-01	2.86E-01	1.75E+03	1.75E+03
I-131	8.82E-02	8.07E+01	5.89E-02	1.87E-03	8.49E+03	2.67E+05
Cs-134	9.20E-04	7.11E+01	5.19E-02	4.41E-02	9.63E+03	1.13E+04
Cs-136	5.29E-02	1.14E+01	8.32E-03	4.31E-04	6.01E+04	1.16E+06
Cs/Ba-137	8.33E-05	5.03E+01	3.67E-02	3.63E-02	1.36E+04	1.38E+04
Ba-133	1.77E-04	5.66E+00	4.13E-03	4.00E-03	1.21E+05	1.25E+05
Ba-140	5.44E-02	9.62E+00	7.02E-03	3.54E-04	7.12E+04	1.41E+06
La-140	4.13E-01	7.46E+00	5.45E-03	3.82E-05	9.16E+04	1.38E+07
Ce-141	2.13E-02	2.63E+00	1.92E-03	2.47E-04	2.60E+05	2.03E+06
Ce-143	5.04E-01	4.15E+00	3.03E-03	1.65E-05	1.65E+05	3.04E+07
Ce/Pr-144	2.44E-03	1.94E+01	1.42E-02	9.38E-03	3.53E+04	5.33E+04
Nd-147	6.31E-02	4.00E+00	2.92E-03	1.27E-04	1.71E+05	3.94E+06
Pm-145	1.07E-04	4.29E-01	3.13E-04	3.07E-04	1.60E+06	1.63E+06
Pm-147	7.23E-04	9.66E-01	7.05E-04	6.20E-04	7.09E+05	8.07E+05
Pm-148	3.13E-01	3.68E+00	2.60E-03	2.35E-05	1.88E+05	2.13E+07
Pm-151	5.88E-01	2.71E+00	1.98E-03	9.29E-06	2.53E+05	5.41E+07
Sm-151	2.11E-05	3.63E-01	2.65E-04	2.64E-04	1.89E+06	1.89E+06
Eu-152	1.42E-04	5.07E+00	3.70E-03	3.61E-03	1.35E+05	1.39E+05
Eu-154	2.16E-04	7.55E+00	5.51E-03	5.30E-03	9.07E+04	9.43E+04
Eu-155	3.63E-04	1.21E+00	8.83E-04	8.24E-04	5.66E+05	6.07E+05
Gd-153	2.88E-03	1.03E+00	7.52E-04	4.87E-04	6.65E+05	1.07E+06
Tb-160	9.59E-03	5.96E+00	4.35E-03	1.21E-03	1.15E+05	4.15E+05
Ho-166m	1.58E-06	7.33E+00	5.35E-03	5.35E-03	9.34E+04	9.35E+04
Tm-170	5.39E-03	4.89E+00	3.57E-03	1.56E-03	1.40E+05	3.20E+05
Yb-169	2.17E-02	2.63E+00	1.92E-03	2.42E-04	2.60E+05	2.06E+06
Hf-181	1.63E-02	4.15E+00	3.03E-03	5.68E-04	1.65E+05	8.84E+05
Ta-182	8.03E-03	5.70E+00	4.16E-03	1.58E-03	1.20E+05	2.97E+05
W-187	8.98E-01	2.33E+00	1.70E-03	8.70E-06	2.94E+05	7.47E+07
Ir-192	9.36E-03	5.07E+00	3.70E-03	1.05E-03	1.35E+05	4.77E+05
Au-198	2.57E-01	3.61E+00	2.78E-03	2.96E-05	1.80E+05	1.69E+07
Hg-203	1.49E-02	7.07E+00	5.16E-03	9.45E-04	9.68E+04	5.29E+05
Tl-204	5.02E-04	4.40E+00	3.21E-03	2.93E-03	1.56E+05	1.70E+05
Pb-210	8.51E-05	2.56E+03	1.86E+00	1.85E+00	2.85E+02	2.70E+02
Bi-207	4.99E-05	6.70E+00	3.43E-03	3.40E-03	1.46E+05	1.47E+05
Bi-210	1.38E-01	4.65E+00	3.54E-03	7.03E-05	1.41E+05	7.11E+06
Po-210	5.01E-03	4.48E+03	3.27E+00	1.50E+00	1.53E+02	3.33E+02
Ra-226	1.19E-06	1.04E+03	1.59E-01	7.59E-01	6.59E+02	6.59E+02
Ac-227	6.72E-05	1.19E+03	8.69E-01	8.55E-01	5.76E+02	5.85E+02
Th-227	3.70E-02	3.34E+01	2.44E-02	1.81E-03	2.05E+04	2.77E+05
U-235	2.70E-12	1.73E+02	1.26E-01	1.26E-01	3.96E+03	3.96E+03

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Table 4-1. DRLs Associated with a Total Effective Dose Equivalent of 0.5 rem Resulting from 1 Year of Ingestion

			Normalized DRLs mrem per pCi/L (TEDE)		DRLs (pCi/L)	
Radionuclide	Radioactive Decay Constant 1/d	DCF mrem/uCi	Without Radioactive Decay	With Radioactive Decay Only	Without Radioactive Decay	With Radioactive Decay Only
U-238	4.25E-13	1.65E+02	1.20E-01	1.20E-01	4.15E+03	4.15E+03
Np-237	8.87E-10	3.96E+02	2.89E-01	2.89E-01	1.73E+03	1.73E+03
Np-239	2.94E-01	2.95E+00	2.15E-03	2.01E-05	2.32E+05	2.49E+07
Pu-236	6.66E-04	3.22E+02	2.35E-01	2.09E-01	2.13E+03	2.40E+03
Pu-238	2.16E-05	8.44E+02	6.16E-01	6.14E-01	8.12E+02	8.15E+02
Pu-239	7.89E-08	9.29E+02	6.78E-01	6.78E-01	7.37E+02	7.37E+02
Pu-240	2.90E-07	9.29E+02	6.78E-01	6.78E-01	7.37E+02	7.37E+02
Pu-241	1.32E-04	1.76E+01	1.28E-02	1.25E-02	3.89E+04	3.99E+04
Pu-242	5.04E-09	8.81E+02	6.43E-01	6.43E-01	7.77E+02	7.77E+02
Am-241	4.39E-06	7.55E+02	5.51E-01	5.51E-01	9.07E+02	9.08E+02
Am-242m	1.25E-05	7.07E+02	5.16E-01	5.15E-01	9.69E+02	9.71E+02
Am-243	2.57E-07	7.51E+02	5.48E-01	5.48E-01	9.12E+02	9.12E+02
Cm-242	4.26E-03	4.33E+01	3.16E-02	1.60E-02	1.58E+04	3.12E+04
Cm-243	6.66E-05	5.51E+02	4.02E-01	3.97E-01	1.24E+03	1.26E+03
Cm-244	1.05E-04	4.55E+02	3.32E-01	3.26E-01	1.51E+03	1.53E+03
Cm-245	2.23E-07	7.70E+02	5.62E-01	5.62E-01	8.90E+02	8.90E+02
Cm-246	4.01E-07	7.66E+02	5.59E-01	5.59E-01	8.94E+02	8.94E+02
Cf-252	7.19E-04	3.52E+02	2.57E-01	2.26E-01	1.95E+03	2.21E+03

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Co-60	3.60E-04	1.27E+01	9.27E-03	8.69E-03	5.39E+04	5.76E+04
Ni-63	1.98E-05	5.63E-01	4.11E-04	4.10E-04	1.22E+06	1.22E+06
Zn-65	2.84E-03	1.46E+01	1.07E-02	6.64E-03	4.69E+04	7.54E+04
Ge-68	2.41E-03	4.77E+00	3.48E-03	2.32E-03	1.44E+05	2.16E+05
Se-75	5.79E-03	9.66E+00	7.05E-03	2.93E-03	7.09E+04	1.70E+05
Rb-86	3.71E-02	1.04E+01	7.59E-03	5.61E-04	6.59E+04	8.92E+05
	1.37E-02	9.51E+00	6.94E-03	1.38E-03		
Sr-90	6.52E-05	1.03E+02	7.52E-02	7.43E-02	6.65E+03	6.73E+03
	2.60E-01	9.96E+00	7.27E-03	7.66E-05	6.88E+04	6.53E+06
Y-91	1.18E-02	8.77E+00	6.40E-03	1.47E-03	7.81E+04	3.41E+05
Zr-93	1.24E-09	4.11E+00	3.00E-03	3.00E-03	1.67E+05	1.67E+05
Zr-95	1.08E-02	3.56E+00	2.60E-03	6.46E-04	1.92E+05	7.73E+05
Nb-94	9.35E-08	6.44E+00	4.70E-03	4.70E-03	1.06E+05	1.06E+05
Nb-95	1.97E-02	2.18E+00	1.59E-03	2.21E-04	3.14E+05	2.26E+06
Mo-99	2.52E-01	2.24E+00	1.64E-03	1.78E-05	3.06E+05	2.81E+07
Tc-99	8.91E-09	2.38E+00	1.74E-03	1.74E-03	2.88E+05	2.88E+05
Ru-103	1.76E-02	2.72E+00	1.99E-03	3.09E-04	2.52E+05	1.62E+06
Ru/Rh-106	1.88E-03	2.59E+01	1.89E-02	1.37E-02	2.64E+04	3.65E+04
Ag-110m	2.77E-03	1.03E+01	7.52E-03	4.73E-03	6.65E+04	1.06E+05
Cd-109	1.49E-03	7.40E+00	5.40E-03	4.17E-03	9.26E+04	1.20E+05
Cd-113m	1.40E-04	8.51E+01	6.21E-02	6.06E-02	8.05E+03	8.26E+03
In-114m	1.40E-02	1.51E+01	1.10E-02	2.14E-03	4.54E+04	2.33E+05
Sn-113	6.02E-03	2.73E+00	1.99E-03	8.06E-04	2.51E+05	6.20E+05
Sn-123	5.36E-03	7.77E+00	5.67E-03	2.49E-03	8.82E+04	2.01E+05

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EPA's existing emergency response levels – the CERCLA Program's Removal Action Levels (RALs) – are the MCLs.

See, e.g., OSWER, Revised Superfund Removal Action Levels," 17 September 2008, from Deborah Dietrich, Director of Emergency Management, to Regional Superfund Division Directors and Regional Removal Managers

(Note: CBG 2008 study, "Proposed Relaxation of EPA Drinking Water Standards for Radioactivity," compared the proposed PAGs to the RALs that were in effect prior to the above directive.)

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EPA Maximum Concentration Limits (MCLs)/ Response Action Levels (RALs) for Beta and Photon Emitters in Drinking Water

Source: EPA Directive 9283.1-14,Use of Uranium Drinking Water Standards under 40 CFR 141 and 40 CFR 192 as Remediation Goals for Groundwater at CERLCA Sites, 6 November 2001

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Attachment B: List of Radionuclides addressed by 4 mrem/yr man-made beta particles and photon emitters MCL standard[5]

Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	
H-3	20,000	Sr-85 m	20,000	Sb-124	60	Er-169	300
Be-7	6,000	Sr-85	900	Sb-125	300	Er-171	300
C-14	2,000	Sr-89	20	Te-125m	600	Tm-170	100
F-18	2,000	Sr-90	8	Te-127	900	Tm-171	1,000
Na-22	400	Sr-91	200	Te-127m	200	Yb-175	300
Na-24	600	Sr-92	200	Te-129	2,000	Lu-177	300
Si-31	3,000	Y-90	60	Te-129m	90	Hf-181	200
P-32	30	Y-91	90	Te-131m	200	Ta-182	100
S-35 inorg	500	Y-91m	9,000	Te-132	90	W-181	1,000
Cl-36	700	Y-92	200	I-126	3	W-185	300
Cl-38	1,000	Y-93	90	I-129	1	W-187	200
K-42	900	Zr-93	2,000	I-131	3	Re-186	300
Ca-45	10	Zr-95	200	I-132	90	Re-187	9,000
Ca-47	80	Zr-97	60	I-133	10	Re-188	200
Sc-46	100	Nb-93m	1,000	I-134	100	Os-185	200
Sc-47	300	Nb-95	300	I-135	30	Os-191	600
Sc-48	80	Nb-97	3,000	Cs-131	20,000	Os-191m	9,000
V-48	90	Mo-99	600	Cs-134	80	Os-193	200
Cr-51	6,000	Tc-96	300	Cs-134m	20,000	Ir-190	600
Mn-52	90	Tc-96m	30,000	Cs-135	900	Ir-192	100
Mn-54	300	Tc-97	6,000	Cs-136	800	Ir-194	90
Mn-56	300	Tc-97m	1,000	Cs-137	200	Pt-191	300
Fe-55	2,000	Tc-99	900	Ba-131	600	Pt-193	3,000
Fe-59	200	Tc-99m	20,000	Ba-140	90	Pt-193m	3,000
Co-57	1,000	Ru-97	1,000	La-140	60	Pt-197	300
Co-58	300	Ru-103	200	Ce-141	300	Pt-197m	3,000
Co-58m	9000	Ru-105	200	Ce-143	100	Au-196	600
Co-60	100	Ru-106	30	Ce-144	30	Au-198	100
Ni-59	300	Rh-103m	30,000	Pr-142	90	Au-199	600
Ni-63	50	Rh-105	300	Pr-143	100	Hg-197	900
Ni-65	300	Pd-103	900	Nd-147	200	Hg-197m	600
Cu-64	900	Pd-109	300	Nd-149	900	Hg-203	60
Zn-65	300	Ag-105	300	Pm-147	600	Tl-200	1,000
Zn-69	6,000	Ag-110m	90	Pm-149	100	Tl-201	900
Zn-69m	200	Ag-111	100	Sm-151	1,000	Tl-202	300
Ga-72	100	Cd-109	600	Sm-153	200	Tl-204	300

[5]For those isotopes where an MCL is calculated, concentration values were rounded using the same format as EPA guidance for the 1976 MCL rulemaking.

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Attachment B: List of Radionuclides addressed by 4 mrem/yr man-made beta particles and photon emitters MCL standard[5]

le	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide
	20,000	Sr-85 m	20,000	Sb-124	60	Er-169
	6,000	Sr-85	900	Sb-125	300	Er-171
	2,000	Sr-89	20	Te-125m	600	Tm-170
	2,000	Sr-90	8	Te-127	900	Tm-171
	400	Sr-91	200	Te-127m	200	Yb-175
	600	Sr-92	200	Te-129	2,000	Lu-177
	3,000	Y-90	60	Te-129m	90	Hf-181
	30	Y-91	90	Te-131m	200	Ta-182
	500	Y-91m	9,000	Te-132	90	W-181
	700	Y-92	200	I-126	3	W-185
	1,000	Y-93	90	I-129	1	W-187
	900	Zr-93	2,000	I-131	3	Re-186
	10	Zr-95	200	I-132	90	Re-187
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

A Comparison of the Proposed Water PAGs and Longstanding MCLs

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PROPOSED RELAXATION OF EPA DRINKING WATER STANDARDS

Proposed Protective Action Guide [PAG]
vs. Current Maximum Concentration Level [MCL]

Radionuclide	PROPOSED PAG (w/o Decay)*	CURRENT Maximum Concentration Level (MCL)*	RATIO (Factor by which permissible concentration of radioactivity in drinking water is proposed to increase)
H-3	4,420,000	20,000	221
C-14	319,000	2,000	160
Na-22	58,000	400	145
P-32	77,100	30	2,570
S-35	239,000	500	478
Cl-36	199,000	700	284
Ca-45	260,000	10	26,000
Sc-46	125,000	100	1,250
V-48	93,400	90	1,040
Cr-51	4,790,000	6,000	798
Mn-54	257,000	300	857
Fe-55	557,000	2,000	279
Fe-59	103,000	200	515
Co-58	247,000	300	823
Co-60	53,900	100	539
Ni-63	1,220,000	50	24,400
Zn-65	46,900	300	156
Se-75	70,900	900	78
Rb-86	65,900	600	110
Sr-89	72,000	20	3,600
Sr-90	6,650	8	831
Y-90	68,800	60	1,150
Y-91	78,100	90	868
Zr-93	167,000	2,000	84
Zr-95	192,000	200	960
Nb-95	314,000	300	1,050
Mo-99	306,000	600	510
Tc-99	288,000	900	320
Ru-103	252,000	200	1,260
Ag-110m	66,500	90	739
Cd-109	92,600	600	154
In-114m	45,400	60	757
Sn-113	251,000	300	837
Sn-125	60,100	60	1,000
Sb-124	72,900	60	1,220
Te-127	1,100,000	900	1,220

*Units = picoCuries per Liter (pCi/L)

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PROPOSED RELAXATION OF EPA DRINKING WATER STANDARDS

Proposed Protective Action Guide [PAG] vs. Current Maximum Concentration Level [MCL]

Radionuclide	PROPOSED PAG (w/o Decay)*	CURRENT Maximum Concentration Level (MCL)*	RATIO (Factor by which permissible concentration of radioactivity in drinking water is proposed to increase)
Te-129	2,940,000	2,000	1,470
Te-129m	62,300	90	692
Te-132	48,600	90	540
I-132	48,600	90	540
I-129	1,750	1	1,750
I-131	8,490	3	2,830
Cs-136	60,100	800	75
Cs-137	13,600	200	68
Ba-140	71,200	90	791
La-140	91,600	60	1,530
Ce-141	260,000	300	867
Ce-143	165,000	100	1,650
Ce-144	35,300	30	1,180
Nd-147	171,000	200	855
Pm-149	186,000	100	1,860
Sm-151	1,890,000	1,000	1,890
Eu-152	135,000	200	675
Eu-154	90,700	60	1,510
Eu-155	566,000	600	943
Gd-153	665,000	600	1,110
Tb-160	115,000	100	1,150
Tm-170	140,000	100	1,400
Hf-181	165,000	200	825
Ta-182	120,000	100	1,200
W-187	294,000	200	1,470
Ir-192	135,000	100	1,350
Au-198	116,900,000	100	1,170,000
Hg-203	96,900	60	1,620
Tl-204	156,000	300	520
Bi-207	146,000	200	730

*Units = picoCuries per Liter (pCi/L)

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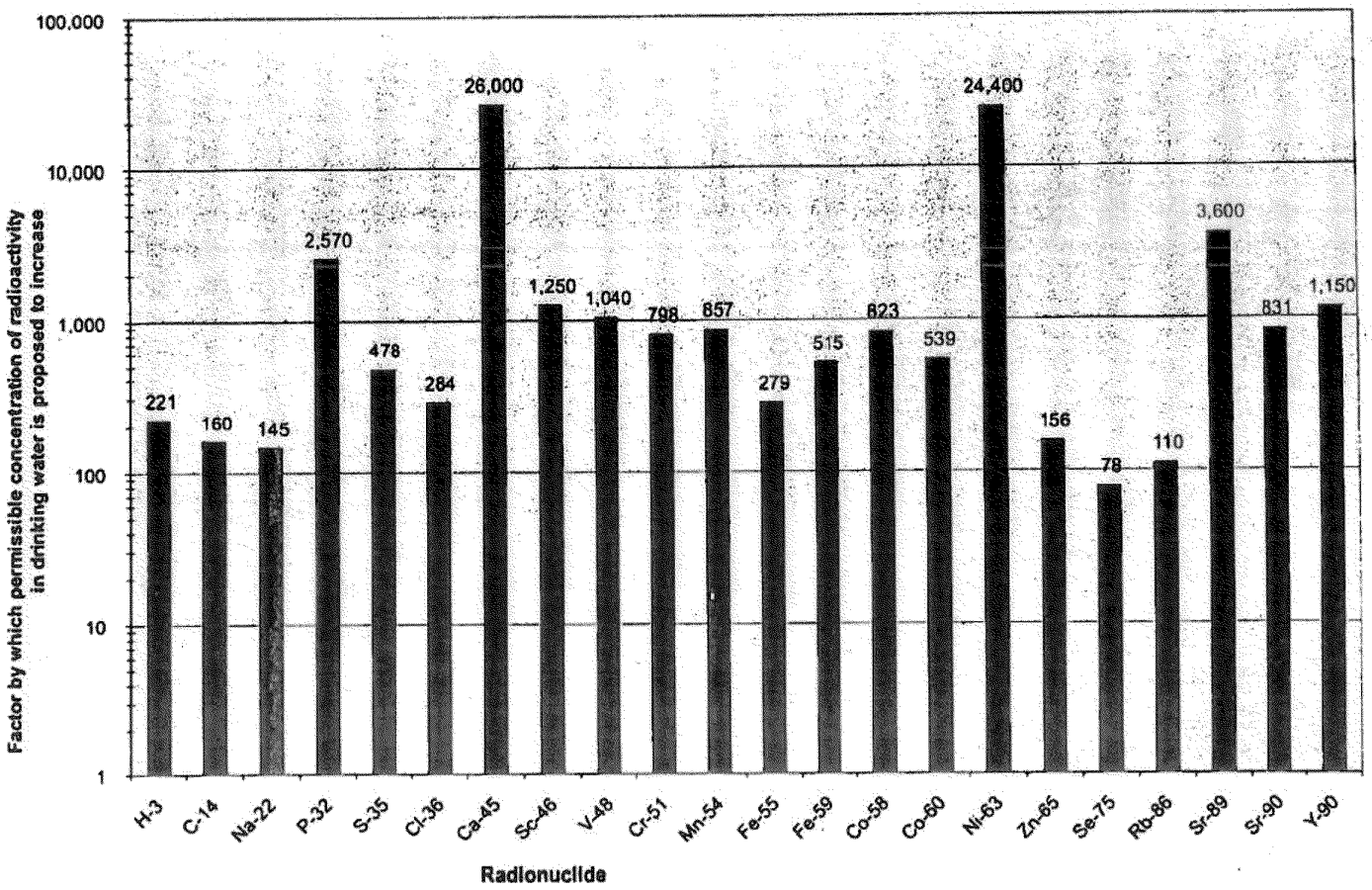
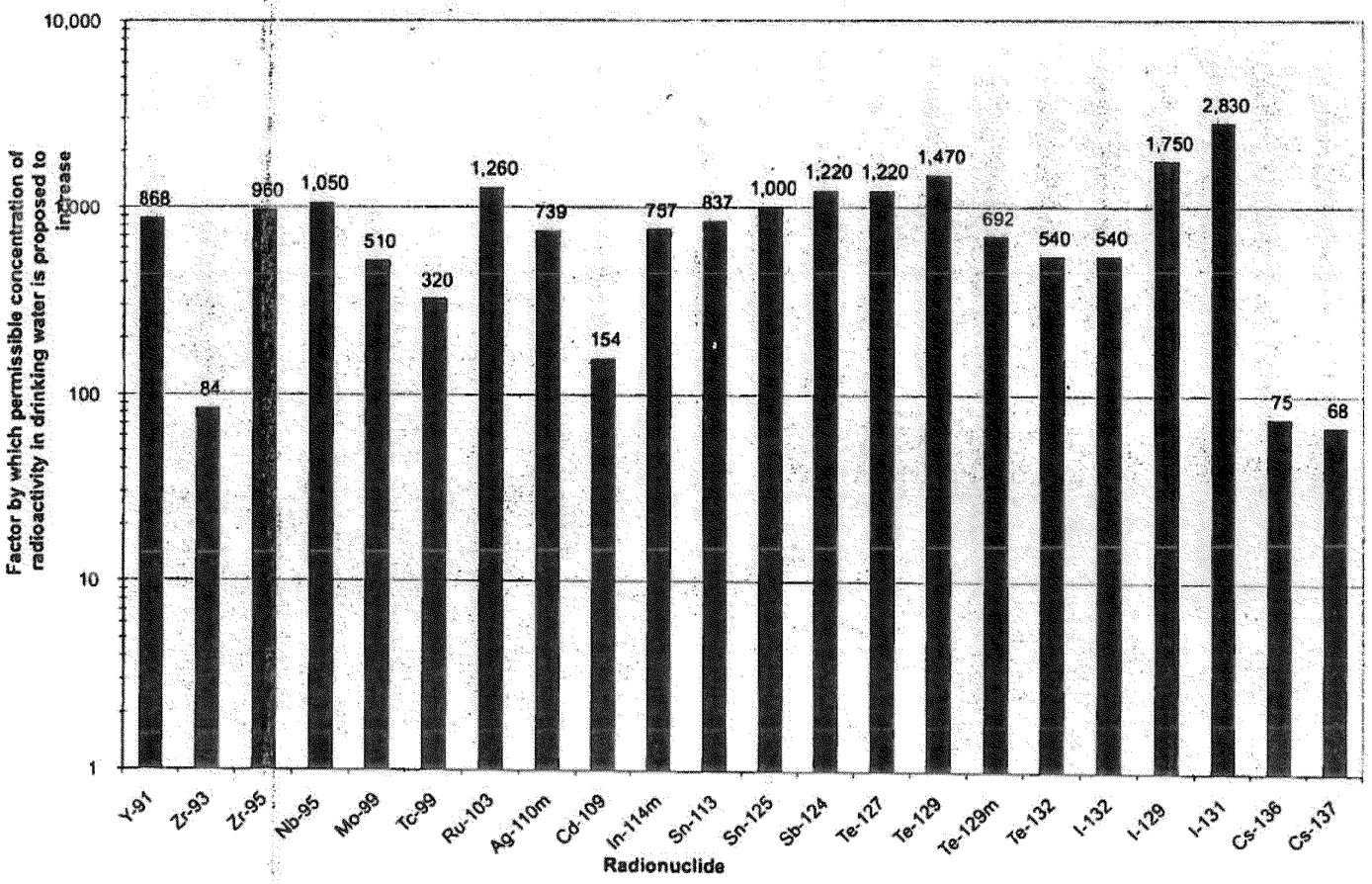
Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase
Proposed PAG (w/o Decay) vs. Current Maximum Concentration Level (MCL)



Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase

Proposed PAG (w/o Decay) vs. Current Maximum Concentration Level (MCL)



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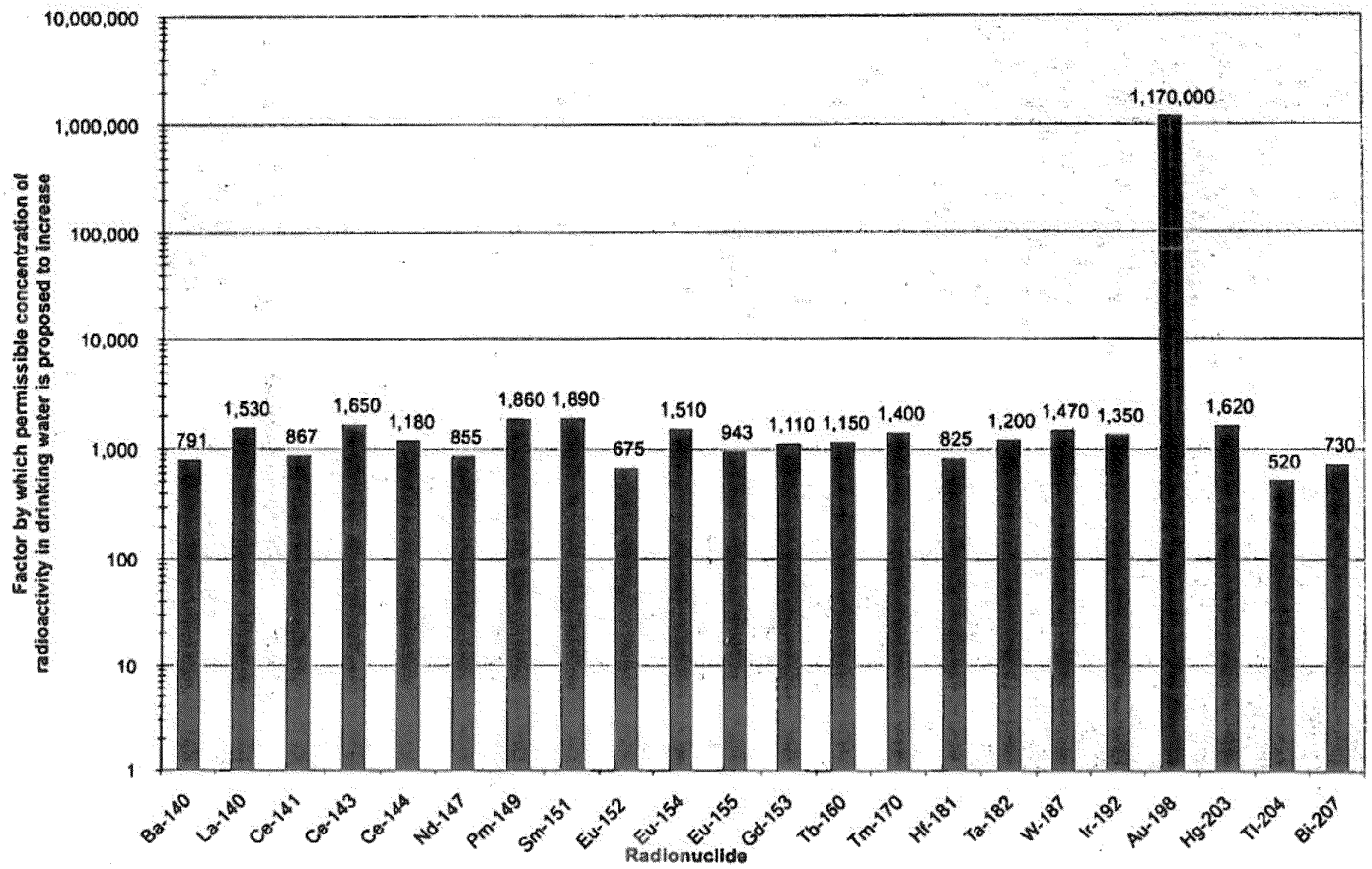
Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase

Proposed PAG (w/o Decay) vs. Current Maximum Concentration Level (MCL)



PAGs w/ decay compared to MCLs/RALs

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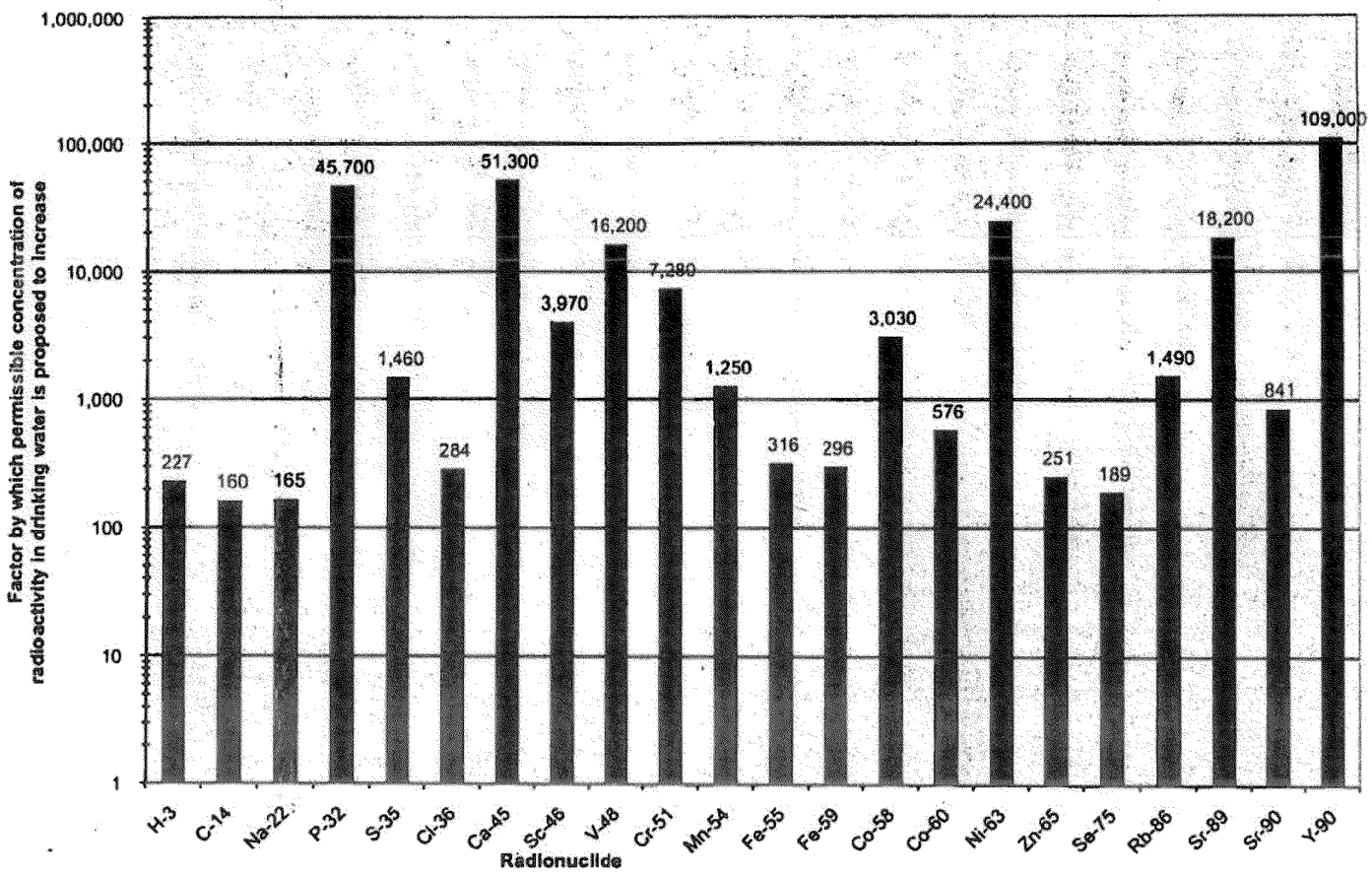
Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase

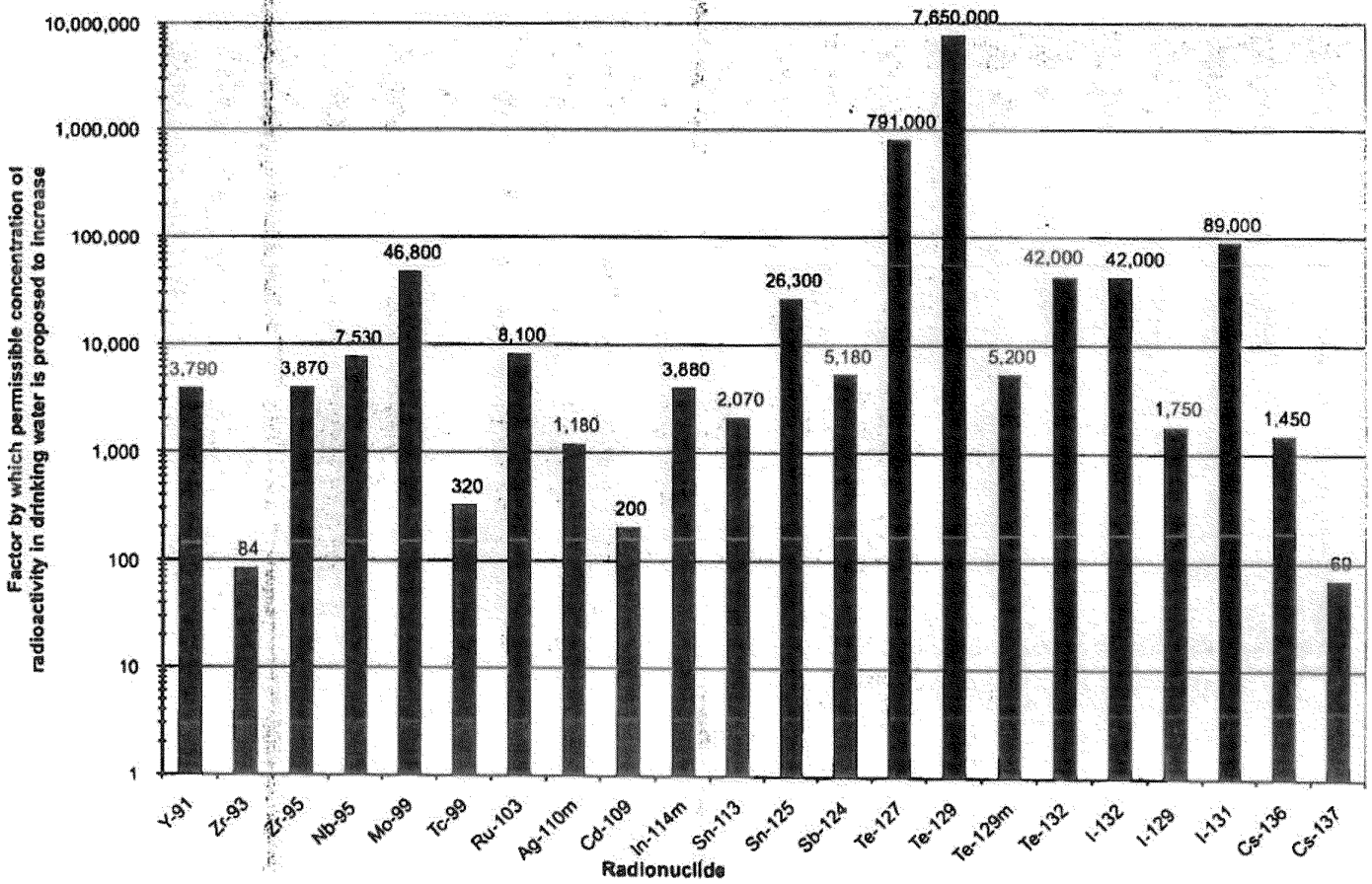
FIGURE 2: Proposed DRL (with Decay) vs. Current Maximum Concentration Level (MCL)



ED_001057C_T3_00571232

Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase

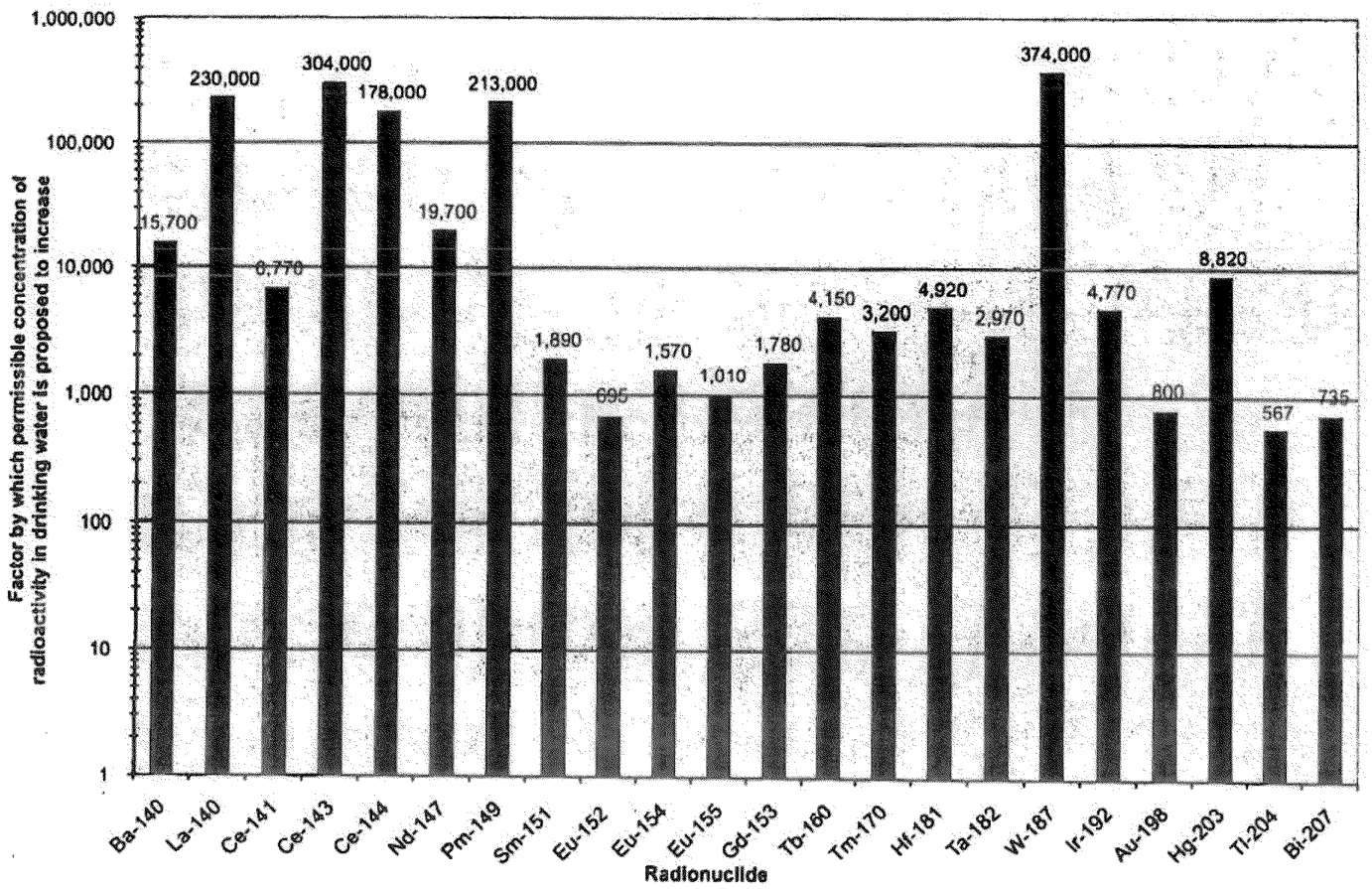
FIGURE 2: Proposed DRL (with Decay) vs. Current Maximum Concentration Level (MCL)



ED_001057C_T3_00571232

Factor by which Allowable Radioactivity in Drinking Water is Proposed to Increase

FIGURE 2: Proposed DRL (with Decay) vs. Current Maximum Concentration Level (MCL)



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Forcing the public to drink water contaminated at orders of magnitude above Safe Drinking Water Levels, for a year or more after an event, is contrary to longstanding EPA practice, which is to provide alternative drinking water supplies or require cleanup of contaminated supplies.

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Optimization in the EPA PAG

In addition to dramatically weakening drinking water protections, the new PAGs would, as we had warned, adopt "optimization" for all long-term cleanup under the PAGs—permitting risks to the public orders of magnitude outside the risk range.

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CANCER RISKS* FROM EPA/ORIA PROPOSED PROTECTIVE ACTION GUIDE "OPTIMIZATION" PROCESS FOR LONG TERM CLEANUP

Cleanup Benchmark	≈ equivalent # of Chest X-rays		Risk of Cancer (exponential)	=1 Cancer Per X People Exposed	Factor by Which EPA Acceptable Risk Range Is Exceeded
	Per Year	Over 30 Years			
100 mrem/year	17	500	3.4×10^{-3}	1 in 300	34-3,400
500 mrem/year	83	2,500	1.7×10^{-2}	1 in 60	170-17,000
1,000 mrem/year	170	5,000	3.4×10^{-2}	1 in 30	340-34,000
10,000 mrem/year	1,700	50,000	3.4×10^{-1}	1 in 3	3,400-340,000

* Based on thirty-year exposure and most recent cancer risk estimates for ionizing radiation from the National Academy of Sciences

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Issue 3: 100 millirem guidance

ORIA has been pushing to issue new guidance that would generically declare that EPA finds doses of 100 mRem/yr. acceptable—even though EPA has historically declared 100 mRem/yr "non-protective" and it is far outside the risk range.

100 mRem/yr over 30 years is ~3.4×10^{-3} risk, 34 times the upper end of the risk range. Over 70 years of exposure, it is 8×10^{-3} risk, 80 times the upper end of the risk range.

EPA has always opposed dose limits and associated risks this high.

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For example, then-Administrator Browner wrote to then-NRC Chair Shirley Ann Jackson on 7 February 1997 opposing a proposed license termination/cleanup rule at 30 mRem/year, calling it not "adequately protective of human health and the environment."

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On April 21, 1997, EPA issued a statement on the NRC's Rule on Radiological Criteria for License Termination, stating "unequivocally" that EPA cannot find 75, 80, or 100 mRem/yr "sufficiently protective." It would "not adequately protect ... the health of our citizens."

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EPA stated "that a 100 mrem dose would result in a risk that is seven times higher than would be permitted for other environmental pollutants under the Nation's laws governing the cleanup of contaminated sites."

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And EPA concluded,

"To put it bluntly, radiation should not be treated as a privileged pollutant."

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Were EPA to reverse decades of consistent policy and now permit radiation risks to the public exceeding those of any other carcinogen, well outside EPA's historic risk range, it would undermine EPA's entire regulatory structure. Every polluter, every owner of contaminated property, would insist on EPA relaxing its rules for non-radioactive contaminants as well.

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Issue 4: EPA Rejection of NAS Radiation Recommendations

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EPA requested, and helped fund, the latest NAS study on health risks from ionizing radiation (BEIR VII).

BEIR VII concluded that cancer incidence per unit dose was about 35% higher than previously assumed, including by EPA. EPA relied on 1991 guidance, based on an older NAS BEIR study, for its estimate of 8.46 cancers per 10,000 person-rem. NAS now recommends using 11.41.

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ORIA is preparing a revised "Blue Book" supposedly to incorporate the new NAS findings. However, in the great majority of cases, ORIA proposes in fact lowering the risk estimates identified by the National Academy.

What follows is a chart from the draft Blue Book showing ORIA's own comparison of its proposed values and those found by NAS.

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Table 3-14: Comparison of EPA and BEIR VII LAR calculations

Site	Sex	Incidence[1] EPA	Incidence[1] BEIR VII	Mortality[1] EPA	Mortality[1] BEIR VII
Stomach	M	31	34	16	19
	F	40	43	22	25
Colon	M	142	160	66	76
	F	90	96	40	46
Liver	M	28	27	21	20
	F	13	12	12	11
Lung	M	125	140	117	140
	F	272	300	227	270
Breast	F	281	310	121	73
Prostate	M	42	44	8	9
Uterus	F	17	20	4	5
Ovary	F	32	40	22	24
Bladder	M	94	98	20	22
	F	87	94	25	28
Thyroid	M	22	21	3	None
	F	110	100	8	None
Residual	M	194	290	91	120
	F	201	290	98	132
Kidney	M	24	None	8	None
	F	20	None	7	None
Bone	M	2	None	1	None
	F	2	None	1	None
Solid cancers	M	703	800	350	410
	F	1170	1310	585	610
Leukemia	M	81	100	56	69
	F	[illegible]	[illegible]	[illegible]	[illegible]
Total	M	785	900	406	479
	F	1230	1382	628	662

[1] Cases or deaths per 10,000 person-Gy.

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EPA during the previous administration was frequently accused of politicizing science. It is hard to understand how EPA can ask the National Academy of Sciences to prepare the seminal update on radiation risk, then reject its findings, with the rejections in the great majority of cases on the side of weakening protections.

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Also, NAS found evidence that X-rays (and low-energy betas like those from tritium) were on the order of 2-3 times more harmful per unit dose than its estimates for regular gamma, writing:

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"It may be desirable to increase risk estimates in this report by a factor of 2 or 3 for the purpose of estimating risks from low-dose X-ray exposure."

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Yet, the Radiation Advisory Committee (RAC) reviewing the draft Blue Book recommended that EPA continue to use the outdated, too-low risk figures it had been using for X-rays and low-energy betas and delay for an extended period any correction.

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The Science Advisory Board, in its review of RAC's review, was troubled by this. One SAB reviewer wrote: "Should [EPA continue to] use an RBE [Relative Biological Effectiveness] of 1 knowing that the real RBE is in excess of 1?"

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This is an issue of great importance to public health, given the explosion in public exposures from CT scans. If the true risk is 2-3 times greater than present estimates, a very large number of cancers might be created by such exposures and the failure of EPA to notify the public and practitioners of the increased risk would be troubling.

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Example: a GI series CT scan—often routinely prescribed for matters as potentially routine as microscopic traces of blood in the urine—can result in a dose of ~5 Rem. Based on the NAS findings, on average, 1 in 90 to 1 in 60 people who get such a test may get a cancer from it. Surely, doctors and the public should be allowed to know this, so appropriate risk benefit decisions can be made. EPA's refusal to fix its official estimates in a timely fashion and to continue to use numbers that it knows may be 2-3 times too low can cause a great deal of public harm.

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Issue 5
Proposals to Allow Radioactive Waste to Be Disposed of in Sites Neither Licensed Nor Designed for Radioactive Waste

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"Low-level" radioactive waste (LLRW) is defined as all radioactive waste that is not irradiated reactor fuel or reprocessing residues, tailings, or certain other materials. LLRW long has been required to be disposed of in facilities licensed for such wastes and meeting special design and operational requirements for radioactive waste.

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Industry has desired to be permitted to dispose of radioactive wastes in facilities neither licensed nor designed for such wastes, because they would be cheaper.

During the previous administration, efforts were in the works to let such wastes go to non-radioactive waste facilities, such as RCRA Part C facilities and regular municipal landfills.

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This would be very troublesome. The sites are not designed to safely handle such wastes. They do not have the health physics personnel or training, the design features, the capability for monitoring groundwater and air emissions for radioactivity, nor the other special capacities required for radioactive waste disposal.

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Additionally, mixing chemical and radioactive wastes increases the risk in a multiplicative rather than just additive fashion. The presence of chelating compounds or organic complexing agents, for example, cause dramatic changes in the soil retention factor K_d, markedly increasing radionuclide migration rates. Placing radioactive wastes in a facility that also has chemical wastes can greatly increase the environmental impacts.

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In California, huge uproar has twice occurred when radioactive waste generators tried to slip such wastes into unlicensed sites, generally in low-income, minority areas. EJ controversies arose first at Buttonwillow and now Kettleman Hills, where already severely-impacted communities were to face the potential for radioactive waste as well coming in, to facilities not designed to safely handle it.

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Conclusion

We respectfully request:

1. Don't permit the EPA PAGs to be released with long-term cleanup standards outside EPA's risk range or drinking water PAGs greater than Safe Drinking Water levels.

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2. Push for the DHS-EPA dirty bomb PAGs to be revised, eliminating "optimization" and requiring cleanup consistent with the EPA risk range.
3. Block issuance of 100 mRem guidance, or any rad standard greater than the risk range.
4. Assure that the Blue Book does not relax radiation risk estimates below those recommended by NAS; immediately upgrade risks for X-rays and low-energy betas by 2-3.

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5. Do not allow radioactive waste to be disposed of anywhere other than a licensed radioactive waste site; e.g., don't let it go to RCRA C or municipal landfills.
6. Promptly release the records of internal and external critical comments on the PAGs.

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(An NGO submitted a FOIA in early June; ORIA promised full release by mid-September. Not a single document has been produced; the NGO has had to file a lawsuit trying to free up the documents. We are concerned that significant criticisms of the PAGs are being withheld both from the public and new senior agency management.)

7. Address the institutional problems within ORIA that led to these proposals to weaken protections in the first place.

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8. Keep communications lines open with our NGO community, as the problems we have identified here are not all-inclusive, but rather examples of larger problems.

Thank you.

ED_001057C_T3_00571232

Contact: Daniel Hirsch
Committee to Bridge the Gap
(831) 336-8003

An electronic version of this PowerPoint presentation is available at
http://www.committeetobridgethegap.org/pdf/110209Rad.ppt

The 5 August 2009 letter by organizations to EPA about these matters, and the attachments providing supporting information, is available at
http://www.committeetobridgethegap.org/pdf/080509LetterToEPA.pdf

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Errata: On slide 45, the PAG for Au-198, with decay, should be 16,900,000 pCi/L, and the factor by which it exceeds the MCL should be 169,000. On slides 38 and 41, the PAG for Au-198 without decay should be 180,000 pCi/L and the factor by which it exceeds the MCL should be 1800.

ED_001057C_T3_00571232

Subject: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 11/30/2010 18:27:53
To: "Diann Frantz" <Frantz.Diann@epamail.epa.gov>
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA "Perrin Alan" <perrin.alan@epa.gov>

Diann--- FYI. Mike wanted to check in with Gina McCarthy/our politicals in OAR on the timing of this. Stay tuned please--Jon
---
Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Mike Flynn

----- Original Message -----
From: Mike Flynn
Sent: 11/30/2010 05:49 PM EST
To: Gina McCarthy
Cc: Joseph Goffman; Jonathan Edwards
Subject: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
Gina,

Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (see below). I have a call into Debbie Dietrich to coordinate on timing and the cleanup discussion since OHS has been the Agency lead on the senior level rad exercises. Should we try to delay this meeting till after the Bob P meeting, or at least till after the AA prebrief?

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 11/30/2010 01:13 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 11/30/2010 01:01 PM

Subject: Fw: Update on PAGs

Jon,

Could you call me about this request?

Diann
564-2668
----- Forwarded by Diann Frantz/DC/USEPA/US on 11/30/2010 12:59 PM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

Subject: RE: Update on PAGs

Hi Diann and hope you had a great holiday

We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

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-----Original Message-----
From: Frantz.Diann@epamail.epa.gov [mailto:Frantz.Diann@epamail.epa.gov]
Sent: Tuesday, March 30, 2010 6:23 PM
To: Freedhoff, Michal
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann

Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Subject: Fw: Update on PAGs
From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 12/1/2010 11:04:43
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA

FYI

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Diann Frantz

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To: Jonathan Edwards
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To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

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Thanks
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Michal Ilana Freedhoff, Ph.D.
Policy Director
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2108 Rayburn House Office Building
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202-225-2836

Sign-up to receive e-updates from Rep. Markey at http://markey.house.gov/signup

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To: Freedhoff, Michal
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Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Subject: draft? OGC comments and my thoughts - updated 5/10
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
Submit Time: 5/10/2011 13:12:40

With Sue's helpful perspective and a detailed review of my emails from last fall, here are my updated thoughts about the recent OGC comments:

Ex. 5 - Deliberative Process

It's easiest to start with the Manual, where I made most of my responsive comments. Thanks!

Sara

PAG Manual OGC cmts Sara response 5-10-2011.doc PAG Manual OGC cmts Sara response 5-10-2011.doc PAG Manual draft FR OGC cmts Sara response 5-10-2011.docx PAG Manual draft FR OGC cmts Sara response 5-10-2011.docx

Subject: Finally -- Manual just needs a quick Kylie cleanup
To: kzirbel@endyna.com
Cc: siddhanti@endyna.com CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
Submit Time: 3/11/2011 19:22:29

Kylie,

If I could figure out the TOC and formatting, you know I would finish it up! If you can take a quick go at cleaning it up, (and recall this one does NOT have the latest glossary, since we've crossed versions) --- I am eternally grateful, and very ready for this day to be over.....

Have a great weekend,

Sara (cell Ex. 6 - Personal Privacy

DraftPAGManual Sara Markup Final 3-11-2011.doc DraftPAGManual Sara Markup Final 3-11-2011.doc

Submit Time: 12/1/2010 11:48:31
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
To: CN=Lisa Nanko/OU=DC/O=USEPA/C=US@EPA CN=Jim Knoy/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Fw: Update on PAGs

Here is Diann's email. I pasted the request here so that you don't have to dig much.

"We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?"

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322
----- Forwarded by Lee Veal/DC/USEPA/US on 12/01/2010 11:27 AM -----

From: Jonathan Edwards/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Date: 12/01/2010 11:04 AM

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To: Diann Frantz/DC/USEPA/US@EPA

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Policy Director
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2108 Rayburn House Office Building
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202-225-2836

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From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 12/1/2010 08:31:20
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA "Perrin Alan" <perrin.alan@epa.gov>

FYI

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Gina McCarthy

----- Original Message -----
From: Gina McCarthy
Sent: 11/30/2010 08:55 PM EST
To: Mike Flynn
Cc: Jonathan Edwards; Joseph Goffman
Subject: Re: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
Mike - Hard to know if they are open to a delay to allow us to better inform the discussion. We can certainly talk to them about our efforts to reshape the PAGs. It will be up to Deb and Bob P if they feel comfortable having someone talk to Markey's staff about the clean up issues at this point. The one thing I don't want is for his staff to think we are hiding. Since Markey is from neck of the woods, I can join if you want. I know they have not been kind to us in the recent past.

Mike Flynn---11/30/2010 05:49:11 PM---Gina, Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (

From: Mike Flynn/DC/USEPA/US
To: Gina McCarthy/DC/USEPA/US@EPA
Cc: Joseph Goffman/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 11/30/2010 05:49 PM
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Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (see below). I have a call into Debbie Dietrich to coordinate on timing and the cleanup discussion since OHS has been the Agency lead on the senior level rad exercises. Should we try to delay this meeting till after the Bob P meeting, or at least till after the AA prebrief?

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 11/30/2010 01:13 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 11/30/2010 01:01 PM

Subject: Fw: Update on PAGs

Jon,

Could you call me about this request?

Diann
564-2668

----- Forwarded by Diann Frantz/DC/USEPA/US on 11/30/2010 12:59 PM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

Subject: RE: Update on PAGs

Hi Diann and hope you had a great holiday

We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sign-up to receive e-updates from Rep. Markey at http://markey.house.gov/signup

-----Original Message-----
From: Frantz.Diann@epamail.epa.gov [mailto:Frantz.Diann@epamail.epa.gov]
Sent: Tuesday, March 30, 2010 6:23 PM
To: Freedhoff, Michal
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am

writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Subject: PAG Documents
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Glenna Shields/OU=DC/O=USEPA/C=US@EPA
From: CN=Tony Nesky/OU=DC/O=USEPA/C=US
Submit Time: 12/9/2010 20:38:27

Attached are the PAG documents: the FR notice and the revised document in PDF and Word formats. Your committee members are welcome to comment on the Word version, but they should realize that pagination may go crazy depending on their printer. They should use the PDF version to print the document.

I'll be out on Friday, and back in the offfice on Monday.

Tony Nesky
Center for Radiation Information and Outreach
Tel: 202-343-9597
nesky.tony@epa.gov

DraftPAGManual12-10-10.doc DraftPAGManual12-10-10.doc **DraftPAGManual12-10-10.pdf** DraftPAGManual12-10-10.pdf **PAGFR 12-09-10.doc** PAGFR 12-09-10.doc

Subject: Re: Doug Guarino FOIA release 6-28-2010
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA CN=Jeffrey Blizzard/OU=DC/O=USEPA/C=US@EPA CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Thomas Agee/OU=DC/O=USEPA/C=US
Submit Time: 6/28/2010 13:40:42

Alan, here is a scan of the material for release to Doug Guarino today. Further below is a scan of the signed cover letter.

Let me know if you have any questions.

Doug Guarino FOIA response-6_28_2010.pdf Doug Guarino FOIA response-6_28_2010.pdf

Thomas Agee
Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Email: agee.thomas@epa.gov
Office: (202)-343-9933
Fax: (202)-343-2302

----- Forwarded by Thomas Agee/DC/USEPA/US on 06/28/2010 01:38 PM -----

From: Jeffrey Blizzard/DC/USEPA/US

To: Alan Perrin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA

Cc: Thomas Agee/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA

Date: 06/28/2010 01:27 PM

Subject: Doug Guarino Letter - 6-28-10

Doug Guarino Letter _ 6-28-10.pdf Doug Guarino Letter _ 6-28-10.pdf

Thank You,

Jeff Blizzard
Environmental Protection Agency
Office of Air and Radiation
Radiation Protection Division
Center for Radiological Emergency Management
(202) 343-9470

Document Log

From	To
Susan Stahle/DC/USEPA/US	Earl Salo/DC/USEPA/US@EPA Earl Salo/DC/USEPA/US
CC	**BCC**
Subject	**Date/Time**
Re: Proposed guidance on response to nuclear incidents	01/22/2009 02:46 PM

Document Body

Oh, no worries, I was really just pointing out to the front office that we had all gone through the proper channels and obtained the appropriate concurrence way back in 2007, i.e. their concurrence. :) I'm not worried about it, it's really just an unfortunate timing issue, getting swept up in the transition stuff.

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

Earl Salo	Thanks. I'm sorry that my email was misleading...	01/22/2009 02:38:43 PM

From:	Earl Salo/DC/USEPA/US
To:	Susan Stahle/DC/USEPA/US@EPA
Cc:	Elliott Zenick/DC/USEPA/US@EPA, Richard Ossias/DC/USEPA/US@EPA, Lee Tyner/DC/USEPA/US@EPA
Date:	01/22/2009 02:38 PM
Subject:	Re: Proposed guidance on response to nuclear incidents

Thanks. I'm sorry that my email was misleading regarding SWERLO's role.

Earl Salo
Assistant General Counsel for Superfund
Solid Waste and Emergency Response Law Office
Office of General Counsel (2366A)
USEPA
1200 Pennsylvania Ave., N.W.
Washington D.C. 20460
202-564-5504 Fax 202-564-5531

Susan Stahle	Hi Earl-- Yes, and by cc I'm including Pat Hirsch...	01/22/2009 01:03:26 PM
Earl Salo	I understand that the Administrator's Office has...	01/22/2009 10:21:52 AM

Remainder of this e-mail string
is released along with the e-mail string that follows

Document Log

From	To
Susan Stahle/DC/USEPA/US	Sara DeCair/DC/USEPA/US@EPA sara decair
CC	**BCC**
Colby Stanton/DC/USEPA/US@EPA	
Subject	**Date/Time**
Fw: Proposed guidance on response to nuclear incidents	01/22/2009 01:20 PM

Document Body

Here is what I sent to folks in OGC. I also talked to my acting GC and acting PDGC about this for about 25 minutes today. They suggested that this might get pulled from the website. You might want to put some feelers out into OAR's front office or into the AO's office, see what's up. I'll keep advocating from here. :)

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov
----- Forwarded by Susan Stahle/DC/USEPA/US on 01/22/2009 01:18 PM -----

From:	Susan Stahle/DC/USEPA/US
To:	Earl Salo/DC/USEPA/US@EPA
Cc:	Kevin McLean/DC/USEPA/US@EPA, Lee Tyner/DC/USEPA/US@EPA, Mary-Kay Lynch/DC/USEPA/US@EPA, Richard Ossias/DC/USEPA/US@EPA, Elliott Zenick/DC/USEPA/US@EPA, Pat Hirsch/DC/USEPA/US@EPA
Date:	01/22/2009 01:02 PM
Subject:	Re: Proposed guidance on response to nuclear incidents

Hi Earl--

Yes, and by cc I'm including Pat Hirsch and Mary-Kay Lynch on this response (whom I also talked to as well), and am thus providing some initial information to the front office about the PAG Manual. I am working at home today and not able to come down personally and meet with Pat or Mary-Kay, but can certainly discuss this matter further via phone (available at 703-664-0258), or I am back in the office tomorrow and can meet at any time.

Let me first clarify one point--the PAG Manual was actually reviewed by both ARLO and SWERLO back in May of 2007. I acted as the point of contact within OGC since the PAG Manual is being coordinated by my client, OAR/ORIA, but this document is a multi-agency project, including DOD, DOE, NRC, DHS, HHS, DOC, and DOL. It also involves several offices within EPA, including OW and OSWER. In coordinating OGC clearance, I sent the document to Lee Tyner for obtaining SWERLO clearance. Once obtained, I coordinated receiving the remainder of OGC clearance, including front office clearance from Mary Ann

Poirier. Again, that was obtained in May 2007.

Let me clarify one other point--the PAG Manual has not yet been published in the FR. The Notice has been signed by Marcus Peacock and sent to the FR, but due to the size of the actual document, we anticipate it taking several weeks before actual publication will occur (this because of formatting issues). The FR Notice and the manual itself, however, are already publicly available on ORIA's website at www.epa.gov/radiation/rert/pags.html.

I understand that the Inside EPA article yesterday has generated some concern about this document, and made it look like another "11th hour" attempt to push through a "controversial draft guide" that "could lead to dramatically weakened public protections" (in the words of the article). That characterization of the PAG Manual is most unfortunate and quite inaccurate. Not surprisingly, this article is quite slanted in one direction and does not accurately represent the 3+ years of inter-agency work on updating the 1992 PAG Manual, nor does it represent the true desires of the ER community who have been eagerly awaiting its release. For more information on its substance, I can happily arrange a briefing from my ORIA contact, Sara DeCair, who has already expressed her willingness to answer any questions you have regarding the document and the process regarding this update. She is available anytime.

Let me though provide a brief sketch of the timeline of events, at least from the point that EPA and members of the multi-agency workgroup were ready to finalize the document and publish it for public review and comment, so that you can understand that, while the timing of this signature was unfortunate from its appearance, it was in no way an "11th hour" action by the outgoing Administration.

In May 2007, EPA initiated a final "showstoppers" review of the PAG Manual within EPA. This document had already received Agency/Department approval from all other members of the workgroup. At this time, I initiated and obtained OGC concurrence, including, as explained above, front office approval. After working through several remaining administrative questions (i.e. ensuring compliance with OMB's Good Guidance Bulletin, etc.) OAR/ORIA sent the PAG Manual to OPEI who then sent it to OMB in November of 2007. And that is where the PAG Manual sat until September of 2008. OMB deliberately put the PAG Manual on hold until it completed its review of the DHS/FEMA "Planning Guidance for Protection and Recovery Following RDD and IND Incidents." The DHS document was finally issued August 3, 2008; afterwards, OMB turned their attention back to the PAG Manual, resuming conversations with EPA in September. From September until December 2008, EPA worked with OMB and were finally able to obtain clearance of the package. Signature then occurred as soon as possible thereafter, which happened on January 15, 2009.

So although the timing looks suspicious, OAR/ORIA has been working long and hard to get this document out. Margo Schwab, ORIA's contact at OMB, also recognized the possible negative perception this timing might invoke and has offered her assistance in educating the new Administration regarding this document so that publication in the FR might still go forward as soon as possible.

Let me also stress one important point: This action is not a rulemaking. It is publishing a guidance document for notice and public comment. EPA and the other members of the multi-agency workgroup will consider all comments received on the PAG Manual during the 60-day public comment period, and will incorporate those they feel are appropriate. Thus, the public has an important opportunity to provide input, and, like the Oct. 30 letter to the Administrator, can air all their grievances in their public comments. But remember, the PAG Manual is not a binding regulatory document, and does not require any member of the ER community to actually abide by its recommendations. Anyone disagreeing with it is perfectly free to ignore it, even after it is finalized.

Pat and Mary-Kay: After our conversation today, most of the above will be repeat information, but hopefully it still provides some context and comfort. I am also attaching the documents you requested. Please let me know what other information I can provide.

[attachment "EPAAdministratorJohnson103008.pdf" deleted by Susan Stahle/DC/USEPA/US] [attachment "PAGs Proposed Revisions Document 1-7-2009.pdf" deleted by Susan Stahle/DC/USEPA/US]

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

Earl Salo I understand that the Administrator's Office has... 01/22/2009 10:21:52 AM

From:	Earl Salo/DC/USEPA/US
To:	Richard Ossias/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA
Cc:	Mary-Kay Lynch/DC/USEPA/US@EPA, Kevin McLean/DC/USEPA/US@EPA, Lee Tyner/DC/USEPA/US@EPA
Date:	01/22/2009 10:21 AM
Subject:	Proposed guidance on response to nuclear incidents

I understand that the Administrator's Office has called OGC about possibly withdrawing this proposed guidance, which has been published in the FR for public comment. I understand that ARLO including Susan Stahle reviewed the guidance. Could ARLO contact Mary Kay about this guidance?

Earl Salo
Assistant General Counsel for Superfund
Solid Waste and Emergency Response Law Office
Office of General Counsel (2366A)
USEPA
1200 Pennsylvania Ave., N.W.
Washington D.C. 20460
202-564-5504 Fax 202-564-5531

Document Log Item

Addressing

From

Susan Stahle/DC/USEPA/US

To

Pat Hirsch/DC/USEPA/US@EPA
Mary-Kay Lynch/DC/USEPA/US@EPA

CC

Richard Ossias/DC/USEPA/US@EPA
Elliott Zenick/DC/USEPA/US@EPA
Lee Tyner/DC/USEPA/US@EPA
Earl Salo/DC/USEPA/US@EPA
Kevin McLean/DC/USEPA/US@EPA

BCC

Description

Subject

PAG Manual - one more document

Date/Time

01/22/2009 01:13 PM

# of Attachments	Total Bytes	NPM	Contributor
1	42,857		Lee Tyner

Processing

Comments

Clear Category

Non-responsive

Additional Category:

Printed

Document Body

Hello--

OAR/ORIA forwarded me the following document containing the key points to keep in mind regarding the PAG Manual. Hope it helps.

PAGs Key Messages 1-5-09.doc

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

Draft Revisions to Protective Action Guides for Radiological Incidents (PAGs)

Key Messages

EPA seeks comments on the two major updates to the Protective Action Guides for Radiological Incidents, including:

- New guidance concerning consumption of drinking water during or after a radiological emergency; and
- Updated dose conversion parameters and derived response levels that conform to the most current science.

Guidance Only – The PAGs suggest precautions that state and local authorities can take to keep people from receiving an amount of radiation that might be dangerous to their health.

- The PAGs provide guidance only.
- PAGs provide numerical doses that should be avoided and associated protective actions.
- State and local authorities can use the PAGs when they are making radiation protection decisions
- Because every incident is different, decision-makers should consider all factors before taking action (e.g., weather, traffic, number of people in impacted area…).

Radiological Emergencies – This guidance is for radiological emergencies; it is not intended to impact site cleanups occurring under another statutory authority.

- During an emergency it is essential for decision makers to have the flexibility to be more or less restrictive based on the applicability to the unique characteristics of the incident and local situation.
- The PAGs were developed with the goal of preventing acute effects and reducing risk of chronic effects from radiological incidents.
- Early and Intermediate Phase
    - The early and intermediate phase PAGs provide short term solutions for situations that require decision-makers to act quickly to protect public health.
    - The fact that the PAGs suggest specific actions should not prevent any applicable and feasible precautionary measures. (e.g., closing water intakes and using available stored water during the early phase of an incident.)
- Drinking Water
    - The drinking water PAGs apply to the specific situation of a radiological emergency that directly affects the drinking water systems
    - The dose level referenced in the proposed PAGs is a dose to be avoided.
    - The drinking water PAGs apply for less than one year during an emergency situation.
    - The PAG derived response levels (DRLs) are consistent with national and international emergency response guidance.

Consistency -- This draft is consistent with the current practices and standards of EPA, other Federal agencies, and national and international radiation advisory groups.

- Consistency between these documents enhances usability and creates a unified federal response.
- The PAGs incorporate the DHS/FEMA and FDA guidance for radiological emergencies.
- The PAGs incorporate the latest science from the International Commission on Radiological Protection (ICRP).

Document Log

From	To
Susan Stahle/DC/USEPA/US	Sara DeCair/DC/USEPA/US@EPA Sara DeCair/DC/USEPA/US
CC	**BCC**
Colby Stanton/DC/USEPA/US@EPA	
Subject	**Date/Time**
Re: PAGs Manual revisions --questions by my front office - HELP!	01/22/2009 10:55 AM

Document Body

I'm getting questions from my front office about this, apparently because the AO's office is getting hit by questions based on an Inside EPA article yesterday (which I can send you if you didn't see this). Can you call me at 703- if you are around? I need help recreating our timeline of events; I am at home without my files so I don't have that info with me. Thanks.

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

Sara DeCair Great news!! The proposed "Protective Action G... 01/16/2009 07:23:26 PM

From: Sara DeCair/DC/USEPA/US
To:
Date: 01/16/2009 07:23 PM
Subject: PAGs Manual revisions -- signed!

Great news!! The proposed "Protective Action Guides (PAGs) for Radiological Incidents" revisions were signed on January 15, 2009, by EPA's Deputy Administrator, Marcus Peacock, for release into the Federal Register as a Notice of Availability for Review and Comment.

Attached below is an *unofficial, pre-publication* copy of the Federal Register Notice for your reference. This document has not been published in the Federal Register and is not an official version of the proposed revisions. Just warning you, it may take a few weeks for it to be formally published in the Federal Register! The public comment period officially begins on the date of publication in the Federal Register.

EPA is only issuing the proposed Drinking Water guidance and the new DCF/DRL calculations for public review and comment. These are the only substantive changes to the 1992 PAGs, which were already re-evaluated and subject to public comment in the DHS/FEMA "Planning Guidance for Protection and Recovery Following RDD and IND Incidents."

Once the Drinking Water and new DCF/DRL calculations are available through www.regulations.gov, we

anticipate a 60-day public comment period. We will notify you when the FR notice is published and the public comment period opens!

The multi-agency PAGs Subcommittee will then review, respond to, and incorporate the public comments. Once public comments have been incorporated, we will issue a full updated Manual.

We are continuing to do PAGs outreach events. My colleague Ed will be at the HPS Midyear meeting in January '09; we are holding a four-hour course at EPA's OSC Readiness training; and I'll be at the May '09 Conference of Radiation Control Program Directors meeting. We are also developing a web-based training course.

More information on the PAGs can be found at www.epa.gov/radiation/rert/pags.html. The official proposed guidance will also be available at this site once it is published by the Federal Register Office.

Thank you to the many of you who pitched in on this revision process! And please direct any questions to me. My contact information is below.

[attachment "pags_frnotice_ 172009.pdf" deleted by Susan Stahle/DC/USEPA/US] [attachment "PAGs Proposed Revisions Document 1-7-2009.pdf" deleted by Susan Stahle/DC/USEPA/US]

Sara D. DeCair, Physicist
www.epa.gov/radiation/rert/pags.html
Center for Radiological Emergency Management
U.S. Environmental Protection Agency
office (202) 343-9713

Document Log

From	To
Susan Stahle/DC/USEPA/US	Sara DeCair/DC/USEPA/US@EPA sara decair
CC	**BCC**
Subject	**Date/Time**
any update on the PAG manual?	10/28/2008 02:15 PM

Document Body

I'm getting some inquiries from folks here so wondering what is the latest.

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov

Document Log

From	To
Susan Stahle/DC/USEPA/US	Sara DeCair/DC/USEPA/US@EPA Sara DeCair/DC/USEPA/US
CC	**BCC**
Colby Stanton/DC/USEPA/US@EPA	
Subject	**Date/Time**
Re: URGENT - amended EO or superceded??	06/08/2007 10:32 AM

Document Body

Howdy--

I was out yesterday so just saw this.

Yes, EO 12656 was amended by three other EOs. I'm not sure if/how they directly impact this language as I haven't traced it through. Do you still need that?

I'm attaching a link that will help you do that. Scroll down to EO 12656 and it gives a bit of history and links to the EOs that amend it.

http://www.archives.gov/federal-register/executive-orders/1988.html

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov
Sara DeCair/DC/USEPA/US

Sara DeCair/DC/USEPA/US
06/07/2007 02:51 PM

To Susan Stahle/DC/USEPA/US@EPA
cc Colby Stanton/DC/USEPA/US@EPA
Subject URGENT - amended EO or superceded??

Sue --

The legal lingo in the PAG Manual will come in handy for a briefing Colby needs to finish TODAY - and she is worried the EO mentioned below has been amended (and should be cited differently) or superceded by something, when DHS came on the scene??

Thank you for calling Colby ASAP, at 202-343-9448 or on her cell at [illegible] much appreciated!

Sara

Executive Order 12656 states that the Administrator shall
"[d]evelop, for national security emergencies, guidance on acceptable emergency levels of nuclear radiation. . . ."
30 Exec. Order No. 12656, § 1601(2), 53 FR 47491, 47507 (November 18, 1988).

Document Log Item

Addressing

From	To
Susan Stahle/DC/USEPA/US	Sara DeCair/DC/USEPA/US@EPA
CC	**BCC**

Description

Subject	Date/Time
Re: PAGs news	01/31/2007 10:04 AM

# of Attachments	Total Bytes	NPM	Contributor
0	6,634		Sara DeCair

Processing

Comments

Clear Category

Non-responsive

Printed

Document Body

Hi Sara--

Thanks for the update.

Based on this, I think it makes sense to coordinate the OGC review at the same time the final inter-agency review is going on. At that point, I'll work towards getting OGC approval at the same time you are getting your final approval from each agency. And yes, a briefing or even just some background material that can accompany the actual PAG Manual will help me get it through OGC.

In the meantime I may poke around the version you gave me, just to help keep things on schedule. One item we previously discussed was the legal authority and general explanation/history for the PAG Manual. Right now there are some changes I suggested to the language to make it more accurate. Also, I had some questions on the 1976 PAG Manual I'd like to see if we can answer. I will resend the email I sent previously. I think it would be helpful to get these things resolved/revised before you send of the document for its final review.

Susan Stahle
Air and Radiation Law Office (Rm 7502B)
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (ARN: MC 2344A)
Washington, D.C. 20460
ph: (202) 564-1272
fax: (202) 564-5603
stahle.susan@epa.gov
Sara DeCair/DC/USEPA/US

Document Log Item

Addressing

From

Susan Stahle/DC/USEPA/US

To

Mike Boyd/DC/USEPA/US@EPA
Sara DeCair/DC/USEPA/US@EPA

CC

Colby Stanton/DC/USEPA/US@EPA

BCC

Description

Subject

PAGs--discussing/resolving Presidential Guidance v. EPA Guidance question

Date/Time

11/28/2006 12:10 PM

# of Attachments	Total Bytes	NPM	Contributor
0	4,028		Colby Stanton

Processing

Comments

Clear Category

Non-responsive

Printed

Document Body

Meeting/Appointment

Date 12/01/2006

Time 11:00:00 AM to 11:45:00 AM

Chair Susan Stahle

Location call-in number =
de =
2

Invitees

Required Mike Boyd; Sara DeCair

Optional Colby Stanton

FYI

Hi--As you can tell, I'm now picking up this project and thought a good first step would be to resolve the question posed

in Sara's email to me on 10/10/06. In conjunction, I'd like to discuss how we characterize our reasons for issuing this Guidance in the Executive Summary. Ultimately, I think resolving both questions will lead to a more accurate description of our authorities for the PAGs and to some confidence that we can issue the PAGs as an EPA document and swallow within it prior EPA or FRC publications without getting in trouble with the President. :)

Mike--I note Sara is out until Friday so I scheduled this call for her return, but should you want to discuss any of this before then please feel free to call me at 564-1272.

Sue,

Here is a draft of the PAGs -
[attachment "Draft Final 9-29-2006.doc" deleted by Susan Stahle/DC/USEPA/US]
One big question is that since it is a revision of a 1976, then 1992 document, both of which were EPA documents, not Presidential Guidance or anything, can it supercede very old Presidential Guidance in the form of FRC Reports 5 and 7, the FR notices for which are only in hard copy - I can fax them to you if you want - my colleagues say they were only Pres. Guidance because was thought the only way the info would be used by state and local planners was to make it come from the President. These days we know that's not true.

We have this statement in our Executive Summary, that is just like in the 1992 version:
This guidance incorporates the concepts and guidance contained in Federal Radiation Council (FRC) Reports 5 and 7 [refs] as well as ICRP Publication 40 [Ref.] and IAEA SS-72 [Ref. rev. 1, 1991] .

Refs from our web site: http://www.epa.gov/radiation/pubs.htm

- *Report No.5: Background Material for the Development of Radiation Protection Standards PDF* (19pp, 464Kb) (Federal Radiation Council)

- Federal Radiation Council *Report No. 7: Background Material for the Development of Radiation Protection Standards and* Protective Action Guides for Strontium-89, Strotium-90 and Cesium-137 PDF (49pp, 1.1Mb)

We are going through, now that we know these were Pres. Guidance, and Mike Boyd, our genius of federal guidance, is hoping to help resolve whether there are any actual conflicts between 5 or 7 and the PAGs - since 5 and 7 do provide numeric guidance, it's possible but he will cross walk them to make sure. He's interested to hear from you what might be the implication of that old Pres Guidance. He's great to talk to if you haven't before: 202-343-9395.

Thank you so much,

Sara

Submit Time: 5/11/2010 08:27:14
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
To: CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Fw: Next Steps on PAGs

Just an FYI. Mike Flynn is discussing this work with OSWER before we talk with the federal partners.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322
----- Forwarded by Lee Veal/DC/USEPA/US on 05/11/2010 08:26 AM -----

From: Jonathan Edwards/DC/USEPA/US

To: Alan Perrin/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA, "Sara DeCair" <DeCair.Sara@epamail.epa.gov>

Date: 05/11/2010 08:18 AM

Subject: Fw: Next Steps on PAGs

FYI

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Jonathan Edwards

----- Original Message -----
From: Jonathan Edwards
Sent: 05/11/2010 08:16 AM EDT
To: Mike Flynn
Subject: Re: Next Steps on PAGs
Great!--thanks, Jon

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Mike Flynn

----- Original Message -----
From: Mike Flynn
Sent: 05/11/2010 08:15 AM EDT
To: Jonathan Edwards
Subject: Fw: Next Steps on PAGs
Fyi I'm meeting with Dana later this week.
to ----------\Sent by EPA Wireless E-Mail Services.
Mike Flynn

----- Original Message -----
From: Mike Flynn
Sent: 05/10/2010 06:40 PM EDT
To: Dana Tulis
Subject: Fw: Next Steps on PAGs

Dana, I know you're probably swamped with oil spill stuff, but would like to chat with you about strategy for reaching out to other Feds on this, and how best to do to preserve relationships while moving forward. Hopefully, coffee on Friday still works for you - if not, would like to catch you briefly. thanks,Mike

Mike Flynn, Director
Office of Radiation and Indoor Air (MC-6601-J)
U.S. Environmental Protection Agency
Phone: (202) 343-9320
Fax: (202) 343-2395

----- Forwarded by Mike Flynn/DC/USEPA/US on 05/10/2010 06:37 PM -----

From: Mike Flynn/DC/USEPA/US

To: Dana Tulis/DC/USEPA/US@EPA, Barnes Johnson/DC/USEPA/US@EPA, Elizabeth Southerland/DC/USEPA/US@EPA, Cynthia Dougherty/DC/USEPA/US@EPA, Pamela Barr/DC/USEPA/US@EPA, Mary-Kay Lynch/DC/USEPA/US@EPA, Richard Ossias/DC/USEPA/US@EPA

Cc: Jonathan Edwards/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA, Jean Schumann/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA, Wynne Miller/DC/USEPA/US@EPA, David Huber/DC/USEPA/US@EPA

Date: 05/10/2010 06:32 PM

Subject: Next Steps on PAGs

I wanted let you know that Gina McCarthy passed on that she was able to talk to the Administrator concerning the Agency's policy direction on the PAGs Manual, and the Administrator agreed with our proposed approach (outlined below). I will be setting up a meeting shortly with you to discuss our process/approach to engaging our inter-agency partners. In the meantime, we will begin the process of updating the draft PAGs Manual and the draft Federal Register Notice of Availability for Public Comment to reflect the new approach.

Thanks for all your efforts on this. If you have any questions, please give me a call or contact Alan Perrin at 202.343.9775.

Mike Flynn, Director
Office of Radiation and Indoor Air (MC-6601-J)
U.S. Environmental Protection Agency
Phone: (202) 343-9320
Fax: (202) 343-2395

----- Forwarded by Mike Flynn/DC/USEPA/US on 05/10/2010 05:59 PM -----

From: Alan Perrin/DC/USEPA/US

To: Dana Tulis/DC/USEPA/US@EPA, Barnes Johnson/DC/USEPA/US@EPA, Elizabeth Southerland/DC/USEPA/US@EPA, Cynthia Dougherty/DC/USEPA/US@EPA, Pamela Barr/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA

Cc: Jonathan Edwards/DC/USEPA/US@EPA, Mike Flynn/DC/USEPA/US@EPA, Jean

Schumann/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Wynne Miller/DC/USEPA/US@EPA, David Huber/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA

Date: 04/30/2010 03:31 PM

Subject: PAGs paper

Thank you for the comments you provided on the PAGs talking points for meeting with the Administrator. Your comments were used to produce the attached revision of the paper, and the revision has been forwarded to Gina McCarthy. -Alan

[attachment "PAGs_draft_adp-v2.doc" deleted by Jonathan Edwards/DC/USEPA/US]

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Alan Perrin

Deputy Director, Radiation Protection Division
Office of Radiation and Indoor Air, USEPA
1200 Pennsylvania Avenue, NW (6608J)
Washington, DC 20460

phone: (202) 343-9775
fax: (202) 343-2304
perrin.alan@epa.gov
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ed,

In Sara's absence I edited and am sending you an edited version of the presentation. I removed three slides on the water PAGs as the water PAG will not be in the latest draft, cleaned up some history and updated some of the information. See about 20 comments in the revised document. Also there is some redline and strikeout text where edits need to be made.

Hope this helps.

Maher - Protective Action Guides Rev 2011 Rev EDT EPA.pptx

Maher - Protective Action Guides Rev 2011 Rev EDT EPA.pptx

Ed
Edward A. Tupin, MS, CHP
tupin.edward@epa.gov
Health Physicist
Center for Radiological Emergency Management
US Environmental Protection Agency 6608J
Washington, DC 20460
office: (202) 343-9383
cell: (202) 253-8206
Office Location
1310 L. ST, NW
Washington, DC 20005
****

Ed Maher ---06/21/2011 10:07:28 AM---Hi Sara! The presentation that I plan to deliver is attached. I would appreciate a review and edit,

From: Ed Maher <emaher@moellerinc.com>
To: Sara DeCair/DC/USEPA/US@EPA
Cc: Edward Tupin/DC/USEPA/US@EPA
Date: 06/21/2011 10:07 AM
Subject: RE: Review request: Radiological Emergency Planning Program at Harvard

---

Hi Sara!

The presentation that I plan to deliver is attached. I would appreciate a review and edit, if you have the time. Please put the edits into the Powerpoint Comment feature. I would particularly appreciate any information that would lead to a slide providing insight or information on what has happened since the new PAG draft was released for interagency comment a few years ago. You or your staff are welcome to give this lecture (or your own), but you would need to fund the travel and living expenses for the attendee since I've exhausted by budget for this course and then some.

Best Regards,

Ed
Edward F. Maher, Sc.D., CHP
Associate and Senior Health Physicist

Acton Division Manager
Dade Moeller
One Acton Place, Suite 201
Acton, Massachusetts 01720
(978) 929-9133 x111 (Office)
(978) 929-9134 (Fax)
(978) 807-3280 (Mobile)
emaher@moellerinc.com

-----Original Message-----
From: DeCair.Sara@epamail.epa.gov [mailto:DeCair.Sara@epamail.epa.gov]
Sent: Friday, June 17, 2011 4:21 PM
To: Ed Maher
Cc: Tupin.Edward@epamail.epa.gov
Subject: Review request: Radiological Emergency Planning Program at Harvard

Ed, I hope we can review the PAGs material for your REP course coming up? Thank you!!

Sara

Sara D. DeCair, Health Physicist
www.epa.gov/radiation/rert/pags.html
Center for Radiological Emergency Management
U.S. Environmental Protection Agency
office (202) 343-9108
decair.sara@epa.gov
----- Forwarded by Sara DeCair/DC/USEPA/US on 06/17/2011 04:19 PM -----

From: Sara DeCair/DC/USEPA/US
To: emaher@hsph.harvard.edu
Cc: Lee Veal/DC/USEPA/US@EPA, Edward Tupin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 05/31/2011 01:55 PM
Subject: Review request: Radiological Emergency Planning Program at Harvard

Good afternoon,

I wonder if Ed Tupin and I can review the material that you are presenting on the proposed EPA Protective Action Guides? We are glad that you are covering the topic and just want to make sure that we're all on the same page! Let me know how we can best provide input to you, and thank you,

Sara

Sara D. DeCair, Health Physicist
www.epa.gov/radiation/rert/pags.html
Center for Radiological Emergency Management
U.S. Environmental Protection Agency
office (202) 343-9108
decair.sara@epa.gov

----- Forwarded by Sara DeCair/DC/USEPA/US on 05/31/2011 01:54 PM -----

From: "Harvard School of Public Health"
<HarvardSchoolofPublicHealth@mail93.subscribermail.com>
To: Sara DeCair/DC/USEPA/US@EPA
Date: 05/31/2011 09:37 AM
Subject: Radiological Emergency Planning Program at Harvard

View printer friendly browser version.

Join experts in the field for these upcoming radiation protection programs

(Embedded image moved to file: pic07441.gif)Harvard School of Public Health

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In-Place Filter Testing
Workshop

July 25 - 29, 2011
Boston, MA

(Embedded image moved to file: pic09512.gif)Register Today!

Agenda

In-Place Filter Testing Workshop prepares professionals to test and certify systems containing HEPA filtration and gas adsorption systems. Taught by Harvard faculty and leaders in the field of filtration, this program provides nuclear, safety, and industrial hygiene professionals with the tools to apply new knowledge of nuclear filter technology to their organization's projects and plants.

Upon completion of this Harvard program, participants will be able to:

- Test and certify systems containing HEPA filtration and gas adsorption systems for nuclear and non-nuclear applications
- Verify airflow in ventilation and air-cleaning systems
- Operate testing equipment unique to these particular activities
- Demonstrate an understanding of regulations issued by the Nuclear Regulatory Commission and the

Department of Energy
pertaining to air- and
gas-cleaning activities.

(Embedded image moved to file:
pic30145.gif)Learn More!

Radiological Emergency Planning: Terrorism, Security, and Communication

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Protective Action Guides (PAGs)

Edward F. Maher, Sc.D., CHP

RADIOLOGICAL EMERGENCY PLANNING

Harvard School Of Public Health

August 16, 2011

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Brief Overview

- What are Protective Action Guides?
- History of the PAG Manual
- PAG Manual: EPA-400-R-92-001
- Technical Approach to PAGs and Derived Response Levels
- Status of Revision to the PAG Manual
- Projecting Doses for use with PAGs

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Protective Action Guide

The projected dose to reference man, or other defined individual, from an unplanned release of radioactive material at which a specific protective action to reduce or avoid that dose is recommended.

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Protective Action

During a nuclear incident, when the source of exposure of the public is not under control, the public usually can be protected only by some form of intervention which will disrupt normal living. Such intervention is termed <u>protective action.</u>

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Four Principles for PAGs

- Avoid Acute Effects
- Risk of delayed effects should not exceed upper bounds under emergency conditions
- PAGs should not be higher than justified based on optimization of cost and risk
- Risk of protective action should not exceed risk from the dose avoided

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Protective Action Guides…….

- Are NOT Absolute Standards
- DO NOT Define “Safe” or “Unsafe” Levels of Exposure or Contamination
- DO Represent Approximate Levels at Which the Protective Actions are Justified

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Brief PAG History

- First recommendations by FRC in 1960's
  - Fallout radionuclides (iodines, cesium)
  - Ingestion pathway (milk)
- Function transferred to EPA (1970)
- FEMA re-delegated role to EPA (1982)
- EPA role in PAG reaffirmed by FRERP (1996) NRP (2004)and NRF (2008)

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Why Revise the PAG Manual?

- Expand applicability (post 9/11)
- Include new (1998) FDA guidance on food
- Include new FDA policy on use of KI
- Update dosimetry basis (ICRP 60+ and FGR 13/CD Supplement)

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EPA Recommendations 1982

- Reflected Three Mile Island accident
- Three accident phases:
  - Early (first four days)
  - Intermediate (weeks to months)
  - Late (months to years)
- Nuclear power plant accident driven
- General format of current PAG manual
- Major emphasis on early phase activities

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Exposure Pathways & Phases

EXTERNAL RADIATION-PLUME

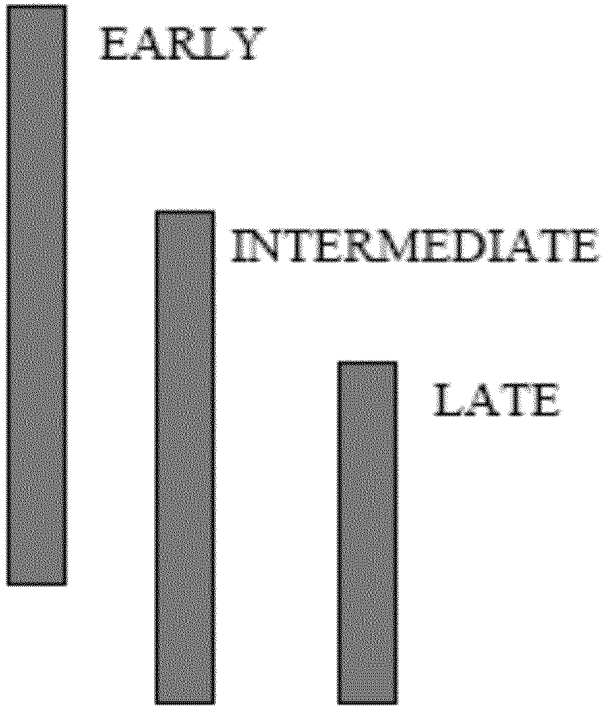
INHALATION-PLUME

CONTAMINATION OF SKIN AND CLOTHES

EXTERNAL RADIATION -- GROUND DEPOSITION

INGESTION

INHALATION -- RESUSPENDED



PAG is Based on Dose *Avoided* Not Dose *Received*

"Doses incurred prior to initiation of a protective action should not normally be included. Similarly, doses that might be received following the early phase should not be included for decisions on whether or not to evacuate or shelter. . . . For those situations where significant dose has already occurred prior to implementing protective action, the projected dose for comparison to a PAG should not include this prior dose." EPA 400, page 2-9.

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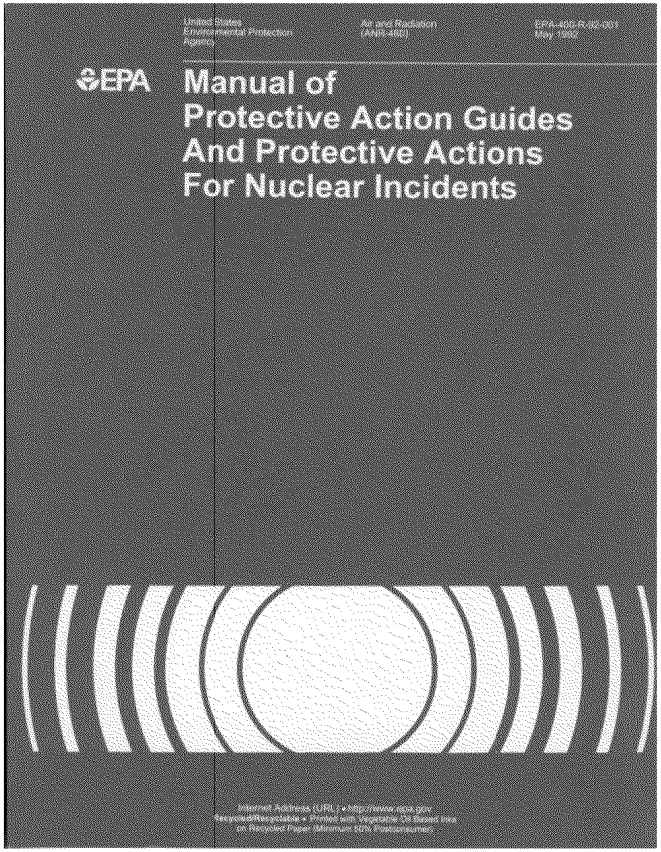
1992 EPA PAG Manual

- Still Based on Nuclear Power Plant Experience
- Evolved from previous versions since 1982
- Consistent with FRG 11
- ICRP 30 Methodology



1992 PAG Manual (contin.)

- Included Food and Drug Administration (FDA) 1983 Recommendations on food and animal feed contamination
- Drinking water guidance promised
- Cleanup and recovery guidance promised
- Web site for the PAG manual:

http://nepis.epa.gov/pubtitleOAR.htm

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Emergency Worker Exposure

- 5 rem (OSHA radiation worker dose)
- 10 rem protection of valuable property*
- 25 rem life saving or protection of large populations*
- >25 rem life saving or protection of large populations*

*When lower values not practical. Voluntary basis, fully informed

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Assumptions for Basis of Early Phase PAGs

- The value selected as the *avoided dose* which justifies evacuation is 1 -5 rem because:
  - it limits risk of delayed effects (protective of fetus)
  - cost of implementation at lower value not justified
  - avoids acute effects and risk of dose > risk of evacuation
- It is assumed the dose normally avoidable by evacuation is one half of the projected dose.

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Dose Conversion Factors (DCFs)

For Early Phase DCFs given for three pathways:

- Immersion in Cloud (External Dose)
- Inhalation in Cloud (Inhalation Dose)
- Deposition of Radioactivity (External Dose)
- Combination of the three pathways

Immersion DCF Assumptions

- Based on immersion in Plume (conservative for overhead Plume)
- Semi-infinite Cloud

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Inhalation DCF Assumptions

- Chemical and physical form of released material is that which gives the highest dose

- Uses ICRP* 30 Methodology (1977) which has been superseded by ICRP 66 Methodology (1990)

*International Commission on Radiological Protection

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Deposition DCF Assumptions

- Deposition velocity is 1 cm/s for iodines and 0.1 cm/s for particulates
- Depletion of plume occurs at beginning of release
- Exposure to deposited radioactivity occurs for 4 days (96 hours)

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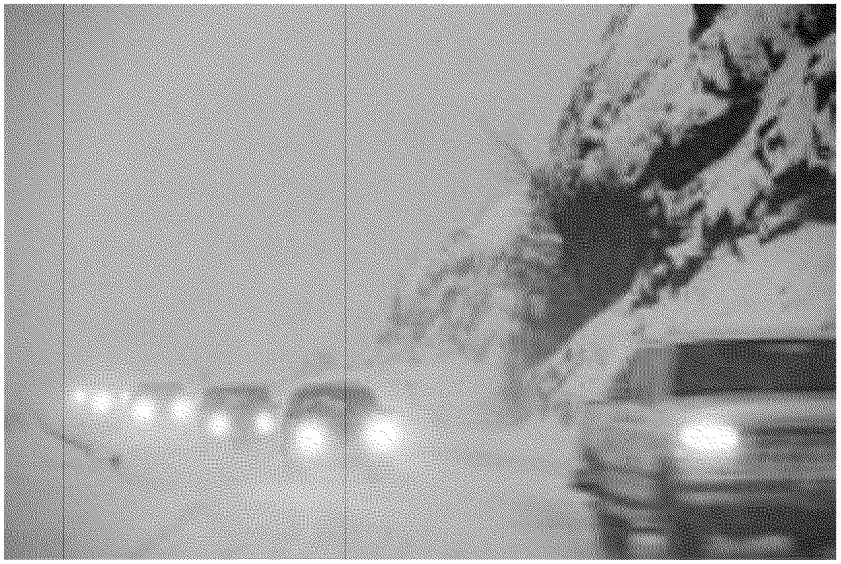
Considerations for Evacuation

- Dose is only avoided if evacuation time is shorter than exposure time
- Risk of evacuation is greater for some individuals
- Risk of evacuation is greater under adverse weather conditions

Considerations for Evacuation



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Evacuation PAG of 1-5 rem may not be appropriate

- For a short duration, high exposure release sheltering may be more protective.
- Sheltering may be preferred for higher risk groups up to 5 rem.
- Sheltering may be preferred for hazardous environmental conditions up to 5 rem (or 10 rem for higher risk groups)

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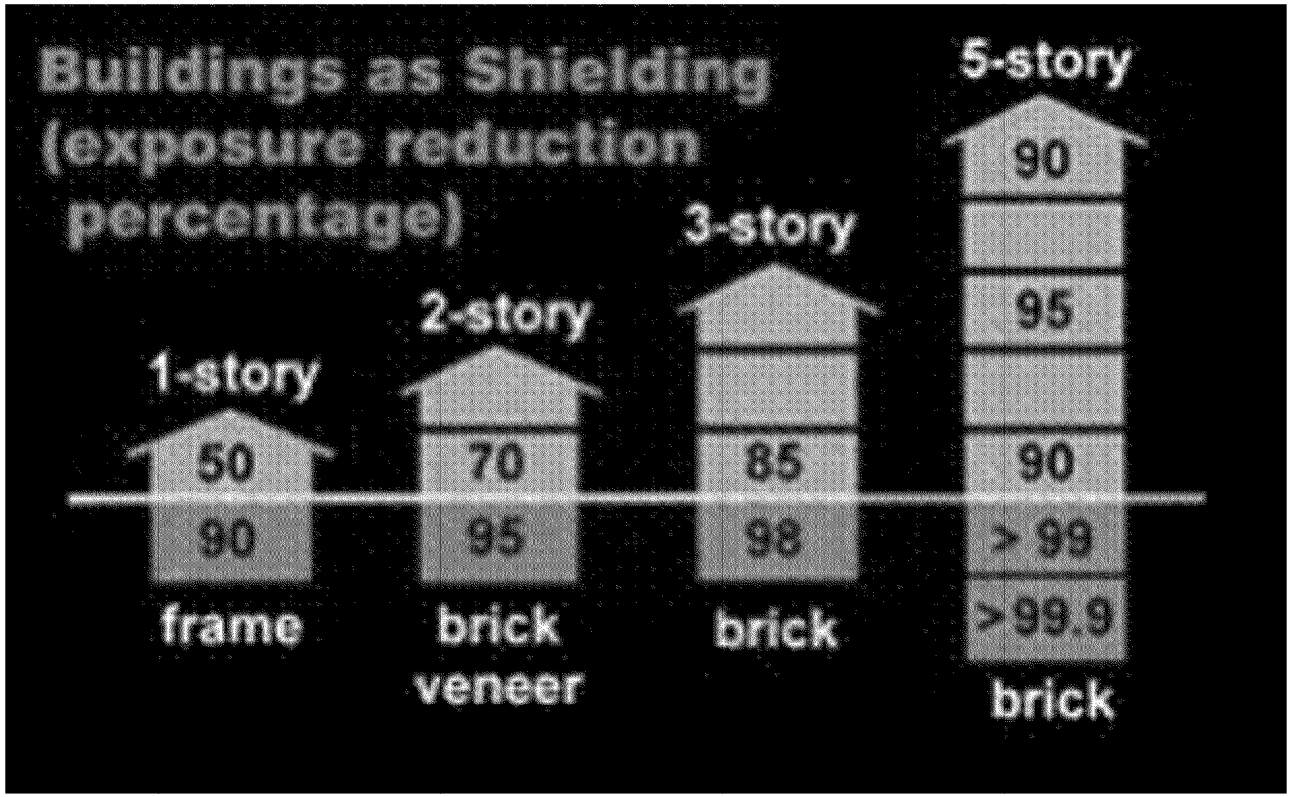
Sheltering Dose Reduction Factors for External Radiation



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Sheltering Dose Reduction Factors for Internal Exposure

Ventilation Rate (air changes/h)	Duration of Plume (h)	DRF
0.3	0.5	0.07
	1	0.14
	2	0.25
	6	0.54
1.0	0.5	0.21
	1	0.36
	2	0.56
	6	0.83

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Sheltering May not Be Protective For Longer Release Times

- Dose reduction from external exposure is extremely variable
- Sheltering for more than 1-2 air exchanges is not very effective
- Persons not leaving the shelter after the plume passes can receive increased exposure from contaminated indoor air.

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Early Phase PAGs

Old	New
• Potassium Iodide (KI) 25 rem thyroid dose (adult)	• KI threshold 5 rem thyroid dose (child) • KI use: includes new FDA over the counter sale approval (2001) recommendations and additional guidance (2003-2004)

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FDA 2002 KI Recommendations

	Thyroid Dose*	KI dose
– Adults over 40 yrs	500 rad	130 mg
– Adults 18-40 yrs	10 rad	130 mg
– Pregnant women	5 rad	130 mg
– Children 3 -18 yrs	5 rad	65 mg
– Children 1-36 mos	5 rad	32 mg
– Birth through 1 month	5 rad	16 mg

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KI: More Harm Than Good?

- Effective evacuation and/or sheltering reduces the dose to the whole body and the thyroid.
- Effective administration of KI only reduces dose to the thyroid.
  - May slow down evacuation/sheltering process
  - May give false sense of security so other protective action recommendations are not properly followed.

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Intermediate Phase

- From time source release is controlled until additional protective actions are terminated
- Reliable environmental measurements available for decision making on protective actions
- Lasts weeks to many months

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Intermediate Phase (Residents)

- Contamination
- External radiation from ground deposition
- Inhalation of resuspended radioactive material
- Ingestion of contaminated food and water
- Release of property items
- Decontamination of persons
- Relocation
- Access controls
- Decontamination of land and property
- Food and water controls
- Decontamination of items

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Intermediate Phase Issues

Re-entry - return of individuals to a contaminated, access controlled area for a limited time for a specific purpose

- Workers to repair or operate critical infrastructure
- Workers to feed and/or milk animals
- Workers to retrieve vital records, equipment
- Residents to retrieve personal effects

Assumptions for Basis of Intermediate Phase PAGs

The value selected as the *avoided dose* which justifies relocation is 2 rem first year; 0.5 rem second and any subsequent year not to exceed 5 rem in 50 years because:

* using a typical nuclear power plant source term a projected dose of 2 rem in the first year will give 0.5 rem in the second year and less than 5 rem in 50 years.

* It is assumed the dose normally avoidable by relocation is 60% of the projected dose.

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Re-entry

What considerations go into a re-entry PAG?

- Who is going to enter
- Doses and dose rates
- Activities to be performed
- Protective clothing – need, type
- Respiratory protection
- Monitoring

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Intermediate Phase

Old

- Population relocation – ≥ 2 rem (projected dose)
- Apply dose reduction techniques - < 2 rem
- Food (FDA 1982 Guidance Federal Register Notice and Background document incorporated)
- Drinking Water PAG– just promised

New

- Population relocation – ≥ 2 rem (projected dose)
- Apply dose reduction techniques - < 2 rem
- Food (FDA 1998 Guidance incorporated) – most limiting of
  - 0.5 rem CEDE or
  - 5 rem CDE to organ or tissue
- Drinking water – 0.5 rem CEDE first year

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FDA Food PAGs (old)

- FDA 1982 Federal Register Notice
  - 0.5 rem annual dose equivalent
  - ICRP 30 methodology
  - Derived Intervention Level (DIL) calculation equation
  - Sum of fractions for multiple radionuclides

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FDA Food PAGs (new)

- 1998 FDA guidance - most limiting of
  - 0.5 rem Committed Effective Dose Equivalent (CEDE)
  - 5 rem Committed Dose Equivalent (CDE) to most exposed organ or tissue
  - ICRP 56 methodology
- Table of Derived Intervention Levels (DIL)
  - Calculated for nine “marker” radionuclides
  - Default assumption: 30% of diet is contaminated
  - Sum of fractions for multiple radionuclides

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Relocation Calculation

- Doses already received by population not used in calculating **future** projected doses
- Any doses already received should be used by decision makers in deciding whether or not to relocate

- Deleted three water PAG Slides. Water PAGs will not be in new guidance and thus there is nothing to discuss.

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Late or Recovery Phase

- Restoration of incident site to conditions as near as possible to "normal"
- Removal of contamination
- Elimination of access restrictions
- End food and water controls
- Return of population to homes and jobs

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Late or Recovery Phase

- State and local governments have the primary responsibility for planning the recovery
- State and local governments will initiate recovery planning after stabilization of the emergency situation

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Late Phase PAGs

- Promised in 1992
- Optimized long-term PAG for recovery
- RDD/IND addressed by DHS Consequences Management subgroup
- Final document published in Federal Register August 1, 2008

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Approach to Late Phase PAGs

- Focus on process for reaching consensus decision on acceptable levels
  - Identify stakeholders
  - Identify factors for consideration
- Describe protective actions that can be taken during recovery phase
- Identify existing standards and guidance

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Release of Property

- Personal property will need to be brought out of controlled areas for uncontrolled release
- May happen during evacuation and relocation
- Criteria for survey and release needed

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Cleanup Issues Subgroup

- DHS lead RDD/IND Consequences Management Subgroup addressed recovery phase issues
- Optimization based on “Framework for Environmental Health Risk Management” (1997)
- Details developed by Operational Guides Technical Working Group – DOE lead
- Interim Final Report Feb 2009

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Optimization Factors

- Areas impacted (e.g., size, location relative to population)
- types of contamination (chemical and physical forms of radionuclides)
- Other hazards present (chemical, biological and physical)
- Actions already taken during the early and intermediate phases
- Projected land use

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Optimization Factors (contin.)

- Costs and available resources to implement
- Potential adverse impacts (e.g., to human health, environment, and economy)
- Long-term effectiveness
- Public acceptability, including local cultural sensitivities

Optimization Process

- Variety of dose or risk benchmarks identified by state, Federal or others
- Use benchmarks as gauge to analyze various options for remediation
- Establish cleanup goals based on the optimization analysis

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Operational Guides

- Address a wide range of personal and real property types
- Companion Software tool will facilitate use and interpretation of the guidelines
- Will be available for use in agency or organization specific planning documents

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OGT Stay Time Tables

- Operational Guides Technical Workgroup (OGT) developing example stay time tables to provide some guidance
- Radionuclide – specific
- Scenario (actions) – specific

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Example OGT Stay Times

TABLE 4 Scenario D1-2 Operational Guidelines for 0.5 rem Annual Dose: Indoor Worker Performing Essential Business inside the Building

	Surface Street Concentration pCi/m^2			
Radionuclide	4 Work Days	12 Work Days	4 Work Weeks	12 Work Week
Am-241	5.69E+07	3.14E+07	1.93E+07	9.69E+06
Cf-252	1.62E+08	9.04E+07	5.61E+07	2.88E+07
Cm-244	1.02E+08	5.67E+07	3.47E+07	1.75E+07
Co-60	1.47E+09	5.02E+08	2.23E+08	8.25E+07
Cs-137	6.14E+09	2.09E+09	9.27E+08	3.43E+08
Ir-192	4.79E+09	1.69E+09	8.03E+08	3.71E+08
Po-210	1.25E+09	5.28E+08	2.70E+08	1.23E+08
Pu-238	6.45E+07	3.56E+07	2.19E+07	1.10E+07
Pu-239	5.89E+07	3.25E+07	2.00E+07	1.00E+07
Ra-226	9.01E+08	3.47E+08	1.64E+08	6.34E+07
Sr-90	1.15E+10	5.07E+09	2.60E+09	1.09E+09

ED_001057C_T3_01067446

Future of PAGs

- PAGs are being revised by EPA
- DHS published "**Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents** ~~Protective Action Guides for Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND)~~ Final August 1, 2008
- ~~EPA will adopt DHS RDD PAGs~~
- EPA expects draft for public comment of new PAGs by end of 2011 (?)

Improvised Nuclear Devices

- Application of PAGs to IND events
  - Scope and scale
  - Fallout threats
  - Priority on lifesaving and avoidance of acute effects
  - Short response timeframe
  - Unique fallout decay curve
- ~~Possible annex to document to address initial 24-48 hours following IND~~ new PAGS will refer reader to IND guidance

ED_001057C_T3_01067446

ED_001057C_T3_01067446

Changes to PAGs

- Clarifies the use of the existing 1992 PAGs for incidents other than nuclear power plant accidents.
- Lowers the projected thyroid dose for administration of stable iodine based on data from the Chernobyl accident.
- ~~Provides new guidance concerning consumption of drinking water during or after a radiological emergency.~~
- Updates the dosimetry basis from ICRP 26/30 to ICRP 60+.
- ~~New guidance for dealing with long-term site restoration following a major radiological release after a radiological dispersal device (RDD) or improvised nuclear device (IND).~~

ED_001057C_T3_01067446

Key Activities & Milestones

- **Oct. 2006:** Multi-agency review of incomplete draft revision by PAGs Subcommittee of the Federal Radiological Preparedness Coordinating Committee
- **Feb. 2007:** The new Federal Radiological Monitoring and Assessment Center (FRMAC)-calculated tables and associated language was added to the draft revision
- **Mar. 2007:** Multi-agency review of full document by PAGs Subcommittee
- **Apr. 2007:** 4-hour PAGs workshop at National REP Conference
- **May 2007:** 4-hour PAGs workshop at CRCPD Conference
- **Late 2010:** Revised PAG Manual ~~will be~~ issued for agency comment
- Late 2011 Revised PAG Manual will be issued as draft for public comment?????

QUESTIONS?

ED_001057C_T3_01067446

Submit Time: 5/19/2010 11:21:56
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
To: CN=Thomas Agee/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Fw: (4 of 6 emails on latest FOIA)

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

----- Forwarded by Lee Veal/DC/USEPA/US on 05/19/2010 11:19 AM -----

From: Stuart Walker/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Cc: Elizabeth Southerland/DC/USEPA/US@EPA, Helen Dawson/DC/USEPA/US@EPA, RobinM Anderson/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA

Date: 05/19/2010 10:11 AM

Subject: Fw: (4 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 05/19/2010 10:07 AM -----

From: Stuart Walker/DC/USEPA/US

To: Susan Stahle/DC/USEPA/US@EPA

Cc: Charles Openchowski/DC/USEPA/US@EPA, Cindy Anderson/DC/USEPA/US@EPA, Elliott Zenick/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA

Date: 04/09/2010 11:29 AM

Subject: Fw: (4 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 04/09/2010 11:21 AM -----

From: Elizabeth Southerland/DC/USEPA/US

To: Stuart Walker/DC/USEPA/US@EPA, Helen Dawson/DC/USEPA/US@EPA, Davidw Charters/ERT/R2/USEPA/US@EPA

Date: 04/08/2010 05:39 PM

Subject: Re: (4 of 6 emails on latest FOIA)

I see no reason not to release this.

From: Stuart Walker/DC/USEPA/US

To: Elizabeth Southerland/DC/USEPA/US@EPA, Helen Dawson/DC/USEPA/US@EPA, Davidw Charters/ERT/R2/USEPA/US@EPA

Date: 04/07/2010 03:49 PM

Subject: (4 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 04/07/2010 03:35 PM -----

From: Stuart Walker/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Cc: Alan Perrin/DC/USEPA/US@EPA, boyd.mike@epa.gov, Colby Stanton/DC/USEPA/US@EPA, Jerome Puskin/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Tom Kelly/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA

Date: 08/20/2009 04:55 PM

Subject: 2 of 3 emails Fw: ACTION REQ'D: Five-week review of PAG Manual

---

Below are my comments to ORIA from 2007 that informed Charle's comments. I yellow highlighted the text referring to acute health effects. I do not remember ORIA ever asserting that any of these comments were incorrect on a technical basis, although I remember disagreements on some of the policy basis for OSRTI's comments on chronic issues.

----- Forwarded by Stuart Walker/DC/USEPA/US on 08/20/2009 12:12 PM -----

From: Stuart Walker/DC/USEPA/US

To: Sara DeCair/DC/USEPA/US@EPA

Cc: Doug Ammon/DC/USEPA/US@EPA, Colby Stanton/DC/USEPA/US@EPA, Elizabeth Southerland/DC/USEPA/US@EPA, Juan Reyes/DC/USEPA/US@EPA

Date: 05/15/2007 06:04 PM

Subject: Re: ACTION REQ'D: Five-week review of PAG Manual

Hi Sara,

Thanks for providing us an opportunity to review the latest draft of the ORIA PAGs. OSRTI does not have any showstoppers. We request that you let us review a redline/~~strikeout~~ version of the next draft after you

incorporate comments from the workgroup.

Since, this is the first draft of the ORIA PAG to include concentrations for the drinking water and food interdiction PAGs, we are submitting revised substantive comments on both those PAGs from our comments on the last draft. Our comments on both the drinking water and food interdiction PAGs include a comparison of the PAG concentrations to risk based concentrations, and in the case of the drinking water PAGs, MCLs. These comparisons are similar to the comments I sent Ed Tupin 3-4-2004 on an early draft of the water PAGs.

OSRTI comment on ORIA PAGsApril2007v1.doc OSRTI comment on ORIA PAGsApril2007v1.doc

Below is further explanaition of the analysis discussed in the comments on the water and food PAGs.

Water PAGs

Chronic effects

I put together 3 Lotus 123 Tables comparing ORIA's PAG concentrations to MCLs and concentrations corresponding to a 1 x 10-4 cancer risk. I used MCLs and 10-4 since these are measures EPA utilizes when making decisions about providing bottled water during emergencies involving class A carcinogens. I noticed that a number of the ORIA PAG concentrations are thousands of times higher than the MCLs or 1 x 10-4 (a few are over a hundred thousand times higher). This is not evident without looking at the concentrations since the MCL for most radionuclides is 4 mrem/yr and the PAG is 500 mrem/yr. However, I understand that different science may have something to do with it since the MCL is based on ICRP 2 methodology and the PAG is ICRP 60/72 methodology, however the 1 x 10-4 risk based concentrations are also based on ICRP 60/72.

Here is an explanation of the comparison tables I put together on the water PAGs and the 3 tables themselves.

2007ExplainCompareTables.pdf 2007ExplainCompareTables.pdf 2007CompareTable_byRisk.123 2007CompareTable_byRisk.123 2007CompareTable_byMCL.123 2007CompareTable_byMCL.123 2007CompareTable_byRad.123 2007CompareTable_byRad.123

Subchronic effects

It also appears that drinking water at the PAG concentrations for Te-129 and Te-127 may lead to subchronic (acute) effects acute following exposures of a day or a week. In a population, one should see some express of acute effects (not deaths) above 0.25 Gy (25 rad) - that is, vomiting, fever etc. The Te-129 absorbed dose at 1 week was 1.8 Gy (180 rad) for 14 L intake. For these two radionuclides, an acute radiation syndrome (ARS) involving the GI-tract is indicated. Acute dose coefficients for a 30 d period were calculated for the adult using the AcutDose. This analysis focused only on the 16 radionuclides where drinking water at the PAG concentration for 1 week or less would exceed the amount of radioactivity received from drinking a 1 x 10-4 cancer risk level assuming 70 years of exposure.

Food PAGs

I also put together 3 Lotus 123 Tables comparing ORIA's food PAG concentrations that were adopted

from FDA to concentrations corresponding to a 1 x 10-4 cancer risk. I used 10-4 since the food interdiction situation is somewhat analogous to the decision of when to provide drinking water. I noticed that some of the ORIA PAG concentrations are hundreds, even thousands of times higher than the MCLs or 1 x 10-4 .

Here is an explanation of the comparison tables I put together on the food PAGs and the 3 tables themselves.

2007ExplainCompareFOODTables.pdf 2007ExplainCompareFOODTables.pdf 2007CompareFoodTable_convertPRG.123 2007CompareFoodTable_convertPRG.123 2007CompareFoodTable.123 2007CompareFoodTable.123 2007CompareFoodTable_byRad.123 2007CompareFoodTable_byRad.123
Sara DeCair/DC/USEPA/US

Sara DeCair/DC/USEPA/US

04/10/2007 10:26 AM

To
Andrew.Wallo@eh.doe.gov,cmw6@cdc.gov
cc
Subject

PAGs Reviewers;

It is time for the final federal review, via FRPCC, of the PAG Manual prior to going into the Federal Register for public comment! This is a SHOWSTOPPERS ONLY review and we are asking for you to obtain your agency or department's (or your AA-ship's within EPA) buy-in on this Manual so we can release it. The five weeks start on April 10th and end on May 15th. Your showstopper comments are due no later than May 15th.

A showstopper is defined as a statement or concept that your agency or department sees as so problematic that we cannot release the Manual for public comment. Since this is the last of several rounds of review, we hope there will not be any such issues. Note that I will be checking in with you over the next few weeks to check on your progress and to see if you have any questions or potential showstoppers.

After this review and our incorporation of any final changes, I will submit the final draft Manual to my management in the Office of Air and Radiation along with the final draft FR Notice of Availability for approval. We plan to issue the FR Notice in June and provide a 60-day comment period.

To access the document:
Go to the contractor's FTP site at: ftp://205.158.69.157/
User name: clients Password: welcometoendyna
In the EPA ORIA folder, you will find both Word and PDF versions -- I suggest you print from the Word

version with 'View, Markup' turned OFF.

Attachments:
- A suggested re-organization for Chapter 6 that may improve readability
- Comment form
- Draft FR Notice of Availability (please provide any input you have, this is not subject to the 'showstoppers only' rule!)

Thank you for all your input and support on this project, and I look forward to hearing from all of you,

Sara D. DeCair, Health Physicist
www.epa.gov/radiation/rert/pags.htm
Center for Radiological Emergency Preparedness,
Prevention, and Response
U.S. Environmental Protection Agency
office (202) 343-9713
fax (202) 343-2304
cell (202) 253-3754
[attachment "A suggested layout for Chapter 6.doc" deleted by Stuart Walker/DC/USEPA/US] [attachment "Showstoppers Comment Form.doc" deleted by Stuart Walker/DC/USEPA/US] [attachment "FR Notice draft 3-27-2007.doc" deleted by Stuart Walker/DC/USEPA/US]

Thanks so much -
this is helpful.

Sara has sent messages to me and to Darrell, so we'll be in touch next week if necessary, but I'm confident that "all will go well."

Have a good week and week-end!

Cindy Anderson
U.S. EPA
Office of General Counsel
(202) 564-2690

Lee Veal---07/23/2010 05:16:25 PM---Cindy, We (staff and managers from CREM) won't actually be participating in the conversations with P

From: Lee Veal/DC/USEPA/US

To: Cindy Anderson/DC/USEPA/US@EPA

Date: 07/23/2010 05:16 PM

Subject: Re: PEER v. EPA, status of PAGs revisions today?

Cindy,

We (staff and managers from CREM) won't actually be participating in the conversations with PEER. We thought it would be more useful to have an independent person (Martha Bean in this case) convene the discussion. These will be individual one-on-one conversations, as opposed to group meetings. We will steer away from having her discuss/answer/mention/inquire on anything around the FOIA litigation. Indeed, she should not be familiar with the whole case (at least not based on anything we gave to her for background.)

I'm headed out of the office on leave, but Sara and Darrell will be in next week.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Cindy Anderson---07/23/2010 12:21:21 PM---great! thanks - - just let me know, please, when you plan to talk w/PEER. We should probably talk,

From: Cindy Anderson/DC/USEPA/US

To: Sara DeCair/DC/USEPA/US@EPA

Cc: Alan Perrin/DC/USEPA/US@EPA, edwards.jonathan@epa.gov, liles.darrell@epa.gov, Thomas

Agee/DC/USEPA/US@EPA, veal.lee@epa.gov

Date: 07/23/2010 12:21 PM

Subject: Re: PEER v. EPA, status of PAGs revisions today?

---

great!
thanks - - just let me know, please, when you plan to talk w/PEER. We should probably talk, you and I, in advance to be sure we're not stepping over some line vis a vis the litigation but I'm inclined to wait to talk to our AUSA about that until I know more about your plans, e.g., would such a call be to/with a group of several *stakeholders* [rather than one-on-one w/PEER], et..

I'll give you a call this later afternoon.

Cindy Anderson
U.S. EPA
Office of General Counsel
(202) 564-2690

Sara DeCair---07/23/2010 12:18:30 PM---Cindy, we did have a conference call yesterday with the all-feds multi-agency PAGs Subcommittee and

From: Sara DeCair/DC/USEPA/US

To: Cindy Anderson/DC/USEPA/US@EPA

Cc: Alan Perrin/DC/USEPA/US@EPA, Thomas Agee/DC/USEPA/US@EPA, veal.lee@epa.gov, edwards.jonathan@epa.gov, liles.darrell@epa.gov

Date: 07/23/2010 12:18 PM

Subject: Re: PEER v. EPA, status of PAGs revisions today?

Cindy, we did have a conference call yesterday with the all-feds multi-agency PAGs Subcommittee and tell them about our new direction on the revision. Since we're using a professional convener over the next five weeks or so to methodically gain input from stakeholders on the PAGs revision, and PEER is one of those stakeholders, it will be fair to talk to them about the new direction soon. I am cc'ing managers to see what they think, and to see whether I should check with the convener to make sure this is fair.
Thanks!
Sara
-----Cindy Anderson/DC/USEPA/US wrote: -----

To: Sara DeCair/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA
From: Cindy Anderson/DC/USEPA/US
Date: 07/23/2010 12:03PM
cc: Thomas Agee/DC/USEPA/US@EPA
Subject: PEER v. EPA, status of PAGs revisions today?

Sara, et al.

I've been exchanging e-mails today with John Interrante, the AUSA in the FOIA litigation. It's likely that

we'll seek an extension of time from the Court, beyond the current July 30 due date, for the parties to file a joint status report, the only question being whether we seek 30 days or more.

I'll obviously keep you posted. Christine Erickson is out-of-town until Monday and John is going to be on leave beginning next week, so he's been communicating with another attorney at PEER, Paula Dinerstein.

Meanwhile, did ORIA have a meeting or send some sort of notice to the InterAgency Review Subcttee members about current consideration concerning the direction for the PAGs manual revision?

Let me know - - thanks!

Cindy Anderson
U.S. EPA
Office of General Counsel
(202) 564-2690

Subject: Fw: Update on PAGs
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 6/9/2010 13:02:52

Lee---below is the email chain showing our most recent update to Markey's staff on the PAGs. It's time for another update----although I'm sure Markey and his staff are deeply involved with the gulf spill.

Please have one of your folks draft up a brief update for the Congressman's staff. We don't want to give specifics on policy direction yet, just say that we will be discussing that with the interagency very soon and will be more than happy to have a call with Markey's staff after that to discuss our political team's thinking (what we can discuss, before OMB weighs in) and interagency reaction. ---Jon

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 06/09/2010 12:56 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 03/31/2010 09:09 AM

Subject: Fw: Update on PAGs

Jon

Thanks for doing the update for Michal. She seems pleased.

----- Forwarded by Diann Frantz/DC/USEPA/US on 03/31/2010 09:07 AM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 03/31/2010 07:57 AM

Subject: Re: Update on PAGs

Thank you (and him) very much for the note. We really appreciate being kept up to date. We'll look forward to hearing more in a month or so.

Michal
Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sent using BlackBerry

----- Original Message -----
From: Frantz.Diann@epamail.epa.gov <Frantz.Diann@epamail.epa.gov>
To: Freedhoff, Michal
Sent: Tue Mar 30 18:22:57 2010
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Subject: Bob P Brief
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA CN=Jeffrey Blizzard/OU=DC/O=USEPA/C=US@EPA
Cc:
From: CN=Nate McMichael/OU=DC/O=USEPA/C=US
Submit Time: 12/3/2010 15:04:48

Here is a clean version. Thanks!
Bob P 12 10 2010 briefing paper COMBINED COMMENTS LV,NM 12.3.10.doc Bob P 12 10 2010 briefing paper COMBINED COMMENTS LV,NM 12.3.10.doc

Nate McMichael
U.S. Environmental Protection Agency
Radiation Protection Division
Office: (202) 343-9265
Cell: (202) 236-4176

From: "Fisher-Tyler Frieda (DHSS)" <Frieda.Fisher-Tyler@state.de.us>
To: Alan Perrin/DC/USEPA/US@EPA
Cc: Lee Veal/DC/USEPA/US@EPA 'Ruth McBurney' <rmcburney@crcpd.org>
Submit Time: 9/2/2010 10:00:22
Subject: RE: EPA Protective Action Guides

Good Morning, Alan.

I am awaiting a call back from Jeff Bean. Thanks for the invitation for CRCPD to participate on this important matter.

Regards,

Frieda Fisher-Tyler, MHS, CIH
Member at Large, CRCPD Board of Directors
Homeland Security/Emergency Response Council Chair

NRC State Liaison Officer, Delaware
Administrator, Office of Radiation Control
417 Federal Street
Dover, DE 19901

(302) 744-4546
(302) 739-3839, fax
* Think Green - Not every email needs to be printed.

-----Original Message-----
From: Perrin.Alan@epamail.epa.gov [mailto:Perrin.Alan@epamail.epa.gov]
Sent: Monday, August 30, 2010 11:47 AM
To: Fisher-Tyler Frieda (DHSS)
Cc: Veal.Lee@epamail.epa.gov
Subject: EPA Protective Action Guides

Dear Ms. Fisher-Tyler,

I am writing to invite you to help the EPA's Radiation Protection Division improve the Protective Action Guides (PAGs) Manual. The PAGs Manual provides emergency planners at the Federal, State, and local levels with guidance on protecting the public during a radiological incident.

The Radiation Protection Division has engaged EPA's Conflict Prevention and Resolution Center to identify ways we can work with stakeholders as we improve the PAGs Manual. We have engaged two neutral, third-party facilitators, Martha Bean of Collaborative Focus (www.collaborativefocus.com) and Jeff Bean of Beyond the Courthouse (www.beyondthecourthouse.com), to advise us.

As a first step, Jeff and Martha are scheduling conversations with key stakeholders. When they contact you, I'd be grateful if you would schedule time to talk with them. Your conversations will be confidential, so you can freely share your opinions, ideas and perspectives on the issues. Martha and Jeff will provide us with themes from the interviews. Based on these themes and their long expertise in the field of collaborative policy development, they will offer recommendations and options for how we might proceed.

If you have any questions, please contact Lee Veal of my staff at (202) 343-9448.

Sincerely,
Alan Perrin
~~~~~~~~~~~~~~~~~~~
Deputy Director, Radiation Protection Division
Office of Radiation and Indoor Air, USEPA
office: (202) 343-9775
mobile: (202) 279-0376
perrin.alan@epa.gov
~~~~~~~~~~~~~~~~~~~

Subject: Jon's Comments
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Sara DeCair/OU=DC/O=USEPA/C=US@EPA CN=Glenna Shields/OU=DC/O=USEPA/C=US@EPA
From: CN=Tony Nesky/OU=DC/O=USEPA/C=US
Submit Time: 12/1/2010 12:05:08

Dear Lee:

Here are scans of Jon and Alan's comments on the chapters.

Tony Nesky
Center for Radiation Information and Outreach
Tel: 202-343-9597
nesky.tony@epa.gov

jonscomments.PDF jonscomments.PDF **alanscomments.PDF** alanscomments.PDF

Submit Time: 5/19/2010 11:18:31
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
To: CN=Thomas Agee/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: Fw: (2 of 6 emails on latest FOIA)

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

----- Forwarded by Lee Veal/DC/USEPA/US on 05/19/2010 11:16 AM -----

From: Stuart Walker/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Cc: Elizabeth Southerland/DC/USEPA/US@EPA, Helen Dawson/DC/USEPA/US@EPA, RobinM Anderson/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA

Date: 05/19/2010 10:11 AM

Subject: Fw: (2 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 05/19/2010 10:06 AM -----

From: Stuart Walker/DC/USEPA/US

To: Susan Stahle/DC/USEPA/US@EPA

Cc: Charles Openchowski/DC/USEPA/US@EPA, Cindy Anderson/DC/USEPA/US@EPA, Elliott Zenick/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA

Date: 04/09/2010 11:29 AM

Subject: Fw: (2 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 04/09/2010 11:17 AM -----

From: Elizabeth Southerland/DC/USEPA/US

To: Stuart Walker/DC/USEPA/US@EPA, Helen Dawson/DC/USEPA/US@EPA, Davidw Charters/ERT/R2/USEPA/US@EPA

Date: 04/08/2010 05:36 PM

Subject: Re: (2 of 6 emails on latest FOIA)

I can't perceive any reason to refuse a release of these emails.
Stuart Walker

----- Original Message -----
From: Stuart Walker
Sent: 04/07/2010 03:48 PM EDT
To: Elizabeth Southerland; Helen Dawson; DavidW Charters
Subject: (2 of 6 emails on latest FOIA)

----- Forwarded by Stuart Walker/DC/USEPA/US on 04/07/2010 03:42 PM -----

From: Stuart Walker/DC/USEPA/US

To: Tom Kelly/DC/USEPA/US@EPA, John Michaud/DC/USEPA/US@EPA

Cc: Alan Perrin/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA, Colby Stanton/DC/USEPA/US@EPA, Elizabeth Southerland/DC/USEPA/US@EPA, Jerome Puskin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, Mike Boyd/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA

Date: 09/16/2009 03:06 PM

Subject: Re: Response to OGC Comments on PAG Technical Content

---

Hi Tom and John,

Since the OGC comments are derived from my comments of May 15, 2007, for OSRTI on the draft ORIA PAGs of April 2007, Betsy Southerland asked me to comment on the attachment from the ORIA technical staff. Attached please see my comments on the ORIA technical staff comments.

ORIA technical response to SWERLO stuart.doc ORIA technical response to SWERLO_stuart.doc

There are several key things that I should mention about my comments:

1. My comments were based on what the PAG allows, not how it is likely to be implemented. This is particularly important when discussing the potential precedent established by some of the provisions of the PAGs. Outside entities may argue that EPA is recommending that a given level of exposure is acceptable because that is what is written in the PAG, even if ORIA staff believe that such an exposure is not feasible.

2. The ORIA PAGs, unlike the DHS PAGs, are not limited to or focused on responses following terrorist attacks. For example, the "Application" section of the ORIA PAG states "Protective actions may be recommended for a wide range of incidents, but generally would be utilized for incidents involving relatively significant releases of radionuclides. Examples of radiological incidents that have potential for significant releases are: a transportation accident involving spent nuclear fuel, a fire in a major facility such as a fuel manufacturing plant, an accident at a Federal weapons complex facility, an accident at a commercial nuclear power plant, or an act of radiological or nuclear terrorism."

3. The ORIA PAGs are not limited to events where there is a single release into drinking water. The drinking water PAG could apply in a situation where there is a continual recharge from the source term into the drinking water. For example, leaks from the tank farm at the DOE Hanford NPL site or seepage from the mine tailings at the Homestake NPL site. Also, NRC has had issues with ongoing leaks of tritium from operating nuclear power plants.

4. The OSRTI comments of 5/15/2007 are not comparing the apples and oranges of use of MCLs by public water systems during normal operations and the drinking water PAGs during the intermediate phase after a radiological incident. Rather, the OSRTI comments are comparing the methodology for Removal Action Levels (RALs) issued by the Superfund removal program for addressing emergency responses with the drinking water PAGs for the intermediate phase. Previously, the RAL methodology in OSWER Directive 9360.1-02 "Final Guidance on Numeric Removal Action Levels for Contaminated Drinking Water Sites" (October 25, 1993) recommended providing alternative drinking water supplies during CERCLA removal actions when water is contaminated above a concentration corresponding to the MCL or 1 x 10-4 cancer risk using EPA's Office of Water methodology (e.g., 70 period of exposure and cancer morbidity), whichever allows the greater concentration.

Since ORIA is planning to drop these two radionuclides (Te-129 and Te-127) out of any future draft of the drinking water PAGs, there will no be a concern acute effects in the future (see yellow highlighted language below). But my other comments regarding the drinking water PAGs exceeding the drinking water RALs would remain, especially now that the updated RAL methodology (see "Revised Superfund Removal Action Levels" issued September 17, 2008) uses MCLs when available rather than allowing up to 1 x 10-4 concentrations. See attached below my previous 5/15/2007.

----- Forwarded by Stuart Walker/DC/USEPA/US on 09/16/2009 11:13 AM -----

From: Stuart Walker/DC/USEPA/US

To: Sara DeCair/DC/USEPA/US@EPA

Cc: Doug Ammon/DC/USEPA/US@EPA, Colby Stanton/DC/USEPA/US@EPA, Elizabeth Southerland/DC/USEPA/US@EPA, Juan Reyes/DC/USEPA/US@EPA

Date: 05/15/2007 06:04 PM

Subject: Re: ACTION REQ'D: Five-week review of PAG Manual

Hi Sara,

Thanks for providing us an opportunity to review the latest draft of the ORIA PAGs. OSRTI does not have any showstoppers. We request that you let us review a redline/~~strikeout~~ version of the next draft after you incorporate comments from the workgroup.

Since, this is the first draft of the ORIA PAG to include concentrations for the drinking water and food interdiction PAGs, we are submitting revised substantive comments on both those PAGs from our comments on the last draft. Our comments on both the drinking water and food interdiction PAGs include a comparison of the PAG concentrations to risk based concentrations, and in the case of the drinking water PAGs, MCLs. These comparisons are similar to the comments I sent Ed Tupin 3-4-2004 on an early draft of the water PAGs.

OSRTI comment on ORIA PAGsApril2007v1.doc OSRTI comment on ORIA PAGsApril2007v1.doc

Below is further explanaition of the analysis discussed in the comments on the water and food PAGs.

Water PAGs

Chronic effects

I put together 3 Lotus 123 Tables comparing ORIA's PAG concentrations to MCLs and concentrations corresponding to a 1 x 10-4 cancer risk. I used MCLs and 10-4 since these are measures EPA utilizes when making decisions about providing bottled water during emergencies involving class A carcinogens. I noticed that a number of the ORIA PAG concentrations are thousands of times higher than the MCLs or 1 x 10-4 (a few are over a hundred thousand times higher). This is not evident without looking at the concentrations since the MCL for most radionuclides is 4 mrem/yr and the PAG is 500 mrem/yr. However, I understand that different science may have something to do with it since the MCL is based on ICRP 2 methodology and the PAG is ICRP 60/72 methodology, however the 1 x 10-4 risk based concentrations are also based on ICRP 60/72.

Here is an explanation of the comparison tables I put together on the water PAGs and the 3 tables themselves.

2007ExplainCompareTables.pdf 2007ExplainCompareTables.pdf **2007CompareTable_byRisk.123** 2007CompareTable_byRisk.123 **2007CompareTable_byMCL.123** 2007CompareTable_byMCL.123 **2007CompareTable_byRad.123** 2007CompareTable_byRad.123

Subchronic effects

It also appears that drinking water at the PAG concentrations for Te-129 and Te-127 may lead to subchronic (acute) effects acute following exposures of a day or a week. In a population, one should see some express of acute effects (not deaths) above 0.25 Gy (25 rad) - that is, vomiting, fever etc. The Te-129 absorbed dose at 1 week was 1.8 Gy (180 rad) for 14 L intake. For these two radionuclides, an acute radiation syndrome (ARS) involving the GI-tract is indicated. Acute dose coefficients for a 30 d period were calculated for the adult using the AcutDose. This analysis focused only on the 16 radionuclides where drinking water at the PAG concentration for 1 week or less would exceed the amount of radioactivity received from drinking a 1 x 10-4 cancer risk level assuming 70 years of exposure.

Food PAGs

I also put together 3 Lotus 123 Tables comparing ORIA's food PAG concentrations that were adopted from FDA to concentrations corresponding to a 1 x 10-4 cancer risk. I used 10-4 since the food interdiction situation is somewhat analogous to the decision of when to provide drinking water. I noticed that some of the ORIA PAG concentrations are hundreds, even thousands of times higher than the MCLs or 1 x 10-4 .

Here is an explanation of the comparison tables I put together on the food PAGs and the 3 tables themselves.

2007ExplainCompareFOODTables.pdf 2007ExplainCompareFOODTables.pdf **2007CompareFoodTable_convertPRG.123** 2007CompareFoodTable_convertPRG.123 **2007CompareFoodTable.123** 2007CompareFoodTable.123 **2**

007CompareFoodTable_byRad.123 2007CompareFoodTable_byRad.123
Sara DeCair/DC/USEPA/US

Sara DeCair/DC/USEPA/US

04/10/2007 10:26 AM

To
Andrew.Wallo@eh.doe.gov, cmw6@cdc.gov, cym3@cdc.gov
Subject

PAGs Reviewers;

It is time for the final federal review, via FRPCC, of the PAG Manual prior to going into the Federal Register for public comment! This is a SHOWSTOPPERS ONLY review and we are asking for you to obtain your agency or department's (or your AA-ship's within EPA) buy-in on this Manual so we can release it. The five weeks start on April 10th and end on May 15th. Your showstopper comments are due no later than May 15th.

A showstopper is defined as a statement or concept that your agency or department sees as so problematic that we cannot release the Manual for public comment. Since this is the last of several rounds of review, we hope there will not be any such issues. Note that I will be checking in with you over the next few weeks to check on your progress and to see if you have any questions or potential showstoppers.

After this review and our incorporation of any final changes, I will submit the final draft Manual to my management in the Office of Air and Radiation along with the final draft FR Notice of Availability for approval. We plan to issue the FR Notice in June and provide a 60-day comment period.

To access the document:
Go to the contractor's FTP site at: ftp://205.158.69.157/
User name: clients Password: welcometoendyna
In the EPA ORIA folder, you will find both Word and PDF versions -- I suggest you print from the Word version with 'View, Markup' turned OFF.

Attachments:
- A suggested re-organization for Chapter 6 that may improve readability
- Comment form
- Draft FR Notice of Availability (please provide any input you have, this is not subject to the 'showstoppers only' rule!)

Thank you for all your input and support on this project, and I look forward to hearing from all of you,

Sara D. DeCair, Health Physicist
www.epa.gov/radiation/rert/pags.htm
Center for Radiological Emergency Preparedness,
Prevention, and Response

U.S. Environmental Protection Agency
office (202) 343-9713
fax (202) 343-2304
cell (202) 253-3754
[attachment "A suggested layout for Chapter 6.doc" deleted by Stuart Walker/DC/USEPA/US] [attachment "Showstoppers Comment Form.doc" deleted by Stuart Walker/DC/USEPA/US] [attachment "FR Notice draft 3-27-2007.doc" deleted by Stuart Walker/DC/USEPA/US]

Tom Kelly---09/14/2009 11:05:30 AM---John, I am just back from vacation and, as I promised earlier, I want to share with you a brief repl

From: Tom Kelly/DC/USEPA/US

To: John Michaud/DC/USEPA/US@EPA

Cc: Elizabeth Southerland/DC/USEPA/US@EPA, Charles Openchowski/DC/USEPA/US@EPA, Stuart Walker/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Jerome Puskin/DC/USEPA/US@EPA, Mike Boyd/DC/USEPA/US@EPA, Colby Stanton/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA

Date: 09/14/2009 11:05 AM

Subject: Response to OGC Comments on PAG Technical Content

John, I am just back from vacation and, as I promised earlier, I want to share with you a brief reply prepared by RPD's technical experts to Charles Openchowski's comments on a recent desk statement regarding a draft Program Action Guide for Drinking Water.

Of course, it is always important that the Agency's internal dialogue be factually based and reflect a sound understanding of the technical and policy issues in play. That is especially true in situations involving radiation health effects, in which there is so much room for an initial misunderstanding to be amplified in an atmosphere of public controversy.

We are naturally concerned that OGC has offered us a written comment to the effect that the PAG for Drinking Water, as drafted, would support public exposure to radiation at levels that may cause acute health effects. Our health physicists advise that this is not true and that OGC's comment to this effect is ill-founded. I believe it important to correct the record to ensure such misinformation is not repeated, either internally or externally, as though it were the considered legal advice of OGC to the program.

Comments from our technical staff are attached.

Tom

[attachment "ORIA technical response to SWERLO.doc" deleted by Stuart Walker/DC/USEPA/US]

Subject: Draft msg to Subcmte, Ch 1-2-3 for you to read before I send them out
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Tony Nesky/OU=DC/O=USEPA/C=US@EPA CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
Submit Time: 12/1/2010 12:20:18

Plz provide any feedback as soon as you can on these chapters and the draft email message? I'd like to send it out first thing tomorrow morning. Tony is finishing FR Notice edits right now so that'll be to you soon -- Thanks!!

PAGs Subcommittee;

Here is a draft Federal Register Notice for Public Review and new, improved, streamlined PAGs Chapters for you to review. The revised Manual has only 3 chapters: 1 (Overview), 2 (Early), and 3 (Intermediate). We'd like to get your feedback on the draft during the month of December.

PAGChapter3Nov 30 2010.doc PAGChapter3Nov 30 2010.doc PAGChapter1Nov 30 2010.doc PAGChapter1Nov 30 2010.doc PAGChapter2Nov 30 2010.doc PAGChapter2Nov 30 2010.doc

We're proposing to incorporate the Food PAGs by reference to the FDA guidance, and also to refer the readers to the FRMAC Assessment Manuals (available online as of April) for calculation of DCFs, DRLs, and the tables themselves. This significantly reduces the length of the Manual (less than 50 pages total) and keeps the guidance more current as each of these pieces is updated in the future.

To discuss these proposals and areas in the PAGs that refer to your agency's mission or guidance, let's find a mutually agreeable time to meet in person (or phone) in the next couple weeks. Please tell me which of these times is NOT agreeable for you, via email, by Mon., Dec. 6th. Thank you for your support of this project!

Proposed meeting times:

Thurs., Dec. 9, 9:00 to 11:00 am
Thurs., Dec. 9, 1:00 to 3:00 pm
Thurs. Dec. 9, 2:30 to 4:30 pm
Tues., Dec. 14, 9:00 to 11:00 am
Wed., Dec. 15, 1:00 to 3:00 pm
Wed. Dec. 15, 2:30 to 4:30 pm

Sara
Sara D. DeCair, Health Physicist
www.epa.gov/radiation/rert/pags.html
Center for Radiological Emergency Management
U.S. Environmental Protection Agency
office (202) 343-9713
fax (202) 343-2304
decair.sara@epa.gov

I have a call in to Lisa Nanko to chat with her about the pre-brief timing. I thought that I would mention this upcoming exchange with the Congressman's staff as well.

LV

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Jonathan Edwards---12/01/2010 08:31:21 AM---FYI ----------

From: Jonathan Edwards/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA, "Perrin Alan" <perrin.alan@epa.gov>

Date: 12/01/2010 08:31 AM

Subject: Fw: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

FYI

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Gina McCarthy

----- Original Message -----
From: Gina McCarthy
Sent: 11/30/2010 08:55 PM EST
To: Mike Flynn
Cc: Jonathan Edwards; Joseph Goffman
Subject: Re: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
Mike - Hard to know if they are open to a delay to allow us to better inform the discussion. We can certainly talk to them about our efforts to reshape the PAGs. It will be up to Deb and Bob P if they feel comfortable having someone talk to Markey's staff about the clean up issues at this point. The one thing I don't want is for his staff to think we are hiding. Since Markey is from neck of the woods, I can join if you want. I know they have not been kind to us in the recent past.

Mike Flynn---11/30/2010 05:49:11 PM---Gina, Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (

From: Mike Flynn/DC/USEPA/US
To: Gina McCarthy/DC/USEPA/US@EPA
Cc: Joseph Goffman/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 11/30/2010 05:49 PM
Subject: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

Gina,

Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (see below). I have a call into Debbie Dietrich to coordinate on timing and the cleanup discussion since OHS has been the Agency lead on the senior level rad exercises. Should we try to delay this meeting till after the Bob P meeting, or at least till after the AA prebrief?

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 11/30/2010 01:13 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 11/30/2010 01:01 PM

Subject: Fw: Update on PAGs

Jon,

Could you call me about this request?

Diann
564-2668
----- Forwarded by Diann Frantz/DC/USEPA/US on 11/30/2010 12:59 PM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

Subject: RE: Update on PAGs

Hi Diann and hope you had a great holiday

We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sign-up to receive e-updates from Rep. Markey at http://markey.house.gov/signup

-----Original Message-----

From: Frantz.Diann@epamail.epa.gov [mailto:Frantz.Diann@epamail.epa.gov]
Sent: Tuesday, March 30, 2010 6:23 PM
To: Freedhoff, Michal
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Subject: PAGs per Mike's request
From: CN=Sara DeCair/OU=DC/O=USEPA/C=US
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA CN=Mike Flynn/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Darrell Liles/OU=DC/O=USEPA/C=US@EPA
Submit Time: 4/20/2011 08:00:05

PAGs Manual, per Mike's request this morning. We just finished adding a few more conversions to international units the other day. The note below is one I proposed to have Jon Edwards send to the FRPCC for concurrence right when the Japan incident started to take our attention. Thanks for letting me know what I should do! I will be in the EOC today...

FRPCC and PAGs Subcommittee;

Thank you for your insightful comments and suggestions on our new PAGs Manual revision and the accompanying Federal Register notice for public review and comment. We've incorporated your comments and have attached the updated versions and responses to all your comments.

We know you are all very busy, watching the events unfold in Japan, where a natural disaster and human tragedy is being compounded by several nuclear power plants suffering damage and releasing radioactive materials. In light of those unexpected events, we think it's even more critical to get this updated PAGs Manual out for review than ever before.

The PAGs Subcommittee members are well-informed and can brief the FRPCC representatives on what the revision contains, and we are asking that you provide your Department or Agency's official concurrence, via email to myself, in two weeks, by noon on Friday, March 25th. This is a showstoppers-only review, with a short turnaround, to facilitate getting the document to OMB and into the Federal Register for public review and comment.

Thank you for your continued support of this important guidance,

Jon Edwards

Director, Radiation Protection Division**draft pags fr notice 3-11-2011.docx** **pags manual comment responses 3-11-2011.xlsx** **pags fr notice comment responses 3-11-2011.xlsx** **draftpagmanual for interagency review 4-14-11.doc**

Smita,

We finished the comments to Chap 1! All the comments should have responses.

Lee,

Do you want to look at these? There are some that we have noted for additional work.

Copy of PAGs Comments 2-24-2011 11 AM Liles.xlsx Copy of PAGs Comments 2-24-2011 11 AM Liles.xlsx

Darrell Liles
Health Physicist
Center for Radiological Emergency Management
Environmental Protection Agency MC-6608J
1200 Pennsylvania Ave NW
Washington DC 20460-1000
Phone (202)343-9550

Mike,

I expect to have Calvin Terada and Chris Field from their Superfund/Emergency Response program, and Marianne Holsman from their public affairs program. Our rad guy, Davis Zhen has not responded yet, but we are double-checking with all participants today.

In case you need more info, here is the list of who has confirmed their participation:

Region 10:
Calvin Terada
Chris Field
Marianne Holsman

Region 9:
Dan Meer
Shelly Rosenblum

OEM:
Tito Irrizary
Peter Oh

OEA:
Dale Perry

ORIA:
Lee Veal
Kathryn Snead
Jeff Blizzard

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Mike Flynn---08/04/2011 10:47:02 AM---Lee, who do you expect to be on your call with the Regions Monday from Reg 10? Mike Flynn, Director

From: Mike Flynn/DC/USEPA/US
To: Lee Veal/DC/USEPA/US@EPA
Date: 08/04/2011 10:47 AM
Subject: Fw: Update on Monday's Busy Agenda

Lee, who do you expect to be on your call with the Regions Monday from Reg 10?

Mike Flynn, Director
Office of Radiation and Indoor Air (MC-6601-J)
U.S. Environmental Protection Agency

Phone: (202) 343-9320
Fax: (202) 343-2395
----- Forwarded by Mike Flynn/DC/USEPA/US on 08/04/2011 10:45 AM -----

From: Jonathan Edwards/DC/USEPA/US
To: Mike Flynn/DC/USEPA/US@EPA
Cc: Alan Perrin/DC/USEPA/US@EPA, Anna Duncan/DC/USEPA/US@EPA
Date: 08/04/2011 10:23 AM
Subject: Fw: Update on Monday's Busy Agenda

Mike-- FYI. A lot of stuff has popped up for the radiation program next Monday---note staff-level discussion on PAGs and several other key meetings.....Jon
----- Forwarded by Jonathan Edwards/DC/USEPA/US on 08/04/2011 10:17 AM -----

From: Lee Veal/DC/USEPA/US
To: Jonathan Edwards/DC/USEPA/US@EPA
Cc: Alan Perrin/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Darrell Liles/DC/USEPA/US@EPA, Mike Boyd/DC/USEPA/US@EPA, Rafaela Ferguson/DC/USEPA/US@EPA
Date: 08/04/2011 10:16 AM
Subject: Update on Monday's Busy Agenda

Jon,

I'd like to give you an update on several meetings taking place on Monday, August 8.

1. **PAGs discussion with OMB Staff**, 1pm. There is a 30-minute OMB staff level conference call scheduled for 1pm to answer a few of OMB's initial questions on the draft PAGs package. Sara DeCair will be on vacation but calling in. Alan Perrin, Darrell Liles, Bill Nickerson will be on for EPA. Margo Schwab and a new person, Chad Whiteman from OMB.

2. **ISCORS.** You are in the ISCORS meeting all afternoon. I'll present on the Japan event, roughly 20 minutes beginning in a 1pm session. I'll need to leave just before 2pm.

3. **R9/R10 AAR** Conference call at 2pm-3pm. I scheduled this some time ago with Regions 9, 10, OEM, OEA to discuss their RAs' letter to Bob P on doing a Fukushima event after action review. This call should close the loop on any outstanding issues for those 2 Regions (at least it is my goal.)

4. **Air Division Directors' Call at 4pm**. I am planning to cover the Japan portion of the call. I'm preparing a 1-2 pager to share ahead of time and will send that to you and others today.

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

I finished Chapter 3 but am on a call now. Can you stop by?

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Tony Nesky---12/01/2010 10:39:17 AM---Dear Sara and Lee: Attached are the latest versions of Chapters 1,2, and 3 of the PAGs. These versi

From: Tony Nesky/DC/USEPA/US

To: Sara DeCair/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA

Cc: Glenna Shields/DC/USEPA/US@EPA

Date: 12/01/2010 10:39 AM

Subject: Chapters 1, 2,3 of the PAGs

Dear Sara and Lee:

Attached are the latest versions of Chapters 1,2, and 3 of the PAGs. These versions have been edited to incorporate Sara's feedback from yesterday. I'm also attaching a mark-up version of each chapter to help you find the changes.

I have done my best to give these a thorough, line by line review, but I fear that I am simply too close to the document, and that review with a pair of fresh eyes is needed. Please note that when I say "fresh eyes, " I am referring to "Lee."

I'll get any changes you need right back to you today.

Tony Nesky
Center for Radiation Information and Outreach
Tel: 202-343-9597
nesky.tony@epa.gov

[attachment "Chapter1changes11-30-10.doc" deleted by Lee Veal/DC/USEPA/US] [attachment "Chapter 2edits11-30-10.doc" deleted by Lee Veal/DC/USEPA/US] [attachment "Chapter 3edits11-30-10.doc" deleted by Lee Veal/DC/USEPA/US] [attachment "PAGChapter1-11-30-10.doc" deleted by Lee Veal/DC/USEPA/US] [attachment "PAGChapter2-11-30-10.doc" deleted by Lee Veal/DC/USEPA/US] [attachment "PAGChapter 3 11-30-10.doc" deleted by Lee Veal/DC/USEPA/US]

Sure. Do you want us there at 3pm or 330pm? I think that you may have the room at 330.

We will arrive a few minutes early either way to get through security.

Lee

Lee B. Veal
Director, Center for Radiological Emergency Response
Radiation Protection Division
U.S. Environmental Protection Agency
Office 202 343 9448
Cell. 202 617 4322

----- Original Message -----
From: "Schwab, Margo" Ex. 6 - Personal Privacy
Sent: 09/19/2011 11:29 AM AST
To: Lee Veal
Cc: Alan Perrin; "Whiteman, Chad" Ex. 6 - Personal Privacy; Sara DeCair; "Johnson, Kim I." Ex. 6 - Personal Privacy
Subject: RE: Sara out - call Alan or Lee?

Lee - Please have your folks send the information listed below to Kim Johnson for clearance for our meeting tomorrow at 3pm in room 10103 (10th floor) of the New Executive Office Building (NEOB). If you prefer, you can use the attached spreadsheet. If folks wish to call your information in, Kim's phone number is 202 395 3785. Please send the information BEFORE 3pm today, as our security folks now require 24 hour notice. We look forward to meeting you. Margo

First Name
Full Middle Name or Middle Initial - enter NMN if there is no Middle Name
Last Name
Date of Birth - must be entered month/date/ year
Gender - This should match the information on the individual's identification
Social Security number - A Social Security number is required for US citizens 18 years old and older.
US Citizen - Yes or No
Country of Birth - This is the country where the individual was born.
City and State of Residence - This is the individual's primary residence. The city and state of residence for foreign visitors should match the location where they are staying in the United States.

-----Original Message-----
From: Veal.Lee@epamail.epa.gov [mailto:Veal.Lee@epamail.epa.gov]
Sent: Friday, September 16, 2011 3:42 PM

To: Schwab, Margo
Cc: Perrin.Alan@epamail.epa.gov; Whiteman, Chad; DeCair.Sara@epamail.epa.gov
Subject: RE: Sara out - call Alan or Lee?

Indeed it will.

Lee B. Veal
Director, Center for Radiological Emergency Management Radiation Protection Division
Office of Radiation and Indoor Air Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

From: "Schwab, Margo" Ex. 6 - Personal Privacy
To: Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA
Cc: Alan Perrin/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA,
"Whiteman, Chad" Ex. 6 - Personal Privacy
Date: 09/16/2011 03:07 PM
Subject: RE: Sara out - call Alan or Lee?

I can get a room from 3:30-4:30. Will that work for you (instead of the original time that we discussed - 2:30)?

-----Original Message-----
From: Veal.Lee@epamail.epa.gov [mailto:Veal.Lee@epamail.epa.gov]
Sent: Thursday, September 15, 2011 5:45 PM
To: DeCair.Sara@epamail.epa.gov
Cc: Schwab, Margo; Alan Perrin; Lee Veal
Subject: Re: Sara out - call Alan or Lee?

Margo,

I am happy to give you a call in the morning. Could I get your phone number and a good time to call?

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management Radiation Protection Division
Office of Radiation and Indoor Air Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J

202-343-9448
cell 202-617-4322

From: Sara DeCair/DC/USEPA/US
To: "Schwab, Margo" Ex. 6 - Personal Privacy
Cc: "Alan Perrin" <perrin.alan@epa.gov>, "Lee Veal" <veal.lee@epa.gov>
Date: 09/15/2011 02:44 PM
Subject: Sara out - call Alan or Lee?

Margo, thanks for your message. In order not to delay until I return tomorrow afternoon, could you call Alan (202-343-9775) or Lee
(202-343-9448) to talk about how to get our PAGs cmts done? Many thanks!
Sara

Sent by EPA Wireless E-Mail Services

Subject: Fw: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 12/1/2010 08:35:15
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA "Perrin Alan" <perrin.alan@epa.gov>

FYI

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)

From: Mike Flynn
Sent: 12/01/2010 07:26 AM EST
To: Gina McCarthy
Cc: Jonathan Edwards; Joseph Goffman
Subject: Re: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

Gina,
Thanks - we'll talk to OCIR about timing but our sense is they won't want to delay. As you say, we can give them an overview of our approach to PAGs and we'll talk to Deb and OSWER about how they want to handle the clean-up discussion.

Mike

-----Gina McCarthy/DC/USEPA/US wrote: -----

To: Mike Flynn/DC/USEPA/US@EPA
From: Gina McCarthy/DC/USEPA/US
Date: 11/30/2010 08:55PM
Cc: Jonathan Edwards/DC/USEPA/US@EPA, Joseph Goffman/DC/USEPA/US@EPA
Subject: Re: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

Mike - Hard to know if they are open to a delay to allow us to better inform the discussion. We can certainly talk to them about our efforts to reshape the PAGs. It will be up to Deb and Bob P if they feel comfortable having someone talk to Markey's staff about the clean up issues at this point. The one thing I don't want is for his staff to think we are hiding. Since Markey is from neck of the woods, I can join if you want. I know they have not been kind to us in the recent past.

Mike Flynn---11/30/2010 05:49:11 PM---Gina, Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (

From: Mike Flynn/DC/USEPA/US
To: Gina McCarthy/DC/USEPA/US@EPA
Cc: Joseph Goffman/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 11/30/2010 05:49 PM
Subject: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

Gina,

Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (see below). I have a call into Debbie Dietrich to coordinate on timing and the cleanup discussion since OHS has been the Agency lead on the senior level rad exercises. Should we try to delay this meeting till after the Bob P meeting, or at least till after the AA prebrief?

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 11/30/2010 01:13 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 11/30/2010 01:01 PM

Subject: Fw: Update on PAGs

Jon,

Could you call me about this request?

Diann
564-2668
----- Forwarded by Diann Frantz/DC/USEPA/US on 11/30/2010 12:59 PM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

Subject: RE: Update on PAGs

Hi Diann and hope you had a great holiday

We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sign-up to receive e-updates from Rep. Markey at http://markey.house.gov/signup

-----Original Message-----
From: Frantz.Diann@epamail.epa.gov [mailto:Frantz.Diann@epamail.epa.gov]
Sent: Tuesday, March 30, 2010 6:23 PM
To: Freedhoff, Michal
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Thomas,

I agree with Cindy.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Thomas Agee---05/24/2010 11:43:41 AM---Okay. Please see the email I just sent to Sue and Cindy, copying you. It included that email and req

From: Thomas Agee/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Date: 05/24/2010 11:43 AM

Subject: Re: Fw: Doug Guarino FOIA- potentially responsive material (2 of 2)

Okay. Please see the email I just sent to Sue and Cindy, copying you. It included that email and requested their guidance. Let me know if you have objections to what was written.

Thomas Agee
Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Email: agee.thomas@epa.gov
Office: (202)-343-9933
Fax: (202)-343-2302

Lee Veal---05/24/2010 11:41:26 AM---I'd like to send that one. The OGC folks can tell us that it is not responsive. Lee B. Veal Directo

From: Lee Veal/DC/USEPA/US

To: Thomas Agee/DC/USEPA/US@EPA

Date: 05/24/2010 11:41 AM

Subject: Re: Fw: Doug Guarino FOIA- potentially responsive material (2 of 2)

I'd like to send that one. The OGC folks can tell us that it is not responsive.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Thomas Agee---05/24/2010 11:04:07 AM---Right. Wynne was doubtful herself. I think her office was maybe interpreting these messages as respo

From: Thomas Agee/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Date: 05/24/2010 11:04 AM

Subject: Re: Fw: Doug Guarino FOIA- potentially responsive material (2 of 2)

Right. Wynne was doubtful herself. I think her office was maybe interpreting these messages as responsive to the "acute health effects" concerns. Your thoughts on Dave Huber's message?

Thomas Agee
Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Email: agee.thomas@epa.gov
Office: (202)-343-9933
Fax: (202)-343-2302

Lee Veal---05/24/2010 11:00:37 AM---Thomas, I don't see how this is responsive to Doug's request.

From: Lee Veal/DC/USEPA/US

To: Thomas Agee/DC/USEPA/US@EPA

Date: 05/24/2010 11:00 AM

Subject: Re: Fw: Doug Guarino FOIA- potentially responsive material (2 of 2)

Thomas,

I don't see how this is responsive to Doug's request.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air

Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington DC, 20460
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Thomas Agee---05/24/2010 10:06:09 AM---And here are Wynne Miller's messages... Thomas Agee
Radiological Emergency Management

From: Thomas Agee/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA

Date: 05/24/2010 10:06 AM

Subject: Fw: Doug Guarino FOIA- potentially responsive material (2 of 2)

And here are Wynne Miller's messages...

Thomas Agee
Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Email: agee.thomas@epa.gov
Office: (202)-343-9933
Fax: (202)-343-2302
----- Forwarded by Thomas Agee/DC/USEPA/US on 05/24/2010 10:03 AM -----

From: Wynne Miller/DC/USEPA/US

To: Thomas Agee/DC/USEPA/US@EPA

Cc: David Huber/DC/USEPA/US@EPA

Date: 05/21/2010 06:27 PM

Subject: PAG FOIA

Hi Thomas,
I am responding to the request you sent Pam about the FOIA.
I searched all my emails for "Tom Kelley" and found nothing.
Then I searched for PAGs and acute ... and only found the two below from Sara in which acute health effects is mentioned in the briefing.
I don't think these are relevant to the Tom Kelley emails but here ya go.
Thx
Wynne

----- Forwarded by Wynne Miller/DC/USEPA/US on 05/21/2010 06:23 PM -----

From: Sara DeCair/DC/USEPA/US

To: Colby Stanton/DC/USEPA/US@EPA, William Nickerson/DC/USEPA/US@EPA, Susan

Stahle/DC/USEPA/US@EPA, Wynne Miller/DC/USEPA/US@EPA, Eric Burneson/DC/USEPA/US@EPA, David Huber/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, Nate McMichael/DC/USEPA/US@EPA, Jessica Wieder/DC/USEPA/US@EPA, Evans Stamataky/R2/USEPA/US@EPA

Cc: Sarah Bowling/DC/USEPA/US@EPA

Date: 06/30/2009 09:26 AM

Subject: Draft PAGs briefing for AAs

Good morning all,

Attached is the latest version of our draft briefing for our new AA(s). Thank you for your input on it, and for any other ideas for approaching our new leadership! For the meeting on Monday, July 6th with the Office of Water, we'll focus on discussing the alternative options on page 6 of the briefing.

Have a great day,

Sara
Sara D. DeCair, Physicist
www.epa.gov/radiation/rert/pags.html
Center for Radiological Emergency Management
U.S. Environmental Protection Agency
office (202) 343-9713
fax (202) 343-2304
decair.sara@epa.gov

[attachment "Briefing- PAGs for Gina McCarthy 6-30-2009.doc" deleted by Lee Veal/DC/USEPA/US]

----- Forwarded by Wynne Miller/DC/USEPA/US on 05/21/2010 06:20 PM -----

From: Sara DeCair/DC/USEPA/US

To: Colby Stanton/DC/USEPA/US@EPA, Wynne Miller/DC/USEPA/US@EPA, Jessica Wieder/DC/USEPA/US@EPA, Nate McMichael/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, David Huber/DC/USEPA/US@EPA

Cc: William Nickerson/DC/USEPA/US@EPA, Susan Stahle/DC/USEPA/US@EPA

Date: 06/17/2009 11:39 AM

Subject: Latest PAGs briefing for new administration

All;

We've discussed with Elizabeth some possible alternatives to present in addition to or instead of our proposed Drinking Water PAG -- those are at the end of this newly revised PAGs briefing, but I am very interested in any input on the order, content, and scope of this briefing! This version, with your input, may be used during a soon-to-be-scheduled meeting with Elizabeth and Cynthia to get ready for potentially a joint OW/OAR AAs meeting.

Thank you for all your help in getting this latest version together, and for any additional input. Have a great day!

Sara

[attachment "Briefing- PAGs for Gina McCarthy 6-17-2009.doc" deleted by Lee Veal/DC/USEPA/US]

From: "Collins, Richard" <Richard.Collins@dhs.gov>
To: Alan Remick <alan.remick@nnsa.doe.gov> Albert Mongeon <albert.mongeon@noaa.gov> Andrew Wallo <andrew.wall@hq.doe.gov> Barbara Stunder <barbara.stunder@noaa.gov> Bernard Bogdan <Bernard.Bogdan@ic.fbi.gov> Bernice Zaidel <bernice.zaidel@dhs.gov> "Blue, Charles" <Charles.Blue@dhs.gov> Brad Leissa <brad.leissa@fda.hhs.gov> "Brittan E. Hill" <Brittain.Hill@nrc.gov> Bruce Young <bruce.young@med.va.gov> "Bruce.Young@va.gov" <Bruce.Young@va.gov> Charles Miller <CYM3@cdc.gov> Colleen O'Laughlin <olaughlin@nv.doe.gov> Daniel Blumenthal <Daniel.Blumenthal@nnsa.doe.gov> Danny McClung <danny.k.mcclung@va.gov> "Danny.McClung2@va.gov" <Danny.McClung2@va.gov> "'david.bowman@nnsa.doe.gov'" <david.bowman@nnsa.doe.gov> "Davis, Bruce" <Bruce.A.Davis@dhs.gov> "dean.mccauley@gsa.gov" <dean.mccauley@gsa.gov> Sara DeCair/DC/USEPA/US@EPA "edward.mcguire@dhs.gov" <Edward.Mcguire@dhs.gov> Jonathan Edwards/DC/USEPA/US@EPA "Elaine_wolff@ios.doi.gov" <Elaine_wolff@ios.doi.gov> "ella.mcneil@em.doe.gov" <ella.mcneil@em.doe.gov> "george.alexander@hhs.gov" <george.alexander@hhs.gov> "Gordon.s.cleveland@aphis.usda.gov" <Gordon.s.cleveland@aphis.usda.gov> "Gordon_S_Cleveland/MD/APHIS/USDA@mailmd101.aphis.usda.gov" <Gordon_S_Cleveland/MD/APHIS/USDA@mailmd101.aphis.usda.gov> "Greenlaw, Pamela" <Pamela.Greenlaw@DHS.GOV> "james.ross@dtra.mil" <james.ross@dtra.mil> "james.williams@dot.gov" <james.williams@dot.gov> "John.Jensen@dm.usda.gov" <John.Jensen@dm.usda.gov> "john.mackinney@HQ.DHS.GOV" <John.Mackinney@dhs.gov> "Jonathan.Bratt@orise.orau.gov" <Jonathan.Bratt@orise.orau.gov> "Katherine.wallace@va.gov" <Katherine.wallace@va.gov> "Katinka.Podmaniczky@hq.doe.gov" <Katinka.Podmaniczky@hq.doe.gov> "kenagyWD@state.gov" <kenagyWD@state.gov> "kenneth.inn@nist.gov" <kenneth.inn@nist.gov> "Lawrence_K._Zelvin@nss.eop.gov" <Lawrence_K._Zelvin@nss.eop.gov> "lee.a.nickel1@navy.mil" <lee.a.nickel1@navy.mil> "lisa.karam@nist.gov" <lisa.karam@nist.gov> "Lodwick.jeffrey@dol.gov" <Lodwick.jeffrey@dol.gov> "lukas.mcmichael@navy.mil" <lukas.mcmichael@navy.mil> "manuel.aponte@osd.mil" <manuel.aponte@osd.mil> "marc.brooks@HQ.DHS.GOV" <Marc.Brooks@dhs.gov> "mark.paese@Noaa.gov" <mark.paese@Noaa.gov> Nate McMichael/DC/USEPA/US@EPA "Michael.Collins2@ic.fbi.gov" <Michael.Collins2@ic.fbi.gov> "Michael.Noska@fda.hhs.gov" <Michael.Noska@fda.hhs.gov> "michael.unterweger@nist.gov" <michael.unterweger@nist.gov> Jennifer Mosser/DC/USEPA/US@EPA Peter Oh/DC/USEPA/US@EPA "patricia.milligan@nrc.gov" <patricia.milligan@nrc.gov> "patrick.mulligan@dep.state.nj.us" <patrick.mulligan@dep.state.nj.us> "Patrick.Starke@ic.fbi.gov" <Patrick.Starke@ic.fbi.gov> "paul.kim@med.va.gov" <paul.kim@med.va.gov> "peter.g.prassinos@nasa.gov" <peter.g.prassinos@nasa.gov> "Ponikvar, Donald (CTR)" <Donald.Ponikvar@associates.dhs.gov> "ricardo.reyes@dtra.mil" <ricardo.reyes@dtra.mil> "Richard_Tinker@ios.doi.gov" <Richard_Tinker@ios.doi.gov> "rmcburney@crcpd.org" <rmcburney@crcpd.org> Jean Schumann/DC/USEPA/US@EPA Kathryn Snead/DC/USEPA/US@EPA "ssmith@crcpd.org" <ssmith@crcpd.org> "Stephen.Domotor@eh.doe.gov" <Stephen.Domotor@eh.doe.gov> "steven.clay@navy.mil" <steven.clay@navy.mil> "steven.fine@noaa.gov" <steven.fine@noaa.gov> "stewarta@cdpemail.dhs.gov" <stewarta@cdpemail.dhs.gov> Edward Tupin/DC/USEPA/US@EPA "unterweger@nist.gov" <unterweger@nist.gov> Lee Veal/DC/USEPA/US@EPA Jessica Wieder/DC/USEPA/US@EPA Jessica Wieder/DC/USEPA/US@EPA
Cc: "Ahlgrim, Bridget" <Bridget.Ahlgrim@dhs.gov> "Berkey, Johanna" <Johanna.Berkey@dhs.gov> "Broockerd, Larry" <Larry.Broockerd@dhs.gov> "Bruns, Ingrid" <Ingrid.Bruns@fema.dhs.gov> "Burnside, Conrad" <Conrad.Burnside@fema.dhs.gov> "Collins, Richard" <Richard.Collins@dhs.gov> "Colman, Steve" <Steve.Colman@fema.dhs.gov> "Crawford, Sean" <Sean.Crawford@dhs.gov> "Cullen, William R" <William.Cullen@dhs.gov> "Daigler, Donald" <Donald.Daigler@dhs.gov> "DeFelice, Anthony" <Anthony.Defelice@dhs.gov> "DeGilio, Lou" <Lou.Degilio@dhs.gov> "Echavarria, Richard" <Richard.Echavarria@dhs.gov> "Feighert, Dan" <Dan.Feighert@dhs.gov> "Fiore, Craig" <Craig.Fiore@dhs.gov> "Flowerday, Scott" <Scott.Flowerday@fema.dhs.gov> "Fontenot, Rebecca" <Rebecca.Fontenot@dhs.gov> "Gorman, Chad" <Chad.Gorman@dhs.gov> "Greten, Timothy" <Timothy.Greten@dhs.gov> "Hammond, Lisa" <Lisa.Hammond@fema.dhs.gov> "Hammons, Darrell" <Darrell.Hammons@dhs.gov> "Hasemann, Brian" <Brian.Hasemann@dhs.gov> "Hlavaty-LaPosa, Janet" <Janet.Hlavaty-LaPosa@fema.dhs.gov> "Horton, Douglas" <Douglas.Horton@dhs.gov> "Howe, Michael" <Michael.Howe@dhs.gov> "Kinard, Richard"

<Richard.Kinard@dhs.gov> "King, William" <William.King5@fema.dhs.gov> "Kish, James" <James.Kish@dhs.gov> "McCabe, Ron" <Ron.McCabe@fema.dhs.gov> "McCarroll, Janis" <Janis.Mccarroll@dhs.gov> "Naskrent, Gary" <Gary.Naskrent@fema.dhs.gov> "Owens, Tamara" <Tamara.Owens1@dhs.gov> "Page, Christopher" <Christopher.Page1@dhs.gov> "Price, John" <John.Price@dhs.gov> "Quinn, Vanessa" <Vanessa.Quinn@dhs.gov> "Rice, John" <John.Rice2@fema.dhs.gov> "Robertson, Larry" <Larry.Robertson@fema.dhs.gov> "Sherwood, Harry" <Harry.Sherwood@fema.dhs.gov> "Stevenson, Bill" <William.Stevenson@dhs.gov> "Thomson, Rebecca" <Rebecca.Thomson@fema.dhs.gov> "Tulley, Stephen" <Stephen.Tulley@fema.dhs.gov> "Valentine, Norm" <Norm.Valentine@fema.dhs.gov> "Ward, Paul" <Paul.Ward@dhs.gov> "Webb, Bill" <Bill.Webb@fema.dhs.gov> "Webster, William" <William.Webster2@fema.dhs.gov>
Submit Time: 6/14/2011 07:56:25
Subject: Pre-Scripted Messaging Resources

Attached are reference documents for discussion at the 10am meeting. **Key Aspects of a Nuclear Power Plant Incident.docx** **EPA (Draft) PAG Manual for Interagency Review 3-11-2011.docx** **NRC Guidelines for External Risk Communication (NUREG BR-0308).pdf** **NRC Guidelines for External Risk Communication (NUREG BR-0308).pdf.001** **Radiological Incident Phases and Applicability of Protective Actions.docx** **Final_PrescriptedComms_SOE PLE10_12Nov2010_NRC (2).DOCX**

Thanks.

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Jonathan Edwards---12/01/2010 08:31:21 AM---FYI ----------

From: Jonathan Edwards/DC/USEPA/US

To: Lee Veal/DC/USEPA/US@EPA, "Perrin Alan" <perrin.alan@epa.gov>

Date: 12/01/2010 08:31 AM

Subject: Fw: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

FYI

Sent from my BlackBerry Wireless Handheld (www.BlackBerry.net)
Gina McCarthy

----- Original Message -----
From: Gina McCarthy
Sent: 11/30/2010 08:55 PM EST
To: Mike Flynn
Cc: Jonathan Edwards; Joseph Goffman
Subject: Re: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)
Mike - Hard to know if they are open to a delay to allow us to better inform the discussion. We can certainly talk to them about our efforts to reshape the PAGs. It will be up to Deb and Bob P if they feel comfortable having someone talk to Markey's staff about the clean up issues at this point. The one thing I don't want is for his staff to think we are hiding. Since Markey is from neck of the woods, I can join if you want. I know they have not been kind to us in the recent past.

Mike Flynn---11/30/2010 05:49:11 PM---Gina, Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (

From: Mike Flynn/DC/USEPA/US
To: Gina McCarthy/DC/USEPA/US@EPA
Cc: Joseph Goffman/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 11/30/2010 05:49 PM
Subject: Fw: Cong. Markey Staff Request: Update on PAGs (and Cleanup)

Gina,

Cong Markey staff has requested a meeting to get an update on PAGs and also clean-up issues (see below). I have a call into Debbie Dietrich to coordinate on timing and the cleanup discussion since OHS has been the Agency lead on the senior level rad exercises. Should we try to delay this meeting till after

the Bob P meeting, or at least till after the AA prebrief?

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 11/30/2010 01:13 PM -----

From: Diann Frantz/DC/USEPA/US

To: Jonathan Edwards/DC/USEPA/US@EPA

Date: 11/30/2010 01:01 PM

Subject: Fw: Update on PAGs

Jon,

Could you call me about this request?

Diann
564-2668
----- Forwarded by Diann Frantz/DC/USEPA/US on 11/30/2010 12:59 PM -----

From: "Freedhoff, Michal" <Michal.Freedhoff@mail.house.gov>

To: Diann Frantz/DC/USEPA/US@EPA

Date: 11/30/2010 12:13 PM

Subject: RE: Update on PAGs

Hi Diann and hope you had a great holiday

We'd like an update on PAGs, and also, last week Inside EPA ran a story about how there is interagency disagreement related to who has the lead/responsibility for cleanup after a radiological incident. This is of major interest - we'd like a briefing on EPA's perspectives there as well. When can we set these up?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sign-up to receive e-updates from Rep. Markey at http://markey.house.gov/signup

-----Original Message-----
From: Frantz.Diann@epamail.epa.gov [mailto:Frantz.Diann@epamail.epa.gov]
Sent: Tuesday, March 30, 2010 6:23 PM
To: Freedhoff, Michal
Subject: Update on PAGs

Michal,

Below is a note from the Jon Edwards,Director of the Radiation Division, updating you on and issue you expressed and interest in during our meeting in January. If you have questions please let me know.

Diann
564-3668

****
Dear Dr. Freedhoff:

Thanks again to you and Dr. Joseph for coming to EPA's Office of Air and Radiation (OAR) on January 28 to meet with us. We believe the meeting was constructive and laid the foundation for productive interactions between us as we move forward with our regulatory and guidance initiatives in OAR's Radiation Protection Division. I am writing today to give you a progress report on an issue you raised of particular concern to Congressman Markey, the Protective Action Guides (PAGs). Recall that at the time of our meeting we thought we could have an Assistant Administrator-level meeting on PAGs in March.

We are making progress - though getting all the appropriate Assistant Administrators together for a meeting has proven a bit more challenging than we had hoped. It now looks like we will have that meeting in April. Once our senior leadership has arrived at a consensus position, we will need to engage with the larger stakeholder community and the interagency work group to determine a path forward.

We will get back to you at the end of April with an update on how things are progressing. If you have any questions, please contact Diann Frantz in the Office of Congressional and Intergovernmental Relations at 202.564.3668.

Sincerely,

Jonathan Edwards, Director
Radiation Protection Division

Here's the attachment she's referring to....same one recently covered in an INSIDE EPA article....
Jon

20110609-secy-11-0078-epa-pag-ML111430863.pdf

ML111430863.pdf 20110609-secy-11-0078-epa-pag-ML111430863.pdf

Lee Veal---10/05/2011 02:10:33 PM---What NRC memo? Did she send that later? Lee B. Veal Director, Center for Radiological Emergency Ma

From: Lee Veal/DC/USEPA/US
To: Jonathan Edwards/DC/USEPA/US@EPA
Cc: Sara DeCair/DC/USEPA/US@EPA
Date: 10/05/2011 02:10 PM
Subject: Re: Fw: EPA Protective Action Guidance Manual

What NRC memo? Did she send that later?

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
1310 L Street, NW
Washington DC, 20005
Mail Code: 6608J
202-343-9448
cell 202-617-4322

Jonathan Edwards---10/05/2011 02:04:32 PM---FYI... sorry, meant to have you cc'd but hit send too soon..... Jon ----- Forwarded by Jonathan Ed

From: Jonathan Edwards/DC/USEPA/US
To: Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA
Date: 10/05/2011 02:04 PM
Subject: Fw: EPA Protective Action Guidance Manual

FYI... sorry, meant to have you cc'd but hit send too soon..... Jon

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 10/05/2011 02:03 PM -----

From: Jonathan Edwards/DC/USEPA/US
To: Mike Flynn/DC/USEPA/US@EPA, Anna Duncan/DC/USEPA/US@EPA, Don Zinger/DC/USEPA/US@EPA
Cc: Alan Perrin/DC/USEPA/US@EPA, Diann Frantz/DC/USEPA/US@EPA
Date: 10/05/2011 02:03 PM
Subject: Fw: EPA Protective Action Guidance Manual

Mike, Anna, and Don---

FYI--- Cong. Markey's staff asking about the PAG manual..... not much to say other than it's currently at OMB for review prior to publication for public comment on proposal. ---Jon

----- Forwarded by Jonathan Edwards/DC/USEPA/US on 10/05/2011 02:01 PM -----

From: Diann Frantz/DC/USEPA/US
To: Jonathan Edwards/DC/USEPA/US@EPA
Date: 10/05/2011 01:42 PM
Subject: Fw: EPA Protective Action Guidance Manual

Jon

Could you give me a call about this?? She did not attach the NRC memo but sent it later. I will send it .

Thanks
Diann
----- Forwarded by Diann Frantz/DC/USEPA/US on 10/05/2011 01:41 PM -----

From: "Joseph, Avenel" <Avenel.Joseph@mail.house.gov>
To: Diann Frantz/DC/USEPA/US@EPA
Date: 10/05/2011 12:42 PM
Subject: EPA Protective Action Guidance Manual

Hi Diann,
Our office would like to get an update on where EPA is with issuing the PAG. Has it already been sent to OMB? I'm sure you've seen the attached NRC memo issued in June. It would be great to get a general update on where things stand with all of this.

Thank you.

Sincerely,
Avenel

Avenel Joseph, M.S., Ph.D.
Office of Representative Edward J. Markey (MA-07)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

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POLICY ISSUE
INFORMATION

June 9, 2011 SECY-11-0078

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: U. S. ENVIRONMENTAL PROTECTION AGENCY REVISIONS TO THE PROTECTIVE ACTION GUIDANCE MANUAL

PURPOSE:

The purpose of this paper is to inform the Commission of the status of the ongoing revisions to the U.S. Environmental Protection Agency (EPA) Protective Action Guidance (PAG) Manual.

BACKGROUND:

Public officials, in discharging their responsibility to protect public health during a radiological emergency, may be faced with decisions that must be made quickly. Although a number of factors will influence their choice of protective actions, it is likely that not all of the information needed to make the optimum choice will be available immediately. In such situations, it is helpful to develop preplanned strategies to optimize the protection of public health and safety. It is within this context that EPA was charged to develop the PAG Manual and associated guidance.

The historical and legal basis of EPA's role starts with Reorganization Plan No. 3 of 1970, in which the EPA Administrator assumed all the functions of the Federal Radiation Council,

CONTACT: Patricia A. Milligan, NSIR/DPR
(301) 415-2223

including the charge to "advise the President with respect to radiation matters, directly or indirectly affecting health, including guidance for all federal agencies in the formulation of radiation standards and in the establishment and execution of programs of cooperation with States."[1] Subsequently, the Federal Emergency Management Agency (FEMA) changed the radiological emergency planning and preparedness regulations in Title 44 of the *Code of Federal Regulations* (44 CFR) 351.22(a) to require that EPA "[e]stablish Protective Action Guides (PAGs) for all aspects of radiological emergency planning in coordination with appropriate Federal agencies." FEMA also tasked EPA, in 44 CFR 351.22(b), with preparing "guidance for State and local governments on implementing PAGs, including recommendations on protective actions which can be taken to mitigate the potential radiation dose to the population" and presenting it in the PAG Manual.

Additionally, Section 274h of the AEA charges the EPA Administrator with performing "such other functions as the President may assign to him [or her] by Executive order." Section 1601(2) of Executive Order 12656, "Assignment of Emergency Preparedness Responsibilities," dated November 18, 1988, states that the Administrator shall "[d]evelop, for national security emergencies, guidance on acceptable emergency levels of nuclear radiation…." The *National Response Framework, Nuclear/Radiological Incident Annex*, issued June 2008, also recognized EPA's role in the development of PAGs.

A series of recommendations issued in the 1960s introduced the concept of a PAG, which has since been developed over the years. A key concept[2] about PAGs is that the decision to implement protective actions should be based on the projected dose that would be received if the protective actions were not implemented. Developers of the EPA PAGs considered the following three principles in establishing exposure levels for the PAGs:[3]

(1) Prevent acute effects.

(2) Balance protection with other important factors and ensure that actions result in more benefit than harm.

(3) Reduce risk of chronic effects.

These principles apply to the determination of any PAG. Principles 1 and 2 have been endorsed for use by the international community as essential bases for decisions to intervene during an incident and relied upon by EPA since the early 1990s:

> PAGs should not be higher than justified on the basis of optimization of cost and the collective risk of effects on health. That is, any reduction of risk to public health achievable at acceptable cost should be carried out.[4]

---

1 Reorganization Plan No. 3 of 1970, Section 2(a)(7) and 6(a)(2), 5 USC Appendix; Atomic Energy Act of 1954 as amended (AEA), 42 USC 2021(h).

2 EPA, "Protective Action Guidance for Radiological Incidents, Draft for Interagency Review," February 2011.

3 EPA, "Protective Action Guidance for Radiological Incidents, Draft for Interagency Review," February 2011.

4 EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992.

The International Atomic Energy Agency (IAEA) has recognized principle 3 as an appropriate additional consideration.[5]

In 1975, EPA published the first edition of the "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." It established protective actions for whole body and thyroid exposure. The document recognized the need for, but did not establish, PAGs for exposure from radioactively contaminated food or water, and radioactive material deposited on property or equipment. It did, however, state that the lifting of controls for protective actions may be justified on the basis of cost savings when corresponding health risks have been adequately reduced.[6] In 1980, EPA updated this manual to include methods for estimating population dose from plume exposure and to provide guidance for decisionmakers on comparing projected dose with PAGs. However, the protective action recommendations continued to apply only to emergency planning for nuclear power reactors. In 1992, EPA substantially revised the manual to include recommendations that featured lower dose values based on the adoption by the U.S. Government of the 1977 International Commission on Radiological Protection (ICRP) recommendations.[7] It also broadened the range of radiological and nuclear incidents to include events at other than nuclear power plants (i.e., nuclear fuel cycle facilities, defense and research facilities, transportation accidents, radioisotope manufacturing facilities, and any other event except nuclear war).[8] The agency developed this guidance cooperatively with the Federal Radiological Preparedness Coordination Committee (FRPCC), with representation from EPA, FEMA, the U.S. Department of Energy, the U.S. Department of Defense, the U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Health and Human Services, including the Centers for Disease Control and Prevention and the Food and Drug Administration, the U.S. Department of Agriculture, and the U.S. Department of Labor. However, the 1992 revision did not provide guidance for the late or recovery phase[9] or drinking water PAGs.

DISCUSSION:

Almost immediately after the publication of the 1992 PAG Manual (EPA 400-R-92-001), a working group was formed to develop the late phase guidance and drinking water PAGs. The working group was staffed by interagency representatives and coordinated by the FRPCC. The revised document was finally published as a draft for public comment on the EPA Web site in early January 2009. This update provided drinking water PAGs and incorporated recovery guidance previously endorsed by the interagency working group as the U.S. Department of Homeland Security (DHS) PAGS for radiological dispersion devices (RDDs) and improvised nuclear devices (INDs). These PAGs provided the recovery strategy of "optimization," meaning that all reasonable efforts would be made to reduce doses, considering a number of factors,

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5 IAEA Safety Guide GS-G-2.1, "Arrangements for Preparedness for a Nuclear or Radiological Emergency," 2007.

6 EPA-520/1-75-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1975, Section 1.6.3.9 A.

7 ICRP 26, "Recommendations of the International Commission on Radiological Protection," 1977; and ICRP 30, "Limits for Intakes of Radionuclides by Workers," 1979.

8 EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992, Section 1-1.

9 The late or recovery phase is the period beginning when cleanup and recovery actions designed to reduce radiation levels in the environment to acceptable levels are commenced and ending when all recovery actions have been completed.

including social and economic issues.[10] Both ICRP[11] and IAEA[12] have endorsed the optimization strategy in recently published guidance.

In late January 2009, EPA withdrew the draft PAG Manual from its Web site for review by the incoming EPA Administrator. In January 2011, EPA distributed a significantly revised version to the interagency working group for review. This draft was revised entirely within EPA and deleted the consensus content on long-term recovery strategies as well as the water PAGs. Instead, it directs decisionmakers to the radiological standards associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Safe Drinking Water Act (SDWA). In response to EPA's request for comment on this draft, the NRC staff provided substantive comments. Some of the staffs' comments were incorporated; a great many were not. In particular, and of great importance, EPA did not address the NRC staff's underlying concern about the application of the CERCLA and SDWA standards following a nuclear power plant accident or a malevolent attack with an RDD or IND. Based on participation in several working group meetings conducted in January and February 2011, the staff has the following concerns relative to the anticipated request for NRC concurrence on the revised PAG guidance:

- EPA has backed away from its commitment, published in the *Federal Register* (73 FR 45030, August 1, 2008), to incorporate the DHS RDD/IND PAGs into the revised PAG Manual. Specifically, the RDD/IND PAGs adopted optimization decisionmaking for cleanup and recovery rather than a single value(s) such as the CERCLA risk range of 10E-4 to 10E-6 (which translates to a range of about 0.1 millirem to 15 millirem per year).

- EPA deleted its proposed chapter on drinking water PAGs in favor of deferring to the SDWA standard of 4 millirem per year. The proposed drinking water PAGs in the withdrawn guidance document were to be consistent with the Food and Drug Administration food PAG limit of 500 millirem per year.

In the recent 2011 working group meetings, the EPA staff has stated that it will not consider any comments on drinking water PAGs and that it considers this issue to be closed. The NRC staff has a number of concerns about the use of the SDWA standards, which were developed for normal operations, in an emergency and immediate post-emergency situation. The application of these standards could result in forcing communities to supply bottled water or relocate populations to avoid doses of 4 millirem per year. Adopting a 4-millirem per year standard for water PAGs introduces significant inconsistency with the PAG values for food (0.5 rem per year), shelter (1–5 rem), evacuation (1–5 rem), and relocation (doses in excess of 2 rem in the first year, not to exceed 500 millirem per year in any subsequent year or 5 rem over 50 years). Endorsing CERCLA goals for long-term recovery is inconsistent with the EPA PAGs for relocation in the intermediate phase, stated to be "applicable to the most critical or sensitive

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10 ICRP Safety Reports Series No. 1, "Optimization of Radiation Protection in the Control of Occupational Exposure," 2002.

11 ICRP 103, "The 2007 Recommendations of the International Committee on Radiation Protection," 2007; ICRP 109, "Application of the Commission's Recommendations for Protection of People in Emergency Exposure Situations," 2008; and ICRP 111, "Application of the Commission's Recommendations for the Protection of People Living in Long-Term Contaminated Areas After An Accident or Radiological Emergency," 2008.

12 IAEA General Safety Guidelines 2, "Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency," 2011.

segment of the population"[13] (2 rem for the first year, not to exceed 500 millirem per year in any subsequent year or 5 rem over 50 years), as well as with the guidelines in the 1992 PAG Manual, which states that "PAGs should not be higher than justified on the basis of optimization of cost and the collective risk of effects on health. That is, any reduction of risk to public health achievable at acceptable cost should be carried out."[14]

The staff does not believe that adopting SDWA limits and CERCLA goals meets EPA's own stated objectives to "balance protection with other important factors and ensure that actions result in more benefit than harm"; therefore, the staff intends to continue to support the inclusion of the DHS RDD/IND PAGs in the EPA PAG Manual.

The staff and other stakeholders have engaged EPA management regarding their plans for completion of the PAG Manual. However, the staff is not confident that the feedback and comments submitted to EPA will be in the draft intended to be submitted to the Office of Management and Budget (OMB). EPA intends to submit the draft manual to OMB within the next few weeks which will initiate a process for Federal departments and agencies, including NRC, to provide formal comments. After resolving the interagency comments, EPA plans to publish the draft manual in the *Federal Register* for public comment. In particular, EPA management expressed interest in receiving input from State and local government stakeholders. The staff will provide any updates through Commission Assistant Notes.

COORDINATION:

The Office of the General Counsel reviewed this package and has no legal objection.

/RA by Martin J. Virgilio for/

R. W. Borchardt
Executive Director
for Operations

---

13 EPA 400-R-92-001 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992, chapter 6, pp. 8, section 2.1.1.

14 EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992, pp. 1–5.

segment of the population"[13] (2 rem for the first year, not to exceed 500 millirem per year in any subsequent year or 5 rem over 50 years), as well as with the guidelines in the 1992 PAG Manual, which states that "PAGs should not be higher than justified on the basis of optimization of cost and the collective risk of effects on health. That is, any reduction of risk to public health achievable at acceptable cost should be carried out."[14]

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COORDINATION:

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/RA by Martin J. Virgilio for/

R. W. Borchardt
Executive Director
for Operations

G20110320/EDATS: OEDO-2011-0303
ADAMS Accession No.: ML111430863

OFFICE	NSIR/DPR	NSIR/DPR:D	OGC	Tech Editor	NSIR:D	EDO
NAME	PMilligan	BMcDermott	HBenowitz		JWiggins (MEvans for)	RBorchardt (MVirgilio for)
DATE	5/23/2011	5/31/2011	6/01/2011	5/27/2011	6/02/2011	6/9/2011

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[13] EPA 400-R-92-001 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992, chapter 6, pp. 8, section 2.1.1.

[14] EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1992, pp. 1–5.

Thank you Tony! I have attached the new versions that replace "long-term cleanup" with "late phase cleanup" per a strong message from OEM. Hopefully Bob P. will bless the approach this afternoon and I'll be able to send these to the Subcommittee on Monday.

PAGFR 12-10-2010.doc PAGFR 12-10-2010.doc

Best version for commenting:

DraftPAGManual12-10-2010.doc DraftPAGManual12-10-2010.doc

Best version for printing:

DraftPAGManual12-10-2010.pdf DraftPAGManual12-10-2010.pdf

Tony Nesky---12/09/2010 08:38:33 PM---Attached are the PAG documents: the FR notice and the revised document in PDF and Word formats. Yo

From: Tony Nesky/DC/USEPA/US
To: Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Darrell Liles/DC/USEPA/US@EPA
Cc: Glenna Shields/DC/USEPA/US@EPA
Date: 12/09/2010 08:38 PM
Subject: PAG Documents

Attached are the PAG documents: the FR notice and the revised document in PDF and Word formats. Your committee members are welcome to comment on the Word version, but they should realize that pagination may go crazy depending on their printer. They should use the PDF version to print the document.

I'll be out on Friday, and back in the offfice on Monday.

Tony Nesky
Center for Radiation Information and Outreach
Tel: 202-343-9597
nesky.tony@epa.gov

[attachment "DraftPAGManual12-10-10.doc" deleted by Sara DeCair/DC/USEPA/US] [attachment "DraftPAGManual12-10-10.pdf" deleted by Sara DeCair/DC/USEPA/US] [attachment "PAGFR 12-09-10.doc" deleted by Sara DeCair/DC/USEPA/US]

Subject: Reg action talking points
To: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA CN=Mike Flynn/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 3/6/2012 20:47:06

Jon, Mike,

I'm sending this to both of you for concurrent review since I'm under the impression that it may be needed quickly. Attached are brief bulleted write-ups for each of ORIA's actions that have gone, or are scheduled to go, to OMB this year. Kudos to Lee, Dan and several others for pulling this together in a timely way.

Please let us know what else you may need. -Alan

ORIA 2012 Regulatory Outlook Materials_v1.docx ORIA
2012 Regulatory Outlook Materials_v1.docx
~~~~~~~~~~~~~~~~~~~
Alan Perrin, Acting Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~~~~~~~

Subject: OAR 2012 Reg Outlook Material
To: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 3/7/2012 19:09:26

Jon,

A revision based on our conversation this afternoon. -Alan

ORIA 2012 Regulatory Outlook Materials_v2.docx ORIA
2012 Regulatory Outlook Materials_v2.docx
~~~~~~~~~~~~~~~~~~~~

Alan Perrin, Acting Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~~~~~~~~

Subject: reg outlook material
To: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 3/8/2012 15:30:09

Revision based on you comments. -Alan

ORIA 2012 Regulatory Outlook Materials_v3.docx ORIA
2012 Regulatory Outlook Materials_v3.docx
~~~~~~~~~~~~~~~~~~~~

Alan Perrin, Acting Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376
~~~~~~~~~~~~~~~~~~~~

Subject: ORIA -- Talking Points on Candidates for Regulatory Deferral
To: CN=Gina McCarthy/OU=DC/O=USEPA/C=US@EPA CN=Janet McCabe/OU=DC/O=USEPA/C=US@EPA CN=Mike Flynn/OU=DC/O=USEPA/C=US@EPA
Cc: CN=Kirsten King/OU=DC/O=USEPA/C=US@EPA CN=Kristina Friedman/OU=DC/O=USEPA/C=US@EPA
From: CN=Jonathan Edwards/OU=DC/O=USEPA/C=US
Submit Time: 3/9/2012 15:19:17

Gina, Janet and Mike-- In follow-up to our discussion at the close of last Tuesday's OAR staff meeting, we've developed some talking points for the ORIA regulations and guidance that are on the Regulatory Outlook paper under the "Questions Over Whether the Criteria are Met" section. We hope these are helpful in our internal/OAR conversation this coming Monday as well as the upcoming meeting with Bob Perciasepe and OP to talk about possible deferrals in regulatory actions. Any questions please call or email Mike or me. Have a good weekend. --Jon

ORIA 2012 Regulatory Outlook Materials_v3.docx ORIA 2012 Regulatory Outlook Materials_v3.docx

Federal Guidance Report No. 14: Diagnostic and Interventional X-Ray Procedures

There is **Compelling Reason** to update to the 1976 guidance on medical exposures; the 1976 guidance is outdated and does not reflect current science, technology and radiation exposure concerns.

***Compelling Reason**: Applying the Best Available Science and Knowledge of Health Care*

- *Medical exposures are largely responsible for doubling the average background-radiation exposure for the U.S. population.*
- The issue of increasing radiation doses to the public from diagnostic x-rays has been in the news over the last few years, particularly regarding the high doses received by children who are often exposed using adult sized settings.
- In a multi-year effort, EPA led an interagency work group that included medical and radiological professionals from agencies involved in health care delivery to review EPA's radiation protection guidance for the use of diagnostic and interventional x-rays.
- After careful coordination with senior officials at the Department of Health and Human Services, EPA submitted the proposed guidance for OMB and interagency review on October 7, 2011. This review is complete and OMB is scheduling an interagency meeting to discuss the comments they received (tentatively March 14, 2012).

***Compelling Reason**: Avoiding Unnecessary Radiation Exposure*

- EPA's proposed Federal Guidance Report 14 will almost certainly reduce unnecessary x-ray procedures (and costs) and reduce unnecessarily high doses from x-ray procedures in federal hospitals and clinics.
- This nonbinding guidance will serve as a useful reference for the private sector as well. Once approved and published, EPA's guidance on procedure and right-sized dose settings will lead to real health care benefits.

ED_001057C_T3_01087667

Protective Action Guidance for Radiological Incidents (PAGs)

Completing the PAGs update is a matter of **Practical Necessity** supported by **Compelling Reason**. This guidance is out-of-date, it does not reflect the latest science and it is widely used by every state agency and the United States government.

Compelling Reason*: Using the Best Available Science for Health and Environmental Protection*

- EPA published the current Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (PAGs Manual) 20 years ago in 1992, using what is now outdated science, focusing heavily on responding to nuclear power plant incidents. Updated science, dosimetry and emergency management strategies have advanced significantly since 1992. Additionally, our nation now must consider the threat of non-traditional nuclear safety concerns such as the use of radiological dispersal devices.
- The events around the Fukushima nuclear power plant disaster drive home the need for appropriate emergency response guidance and planning for the United States. The PAGs are fundamental to this effort.

Practical Necessity*: Promoting Integration with our State and Federal Partners*

- As mandated by FEMA and NRC, State and local agencies use the PAGs Manual in their radiation safety programs for emergency response planning efforts, often directly incorporating EPA's PAGs information into their own regulations. Many states will not deviate from using the 1992 edition PAGs in their emergency planning until that document is superseded, despite the current availability of significantly improved calculations.
- Federal agencies including the NRC, DOE, DOD, and HHS, and those that they regulate such as the nuclear power sector all use the EPA PAGs Manual in their response planning strategies and regulation. Each of these agencies and industry groups has expressed sincere and immediate interest in the publication of revised PAGs Manual.
- EPA submitted the proposed PAGs document to OMB for interagency review in July 2011. EPA has not received these comments but we do have feedback indicating the need to address more fully the re-occupancy and final clean-up issues.

  EPA's Deputy Administrator and our senior leadership team have been working closely with senior leaders from the NRC, DOE, HHS and the NSS to develop appropriate re-occupancy and clean-up guidance, settling a decades-long debate on these important policy issues. The NSS has requested that EPA publish these products within 60 days of their completion.

  The PAGs Manual could incorporate this information and, once approved, publish as a comprehensive guide ranging from the earliest phases after a nuclear disaster to the final clean-up process. This would be a significant accomplishment for our nation.

ED_001057C_T3_01087667

ANPRM for Environmental Radiation Protection Standard for Nuclear Power Operations
(40 CFR Part 190)

Regulatory Lookback: The current regulation is outmoded and lacks adequate ground water protection requirements. As with many of the radiation protection rules, ORIA will harmonize our regulations and guidance with those of the NRC, which implements EPA's nuclear fuel cycle standards.

Compelling Reason: *Using the Best Available Science, Supporting the President's "All of the Above Strategy for Energy"* [1] *and Environmental Protection*

- EPA promulgated 40 CFR Part 190 in 1977, the Agency's first radiation regulation. The proposed ANPRM will start the first review and revision of this regulation since written in 1977.
- Science, dosimetry and technology have advanced *substantially* since 1977.
- The current 40 CFR Part 190 rule contains no groundwater protection provisions, and the basis for radionuclide release limits is questionable and unenforceable. This seems unacceptable given the current ground water concerns around some of the older U.S. nuclear power plants.

Practical Necessity: *Promoting Predictability and Integration*

- For the first time in 30 years, new nuclear power plants are under construction. Older plants are extending their operating life well beyond original expectations to provide for an energy hungry nation.
- NRC implements EPA's standards in this area; and NRC would like to update their regulations and support our efforts to solicit input through this ANPRM. Additionally, addressing the shortfalls in the current 40 CFR Part 190 would provide timely follow-up to the Blue Ribbon Commission on America's Nuclear Future recommendations.
- Revising 40 CFR Part 190 and its implementing regulations will take time and the process of gathering input to support transparent regulatory decisions needs to start as soon as possible. There is general external support for revising this standard, along with a variety of opinions on how to revise this standard.
- EPA would propose to cover a broad range of facilities (milling, conversion and enrichment, fuel fabrication and reprocessing facilities, and nuclear power plants), and a wide range of issues (risk versus dose, dosimetry, release limits, water resource protection, spent fuel storage, new technologies.)

[1] http://www.whitehouse.gov/blog/2012/02/23/president-obama-describes-all-above-strategy-energy

ED_001057C_T3_01087667

National Emission Standards for Radon Emissions from Operating Mill Tailings (NESHAP)
(40 CFR Part 61, Subpart W)

Regulatory Lookback: The Subpart W NESHAP is outmoded and does not adequately cover new uranium extraction technologies such as in-situ and heap leaching.

Compelling Reason: *Using the Best Available Science, Adapting to Changes in Industry Practices and Environmental Protection*

- Promulgated in 1989, Subpart W does not include the best available science or consider current industry standard practices.
- When the Subpart W standards were developed, uranium recovery from ore relied almost exclusively on the conventional milling process; the uranium recovery industry has since adopted new technologies.
- In-situ recovery has surpassed conventional milling as the dominant form of uranium extraction in the U.S. and it is likely to constitute the bulk of future processing; the existing CAA standards for uranium milling lack explicit provisions for limiting radon emissions from active in-situ uranium recovery operations.

Practical Necessity: *Legal Considerations*

- EPA is proceeding with this review under a Settlement Agreement.
- EPA's proposed Subpart W migrates from the 1989 emission standard to a GACT Standard (Generally Available Control Technology), a novel approach for the Agency in this type of regulation.
- The proposal will clarify the facilities covered and the period of coverage, from first generation of by-product material to the final facility closure. The proposal would codify extension of coverage to the new leaching technologies.

Practical Necessity: *Promoting Integration*

- EPA would propose to coordinate these requirements with operating requirements implemented by the NRC.

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Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

(40 CFR Part 192)

Regulatory Lookback: The existing Uranium Extraction Rule is outmoded and it lacks adequate ground water protection requirements. As with many of the radiation protection rules, ORIA will be harmonizing our regulations and guidance with those of the Nuclear Regulatory Commission, which often implements EPA standards.

Compelling Reason: *Adapting to Changes in Industry Practices and Environmental Protection*

- EPA promulgated 40 CFR Part 192 (Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings) in 1983; the last revision took place in 1995 – almost 2 decades ago. Additionally, the Agency has revised several Safe Drinking Water Act standards since 1995.
- When the Part 192 standards were developed, uranium recovery from ore relied almost exclusively on the conventional milling process; the uranium recovery industry has since adopted new technologies. NRC and Agreement States currently are considering more than ten new license applications.
- In-situ recovery has surpassed conventional milling as the dominant form of uranium extraction in the U.S. and it is likely to constitute the bulk of future processing; the existing health and environmental standards for uranium milling lack explicit provisions for in-situ uranium recovery operations.
- In-situ recovery operations directly alter ground water chemistry; given the disruption of the aquifer inherent in the in-situ recovery process, standards addressing ground water restoration as well as monitoring and protection of surrounding aquifers are very important.

Practical Necessity: *Promoting Predictability and Integration*

- The Nuclear Regulatory Commission currently uses license conditions rather than regulatory standards to protect public health, safety, and the environment. License conditions are subject to legal challenge and can vary across all licensees. In discussions about Part 192, industry has expressed a need for "regulatory certainty."
- In the absence of regulatory standards, States exercising licensing authority by agreement with NRC have taken widely different approaches to protecting ground water, often using restoration goals inconsistent with requirements applicable to conventional mills.
- NRC tabled their efforts to establish ground water protection requirements for in-situ recovery operations, including ground water restoration stability and monitoring requirements, pending the availability of EPA's Part 192 rule.

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Subject: Fw: Next steps on discussion with OP on reg deferrals
To: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
Cc:
From: CN=Alan Perrin/OU=DC/O=USEPA/C=US
Submit Time: 3/28/2012 18:01:03

FYI
~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

----- Forwarded by Alan Perrin/DC/USEPA/US on 03/28/2012 06:00 PM -----

From: Alan Perrin/DC/USEPA/US
To: Don Zinger/DC/USEPA/US@EPA
Cc: Kirsten King/DC/USEPA/US@EPA, Kristina Friedman/DC/USEPA/US@EPA, Mike Flynn/DC/USEPA/US@EPA, Anna Duncan/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA
Date: 03/28/2012 04:35 PM
Subject: Fw: Next steps on discussion with OP on reg deferrals

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Don,

Here are ORIA's updates to the OAR Reg Outlook document -- we have edited each of our five entries. If you have any questions, please give me a call. -Alan

OAR Reg Outlook Meeting - ORIA edits 03 28 2012.docx

OAR Reg Outlook Meeting - ORIA edits 03 28 2012.docx
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Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

----- Forwarded by Alan Perrin/DC/USEPA/US on 03/28/2012 04:27 PM -----

From: Mike Flynn/DC/USEPA/US
To: Jonathan Edwards/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA
Cc: Anna Duncan/DC/USEPA/US@EPA
Date: 03/27/2012 04:15 PM
Subject: Fw: Next steps on discussion with OP on reg deferrals

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Jon/Alan,

here's the reg stuff you asked about earlier today. Two issues we need to deal with: 1) we need to beef up our rationales for our rules by cob tomorrow (not sure the drafts here are compelling), and 2) discuss how to cover this meeting which conflicts with the DOE/NRC meeting. suggest we discuss later today before jon leaves.

Mike Flynn, Director
Office of Radiation and Indoor Air
U.S. Environmental Protection Agency
Phone: (202) 343-9356

----- Forwarded by Mike Flynn/DC/USEPA/US on 03/27/2012 04:10 PM -----

From: Don Zinger/DC/USEPA/US
To: Steve Page/RTP/USEPA/US@EPA, Sarah Dunham/DC/USEPA/US@EPA, Mike Flynn/DC/USEPA/US@EPA, Margo Oge/DC/USEPA/US@EPA
Cc: Mary Henigin/DC/USEPA/US@EPA, Peter South/RTP/USEPA/US@EPA, Jackie Krieger/DC/USEPA/US@EPA, Anna Duncan/DC/USEPA/US@EPA, Lori Stewart/DC/USEPA/US@EPA, Karen Orehowsky/DC/USEPA/US@EPA, Kirsten King/DC/USEPA/US@EPA, Kristina Friedman/DC/USEPA/US@EPA
Date: 03/27/2012 04:03 PM
Subject: Next steps on discussion with OP on reg deferrals

As you may remember, after Gina had her meeting with Bob P on which regs we could defer beyond 2012, Bob asked her to meet with OP to try to resolve the differences between the 2 offices. That meeting has now been set up for this Thursday at 1:15. All of you will be invited to that meeting. The first section of the attachment is the list of rules that OP believes can be deferred but OAR does not agree. For each rule, we need to have a concise and compelling write up as to why that rule needs to be active in 2012. Your staffs have helped us with initial write ups but some of them need additional work. Those are indicated by the note: [Need more]. We are not looking for long write ups; just a few additional crisp sentences should be enough. Please add those in track changes to the document and return it to Kirsten, Kristina and myself **by 5pm tomorrow (Wed)**. We will compile it into one OAR list and that will guide the discussion with OP at Thursday's meeting. Note that the second section of the attachment, beginning on page 5, are rules for which there is agreement between the 2 offices that the rules should be active in 2012. No work is needed on this section. Please call if you have questions. Thanks.

[attachment "OAR Reg Outlook Meeting - OAR notes.docx" deleted by Alan Perrin/DC/USEPA/US]

OAR 2012 Regulatory Outlook Meeting
OAR Comments – Wednesday, March 28, 2012

Questions Over Whether OMB Criteria Are Met

3/9/2012 VOC Exclusion for Family of Four Hydrofluoropolyethers (HFPEs); OAR/OAQPS/AQPD; SAN 5131; RIN 2060-AO17; Tier 3; OMB Significant; NPRM

Completed (signed 3/15/2012)

3/22/2012 *OD Signature*
Federal Guidance Report No. 14: Diagnostic and Interventional X-Ray Procedures; OAR/ORIA/RPD; SAN 5592; RIN 2060-ZA20; Tier N/A; OMB Significant; NODA

OMB Criteria: Practical Necessity / Compelling Need

- In 1976, EPA issued guidance to reduce radiation exposure from medical procedures (i.e. X-rays). This guidance is now woefully outdated and does not provide for adequate protection from unnecessary radiation exposure. *At present, medical exposures are responsible for doubling the average background radiation exposure for the U.S. population.*
- EPA, with HHS, has prepared updated guidance and provided this to OMB in October 2011.Interagency review is complete and we expect to will have a final document incorporating comments ready for OMB shortly.

5/14/2012 Hearing-Protector Regulations - Revisions; OAR/OPAR; SAN 5102; RIN 2060-AO25; Tier 3; OMB Significant; Final Action

Regulatory Lookback / Practical Necessity

- In 1979, EPA promulgated a rule to regulate the labeling of products that are sold as hearing protectors, as required by Section 8 of the Noise Control Act of 1972. This rule is still on the books, even though the technology of hearing protection has made it completely outdated and irrelevant to today's hearing-protection products. Nonetheless, companies are prevented from marketing hearing protectors that don't comply with that 1979 rule.
- EPA's new hearing-protector rule will replace the outdated 1979 rule with new standards and testing methods that have been developed in close cooperation with the hearing-protection industry. This will allow companies to market a new generation of significantly improved products that are currently precluded from entering the marketplace as "hearing protectors" by the requirements of the 1979 regulation.

5/16/2012 Protective Action Guidance for Radiological Incidents; OAR/ORIA/RPD; SAN 5198; RIN 2060-ZA19; Tier N/A; NODA2

OMB Criteria: Practical Necessity / Compelling Need

- Last published 1992, EPA's PAG Manual provides federal, state and local agencies with technical guidance to protect public and worker health during radiological emergencies ranging in size from small industrial incidents to Fukushima-size nuclear power plant accidents. Emergency management strategies and the science supporting those strategies has improved significantly since 1992.
- The recent Fukushima event in Japan underscored the importance of radiological PAGs as part of the nation's emergency response plan and OMB has suggested that language on related recovery issues be incorporated (e.g., clean-up). This language has been developed.

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5/23/2012 RFS2 Amendments; OAR/OTAQ; SAN 5584; RIN 2060-AR21; Tier 3; OMB Significant; NPRM

OMB Criteria: Practical Necessity / Compelling Need

Requested OMB waiver

- Supports cellulosic renewable fuel qualification, advanced renewable pathways, corn fiber cellulosic, and E-15 regulatory corrections. This is essential to allow renewable fuel producers to participate in the Renewable Fuel Standard program.

5/25/2012 *AA Signature*

Revised Regulation for Environmental Radiation Protection Standard for Nuclear Power Operations - 40 CFR Part 190; OAR/ORIA/RPD; SAN 5581; RIN 2060-AR12; Tier 2; OMB Significant; ANPRM

Regulatory Lookback

OMB Criteria: Practical Necessity / Compelling Need

- Issued in 1977 (EPA's 1st radiation regulation), this action will provide information to inform critical updates to this broad rule, including ground water protection.
- Updating these standards is important – new nuclear power plants are being licensed, while old plants are extending operations through license renewals. NRC implements these standards and supports this effort.

6/29/2012 RFS - Modification of Definition of Heating Oil; OAR/OTAQ; SAN 5614; RIN A2060; Tier 3; OMB Significant; Direct Final and NPRM

Regulatory Lookback / Regulatory Relief

- Responds to industry request for cellulosic heating oil pathway and includes the court-driven (3/15/12) provision to allow the use of higher sulfur diesel in marine vessels and locomotives ("diesel transmix"). [NEED MORE]

7/9/2012 Startup, Shutdown, and Malfunction Amendments to NESHAP Part 63 Standards; OAR/OAQPS/SPPD/PDG; SAN 5397; RIN 2060-AP96; Tier 3; OMB Significant; NPRM

OMB Criteria: Practical Necessity and Compelling Need

- Although all the SSM issues have been addressed in 15 or more NESHAP actions, these amendments will codify SSM provisions for the rest of the NESHAP program. These amendments could potentially affect 90 rules.
  [NEED MORE; Is this need to respond to a court decision?]

7/31/2012 RFS - Summer Program Amendments; OAR/OTAQ; SAN 5613; RIN A2060; Tier 3; OMB Significant; NPRM

OMB Criteria: Practical Necessity / Compelling Need

- One of two rules per year to approve new RFS fuel pathways and make other adjustments to smooth RFS implementation. Essential to the implementation of the Renewable Fuel Standards program – allows fuel producers to comply with the volume requirements.

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8/15/2012 NESHAP Amendments for Operating Uranium Mill Tailings (Subpart W); OAR/ORIA/RPD; SAN 5281; RIN 2060-AP26; Tier 2; OMB Significant; NPRM

OMB Criteria: Practical Necessity / Compelling Need

- Promulgated in 1989, the existing Subpart W does not adequately cover new uranium extraction technologies such as in-situ and heap leaching. Since 1989, these new technologies have surpassed conventional processes in the United States and will likely continue to be the dominant process for future.
- While no deadlines applies, this action satisfies a settlement agreement requirement between EPA and two environmental groups over EPA's alleged failure to review and revise this standard within 10 years of enactment of the 1990 Clean Air Act.

9/4/2012 NSPS and EG for Small Municipal Waste Combustors - Amendments (subparts AAAA & BBBB); OAR/OAQPS/SPPD/FIG; SAN 4970; RIN 2060-AN17; Tier 3; OMB Significant; NPRM

Defer

9/6/2012 VOC Exclusion for HFO 1234ze; OAR/OAQPS/AQPD; SAN 5461; RIN 2060-AQ38; Tier 3; OMB Significant; Final Action

OMB Criteria: Regulatory Relief

- This compound will no longer be regulated for ozone pollution
- This action will remove the subject chemical from the definition of VOC because of its low ozone-forming potential. This will avoid the need for industry to apply emission controls when producing or using the compound.

9/17/2012 Uranium Extraction Facilities; OAR/ORIA/RPD; SAN 5319; RIN 2060-AP43; Tier 2; OMB Significant; NPRM

OMB Criteria: Practical Necessity / Compelling Need

- In-situ leaching is a new and rapidly growing industry practice for uranium extraction – the 1995 Part 192 rule is outdated and it lacks adequate ground water protection requirements.
- This proposal updates the rule with emphasis on ground-water protection and in-situ leaching (ISL) facilities. NRC is awaiting EPA action on this before updating their groundwater requirements for these facilities.

9/21/2012 Heavy-Duty Engine and Vehicle Technical Amendments; OAR/OTAQ; SAN 5618; RIN A2060; Tier 3; OMB undetermined; NPRM and Direct Final

Regulatory Lookback / Regulatory Relief

OMB Criteria: Practical Necessity / Compelling Need

Requested OMB Waiver

- Responds to industry need for hybrid truck test procedures, engine replacement provisions, corrections to aerodynamic tables. Streamlines/reforms previous regulations. Strongly supported by industry.

10/1/2012 Compliance Data Reporting Rule; OAR/OAQPS/SPPD/MPG; SAN 5357; RIN 2060-AP63; Tier 3; OMB Significant; NPRM

OMB Criteria: Practical Necessity / Compelling Need / Regulatory Relief

- It is important to develop this rule in order to incorporate provisions in our Part 60, 61, and 63 rules requiring sources to electronically submit stack test data and compliance reports. Such data are critical to our rule development activities and obtaining such data electronically will reduce information collection burden for sources in the future.

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10/24/2012	SNAP - N-Propyl Bromide for use in Adhesives, Coatings, and Aerosols; OAR/OAP/SPD; SAN 4599; RIN 2060-AK26; Tier 3; OMB Significant; Final Action **Defer**
11/2/2012	RFS2 - Supplemental Determination for Biofuels from Palm Oil; OAR/OTAQ; SAN 5250.2; RIN 2060-AQ36; Tier 3; OMB Significant; Direct Final **Defer**
12/10/2012	RFS2 Amendments; OAR/OTAQ; SAN 5584; RIN 2060-AR21; Tier 3; OMB undetermined; Final Action **Same as NPRM above.** **OMB Criteria: Practical Necessity / Compelling Need** **Requested OMB Waiver** • Supports cellulosic renewable fuel qualification, advanced renewable pathways, corn fiber cellulosic, and E-15 regulatory corrections. This is essential to allow renewable fuel producers to participate in the Renewable Fuel Standard program.
12/19/2012	Strat Ozone - Section 608 Technician Certification Requirements - Modifications; OAR/OAP/SPD; SAN 4901; RIN 2060-AM55; Tier 3; OMB Significant; NPRM **Defer**
12/19/2012	Area Source NESHAP for Electric Arc Furnaces - MACT Amendments for Mercury; OAR/OAQPS/SPPD/MIG; SAN 5593; RIN 2060-AR27; Tier 2; NPRM **Defer**
12/20/2012	Report to Congress: Energy Policy Act of 2005 Aviation Fuel Conservation and Emissions; OAR/OPAR; SAN 5096; RIN NA2060; Tier 3; Final **OMB Criteria: Practical Necessity / Compelling Need** • Required to submit report to Congress through the EPACT 2005. [NEED MORE]
12/21/2012	Component Durability Procedures for New Light Duty Vehicles, Light Duty Trucks & Heavy Duty Vehicles; OAR/OTAQ/CCD; SAN 4757.1; RIN 2060-AN01; Tier 3; OMB Significant; Final Action **Defer**
12/28/2012	RFG under the 8-hour Ozone Standard for Bump-up Areas Designated Attainment for the 1-hour Ozone Standard prior to Revocation; OAR/OTAQ/TRPD; SAN 5022; RIN 2060-AN63; Tier 3; OMB Significant; Final Action **Defer**
12/31/2012	Revisions to MACT Hammer 112(j) Rule; OAR/OAQPS/SPPD/PDG; SAN 5395; RIN 2060-AP91; Tier 3; OMB Significant; Final Action **Defer**
1/7/2013	Protection of Stratospheric Ozone: Certification of Recovery and Recovery/Recycling Equipment Intended for Use with Substitute Refrigerants; OAR/OAP/SPD; SAN 4916; RIN 2060-AM49; Tier 3; OMB Significant; NPRM **OMB Criteria: Practical Necessity / Compelling Need / Regulatory Relief** • SNAP approved hydrocarbon (HC) alternatives for several applications in December 2011, allowing companies like Ben & Jerry's and GE to implement in cooling cases • The Clean Air Act has a statutory ban on venting of alternatives, but allowing that ban to operate in the case of HCs could create risks. This rule would ensure safe use of refrigerants with better overall environmental profiles

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1/8/2013	Strat Ozone - Section 608 Leak Repair Regulations - Amendments; OAR/OAP/SPD; SAN 4856; RIN 2060-AM09; Tier 3; OMB Significant; Final Action **Defer**
1/14/2013	Fire Truck Rule; OAR/OTAQ; SAN 5616; RIN A2060; Tier 3; OMB undetermined; Final Action **Regulatory Lookback** **OMB Criteria: Practical Necessity / Compelling Need / Regulatory Relief** • Need to provide regulatory flexibility for emergency vehicles experiencing issues with diesel filter operation. Reforms previous diesel truck regulations [NEED MORE]

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Actions that Meet OMB Criteria (legal deadline, practical necessity, regulatory lookback, compelling Need) or are on EPA's Affirmative Agenda:

3/9/2012	Revision to Implementation Rule for 1997 8-Hour Ozone NAAQS (Subpart 1 Areas and 1-Hour Contingency Measures); OAR/OAQPS/AQPD; SAN 5194; RIN 2060-AO96; Tier 3; OMB Significant; Final Action
3/12/2012	Tier 3 Vehicle/Fuel Standards; OAR/OTAQ; SAN 5541; RIN 2060-AQ86; Tier 1; OMB Economically Significant; NPRM
3/16/2012	RFS2 - Addition of New Fuel Pathways; OAR/OTAQ; SAN 5573; RIN 2060-AR07; Tier 3; Final Action
3/30/2012	NESHAP RTR and NSPS for Petroleum Refinery Sector (NESHAP subparts CC & UUU; NSPS subpart Ja); OAR/OAQPS/SPPD/RCG; SAN 5532; RIN 2060-AQ75; Tier 1; OMB Economically Significant; NPRM Settlement Agreement milestone deadline - 12/10/2011 (Deferred)
3/30/2012	Report to Congress: Black Carbon; OAR/OAQPS/HEID; SAN 5458; RIN NA2060; Tier 3; Final
4/3/2012	NESHAP RTR and NSPS Review for Oil & Natural Gas Sector (subparts HH & HHH; NSPS subparts KKK & LLL); OAR/OAQPS/SPPD/FIG; SAN 5369; RIN 2060-AP76; Tier 1; OMB Economically Significant; Final Action Consent Decree milestone deadline - 4/3/2012
4/5/2012	NESHAP MACT and Area Source Standard for RICE Compression Ignition - Reconsideration of Emergency Demand Response Exemption and Testing Requirements; OAR/OAQPS/SPPD/ESG; SAN 5300.2; RIN 2060-AQ58; Tier 3; OMB Significant; NPRM Settlement Agreement milestone deadline - 4/20/2012
4/10/2012	Withdrawal of Determination that CAIR or NOx SIP Call Constitutes RACT or RACM; OAR/OAQPS/AQPD; SAN 5411; RIN 2060-AQ07; Tier 3; OMB Significant; NPRM
4/18/2012	NSPS Review for Petroleum Refineries (subpart J); OAR/OAQPS/SPPD/RCG; SAN 5036; RIN 2060-AN72; Tier 3; OMB Significant; Final Rule4
4/24/2012	Strat Ozone - 2012 Methyl Bromide Critical Use Exemption; OAR/OAP/SPD; SAN 5540; RIN 2060-AQ83; Tier 3; OMB Significant; Final Action
4/25/2012	Implementation Rule for 2008 Ozone NAAQS - Nonattainment Area Classification; OAR/OAQPS/AQPD; SAN 5275.3; RIN 2060-AR32; Tier 1; OMB Significant; Final Action Consent Decree milestone deadline - 5/31/2012
4/30/2012	NSPS & EG for CISWI - Reconsideration (subparts CCCC & DDDD) and NHSM Proposed Rule; OAR/OAQPS/SPPD/FIG; SAN 5105.1; RIN 2060-AR15; Tier 1; OMB Significant; Final Action Promise to Court milestone deadline - 4/30/2012
4/30/2012	NESHAP MACT for Industrial, Commercial, and Institutional Boilers (subpart DDDDD) - Reconsideration; OAR/OAQPS/SPPD/ESG; SAN 4884.2; RIN 2060-AR13; Tier 1; OMB Economically Significant; Final Action Promise to Court milestone deadline - 4/30/2012

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4/30/2012	Area Source NESHAP for Industrial, Commercial, and Institutional Boilers - Reconsideration; OAR/OAQPS/SPPD/ESG; SAN 4884.3; RIN 2060-AR14; Tier 1; OMB Significant; Final Action
	Promise to Court milestone deadline - 4/30/2012
4/30/2012	NESHAP MACT and NSPS for Portland Cement - Amendments in Response to Reconsideration; OAR/OAQPS/SPPD/MIG; SAN 5554; RIN 2060-AQ93; Tier 2; OMB Significant; NPRM
5/1/2012	NSPS Review for Nitric Acid Plants (subpart G); OAR/OAQPS/SPPD/MIG; SAN 5416; RIN 2060-AQ10; Tier 3; OMB Significant; Final Action
	Consent Decree milestone deadline - 5/14/2012
5/10/2012	SNAP - MVAC use of R-744; OAR/OAP/SPD; SAN 4918; RIN 2060-AM54; Tier 3; OMB Significant; Final Rule2
5/17/2012	Air Quality Designations for 2008 Ozone NAAQS; OAR/OAQPS/AQPD; SAN 5302; RIN 2060-AP37; Tier 3; OMB Exempt; Final Action
	Consent Decree milestone deadline - 5/31/2012
5/18/2012	CSAPR as BART for Regional Haze Requirements; OAR/OAQPS/AQPD; SAN 5571; RIN 2060-AR05; Tier 3; OMB Significant; Final Action
	Compliance Date milestone deadline - 5/15/2012
5/23/2012	Ambient Ozone Monitoring Regulations: Revisions to Network Design Requirements; OAR/OAQPS/AQAD; SAN 5259; RIN 2060-AP15; Tier 3; OMB Significant; Final Action
5/24/2012	EGU GHG NSPS - New Sources; OAR/OAQPS/SPPD/ESG; SAN 5548; RIN 2060-AQ91; Tier 1; OMB Significant; Final Action
	Settlement Agreement milestone deadline - 5/25/2012
5/25/2012	Report to Congress - 2011 DERA Program Highlights; OAR/OTAQ; SAN 5600; RIN NA2060; Tier 3; Final
5/28/2012	RFS Volume Standards for 2013; OAR/OTAQ; SAN 5615; RIN A2060; Tier 2; OMB Significant; NPRM
5/30/2012	Adoption of International NOx Standard for Aircraft Engines; OAR/OTAQ/ASD; SAN 5153; RIN 2060-AO70; Tier 3; OMB Significant; Final Action
6/1/2012	NSPS Review for Residential Wood Heaters (subpart AAA, subpart QQQQ, and subpart RRRR); OAR/OAQPS/OID; SAN 5396; RIN 2060-AP93; Tier 2; OMB Economically Significant; NPRM
6/4/2012	Strat Ozone - 2013 Methyl Bromide Critical Use Exemption; OAR/OAP; SAN 5608; RIN 2060-AR41; Tier 3; OMB Significant; NPRM
6/27/2012	Strat Ozone - 2012-2014 HCFC Allowance System; OAR/OAP/SPD; SAN 5564; RIN 2060-AQ98; Tier 3; OMB Significant; Final Action
6/28/2012	PM NAAQS Review; OAR/OAQPS/HEID; SAN 5169; RIN 2060-AO47; Tier 1; OMB Economically Significant; NPRM
	Promise to Court milestone deadline - 6/30/2012
6/29/2012	NESHAP RTR for Ferroalloys (subpart XXX); OAR/OAQPS/SPPD/MIG; SAN 5417; RIN 2060-AQ11; Tier 2; OMB Economically Significant; Final Action
	Consent Decree milestone deadline - 6/29/2012

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6/29/2012	NESHAP RTR for Primary Aluminum Reduction (subpart LL); OAR/OAQPS/SPPD/MIG; SAN 5550; RIN 2060-AQ92; Tier 3; OMB Significant; Final Action
	Consent Decree milestone deadline - 6/29/2012
6/29/2012	Report to Congress: Urban Air Toxics Strategy Update; OAR/OAQPS/OID; SAN 5453; RIN NA2060; Tier 2; Final
7/10/2012	Revisions to Implementation Rule for 1997 8-Hour Ozone NAAQS (Needable Further Progress Requirements); OAR/OAQPS/AQPD; SAN 5275.1; RIN 2060-AQ65; Tier 3; OMB Significant; Final Action
7/18/2012	Light-Duty GHG Emissions and CAFE Standards for MY2017 - 2025; OAR/OTAQ/ASD; SAN 5504; RIN 2060-AQ54; Tier 1; OMB Economically Significant; Final Action
	Final Action Target milestone deadline – 8/15/2012
7/27/2012	GHG Reporting - Re-proposal of Confidentiality Determinations for Certain Part 98 Source Categories; OAR/OAP/CCD; SAN 5525; RIN 2060-AQ70; Tier 3; OMB Significant; Final Action
7/30/2012	NESHAP RTR for Mineral Wool and Wool Fiberglass (subparts DDD & NNN); OAR/OAQPS/SPPD/MIG; SAN 5545; RIN 2060-AQ90; Tier 2; OMB Significant; Final Action
	Consent Decree milestone deadline - 6/29/2012
7/31/2012	NESHAP RTR for Pulp and Paper (subpart S); OAR/OAQPS/SPPD/NRG; SAN 5469; RIN 2060-AQ41; Tier 2; OMB Significant; Final Action
	Consent Decree milestone deadline - 7/31/2012
7/31/2012	GHG Tailoring Rule - Step 3; OAR/OAQPS/AQPD; SAN 5578; RIN 2060-AR10; Tier 1; OMB Significant; Final Action
	Compliance Date milestone deadline - 7/1/2012
8/7/2012	Widespread Use of Onboard Refueling Vapor Recovery; OAR/OAQPS/AQPD; SAN 5452; RIN 2060-AQ97; Tier 3; OMB Significant; Final Action
8/9/2012	GHG Reporting - Re-proposal of Confidentiality Determinations for Petroleum and Natural Gas; OAR/OAP/CCD; SAN 5525.2; RIN 2060-AR39; Tier 3; OMB Significant; Final Action
8/15/2012	NESHAP RTR for Chromium Electroplating and Steel Pickling (subparts N and CCC); OAR/OAQPS/SPPD/MIG; SAN 5093.9; RIN 2060-AQ60; Tier 2; OMB Significant; Final Action
	Consent Decree milestone deadline - 8/15/2012
8/20/2012	Implementation Rule for 2008 Ozone NAAQS - SIP Requirements; OAR/OAQPS/AQPD; SAN 5275.2; RIN 2060-AR34; Tier 1; OMB Significant; NPRM
8/31/2012	NSPS Review Criteria; OAR/OAQPS/SPPD/PSG; SAN 5168; RIN 2060-AO60; Tier 3; OMB Significant; NPRM
9/14/2012	Tier 3 Vehicle/Fuel Standards; OAR/OTAQ; SAN 5541; RIN 2060-AQ86; Tier 1; OMB Economically Significant; Final Action
9/17/2012	Area Source NESHAP for Chemical Manufacturing - Reconsideration; OAR/OAQPS/SPPD/RCG; SAN 5515; RIN 2060-AQ89; Tier 3; OMB Significant; Final Rule2

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9/28/2012	NESHAP MACT and NSPS for Portland Cement - Amendments in Response to Reconsideration; OAR/OAQPS/SPPD/MIG; SAN 5554; RIN 2060-AQ93; Tier 2; OMB undetermined; Final Action
10/1/2012	GHG Reporting - Re-proposal of Confidentiality Determinations for Certain Part 98 Source Categories; OAR/OAP/CCD; SAN 5525.1; RIN 2060-AR38; Tier 3; OMB undetermined; Final Action
10/15/2012	NESHAP RTR for Polymers and Resins III, Acrylic and Modacrylic Fibers, and Polycarbonates (subparts OOO and YY); OAR/OAQPS; SAN 5612; RIN A2060; Tier 3; OMB Significant; NPRM
10/23/2012	Consent Decree milestone deadline - 10/31/2012 RTR for Off-site Waste MACT; OAR/OAQPS/SPPD/RCG; SAN 5617; RIN A2060; Tier 3; OMB Significant; NPRM
10/31/2012	Consent Decree milestone deadline - 10/31/2012 NESHAP RTR for Phosphoric Acid and Phosphate Fertilizer (subparts AA and BB); OAR/OAQPS/SPPD/MIG; SAN 5435; RIN 2060-AQ20; Tier 2; OMB Significant; NPRM
10/31/2012	Consent Decree milestone deadline - 10/31/2012 NESHAP RTR for Secondary Aluminum Production (subpart RRR); OAR/OAQPS/SPPD/MIG; SAN 5468; RIN 2060-AQ40; Tier 2; OMB Significant; Final Action
11/12/2012	Consent Decree milestone deadline - 10/31/2012 RFS Volume Standards for 2013; OAR/OTAQ; SAN 5615; RIN A2060; Tier 2; OMB Significant; Final Action
11/13/2012	Statutory milestone deadline - 11/30/2012 GHG Reporting - Confidentiality Determinations for Inputs to Equations; OAR/OAP/CCD; SAN 5527; RIN 2060-AQ81; Tier 3; OMB Significant; NPRM2
11/26/2012	NESHAP RTR for Polymers and Resins IV, Pesticide Active Ingredients, and Polyether Polyols (subparts JJJ, MMM, and PPP); OAR/OAQPS/SPPD/RCG; SAN 5566; RIN 2060-AR02; Tier 3; OMB Significant; Final Action
12/3/2012	Consent Decree milestone deadline - 11/30/2012 Strat Ozone - 2013 Methyl Bromide Critical Use Exemption; OAR/OAP; SAN 5608; RIN 2060-AR41; Tier 3; OMB Significant; Final Action
12/10/2012	NSPS Amendment for Grain Elevators; OAR/OAQPS/SPPD/NRG; SAN 5233; RIN 2060-AP06; Tier 3; OMB Non-Significant; NPRM
12/17/2012	**OAR Criteria: Regulatory Lookback** NESHAP RTR and NSPS for Petroleum Refinery Sector (NESHAP subparts CC & UUU; NSPS subpart Ja); OAR/OAQPS/SPPD/RCG; SAN 5532; RIN 2060-AQ75; Tier 1; OMB Economically Significant; Final Action
1/29/2013	Settlement Agreement milestone deadline - 11/10/2012 Strat Ozone - Methyl Bromide Emergency Exemptions; OAR/OAP/SPD; SAN 4819; RIN 2060-AL94; Tier 3; OMB Significant; NPRM

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Submit Time: 4/23/2012 20:32:53
From: Sara DeCair <saradecair@yahoo.com>
Subject: Review-approve? NREP talk for EPA
To: Lee Veal/DC/USEPA/US@EPA Alan Perrin/DC/USEPA/US@EPA
Cc: Sara DeCair/DC/USEPA/US@EPA Kathryn Snead/DC/USEPA/US@EPA

Lee and Alan,

I can't seem to get webmail or Notes on a stick to work but I do have my blackberry, so if you would, write back to my usual email address? Here is a draft presentation for the Wednesday morning Federal Updates session, where Dan Blumenthal and Lynn Evans will be giving agency updates. Prosanta and Paul, the main organizers, have asked me to give an EPA talk and so I tried to work in Japan-lesson related updates in these slides that I mostly borrowed from Kathryn's draft for CRCPD. (Thank you, Kathryn!) Please let me know if these are okay for Wednesday, and I'll let you know how it goes. So far, good discussions and meetings... Thanks!
Sara

EPA Updates at NREP 4-25-2012.pptx

EPA's Radiation Emergency Response Program in 2012

Sara DeCair, Health Physicist
Center for Radiological Emergency Management
U.S. EPA

National REP Conference

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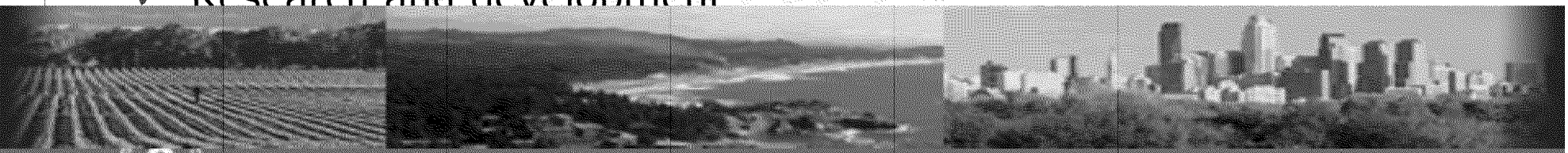
EPA's Core Capabilities

- EPA's mission – to protect human health and the environment
- EPA has longstanding capabilities in core programs directly related to homeland security and emergency preparedness:
  - ✓ Emergency response/oil and hazardous materials cleanup
  - ✓ Solid and hazardous waste management
  - ✓ Drinking water and wastewater management/water quality protection
  - ✓ Pesticides for crop, livestock, and human health protection
  - ✓ Radiation monitoring
  - ✓ Research and development



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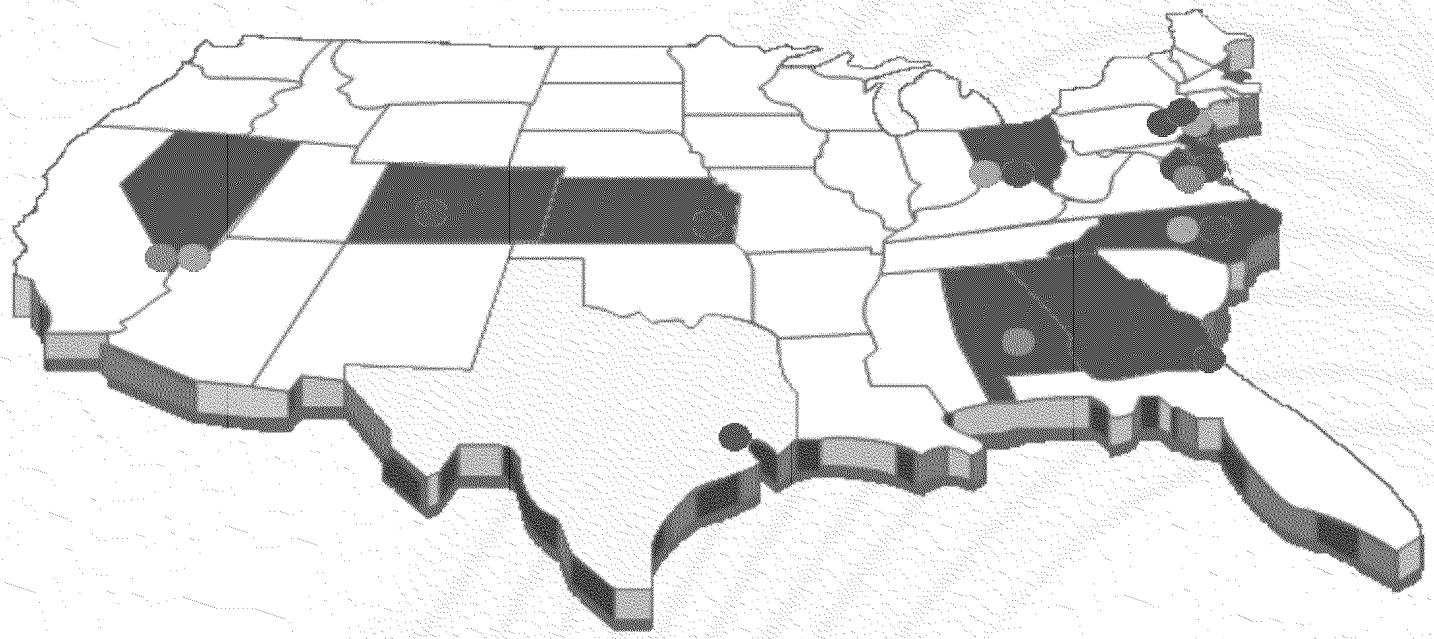
EPA Special Teams



- ERT – Edison, Las Vegas, Erlanger/Cincinnati, RTP
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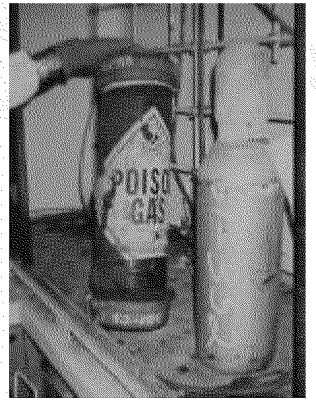
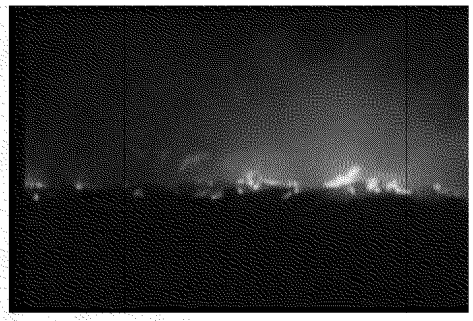
- Mission: *Support the nation's response, cleanup and renewal of its contaminated land, water and air.*





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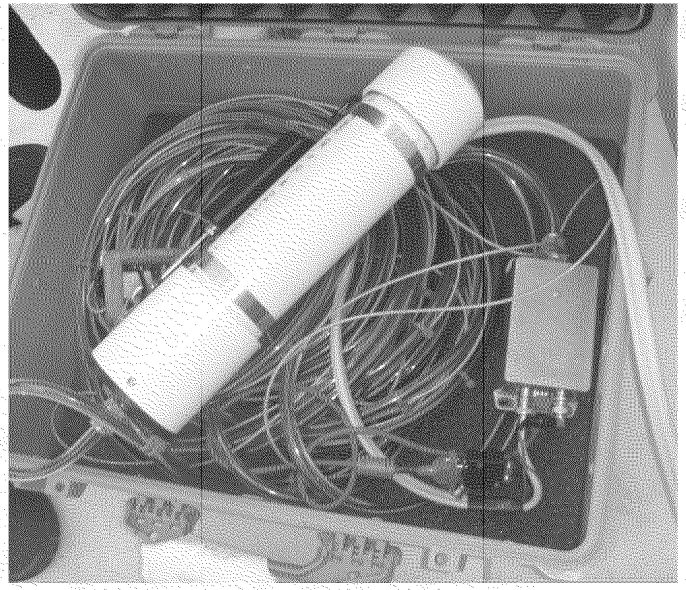

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- Mission: Provide on-site scientific and technical expertise in response to incidences of national significance involving environmental contamination and acts of terrorism related to weapons of mass destruction.

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EPA Airborne Spectral Photometric Environmental Collection Technology(ASPECT)

- The EPA CMAT ASPECT Program is capable of remotely detecting chemicals and radiation using an array of state-of-the-art chemical and radiological detectors, high resolution digital photography, video, and GPS technology combined with sophisticated software applications.

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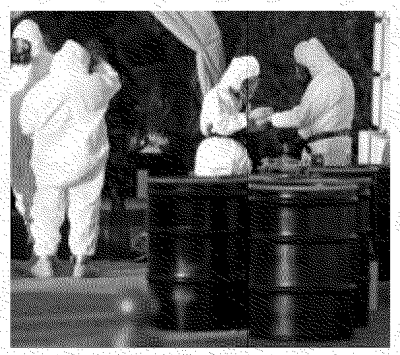
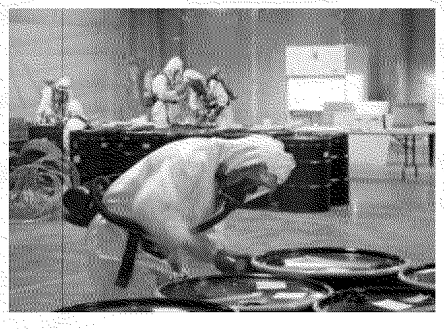
EPA National Counterterrorism Evidence Response Team

- Mission: Provide specialized law enforcement management of chemical, biological, radiological and nuclear (CBRN) incidents.





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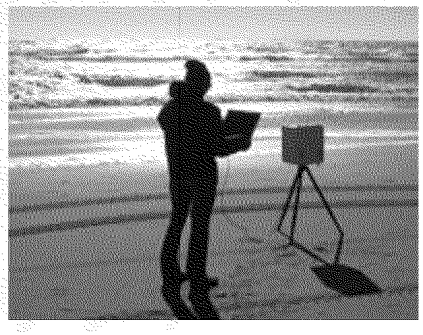

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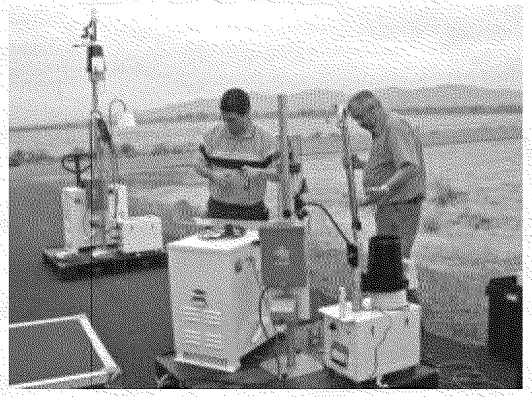
RERT Field Assets

- Field Monitoring Teams
- Mobile Laboratories (MERLs)
- Sample Prep Laboratories
- Scanning Systems (ERGS, Scanner Van)
- Mobile Command Post
- Sampling Equipment (all radiation types)
- Air Samplers (low, med, high volume)
- RadNet – Fixed & Deployable monitors



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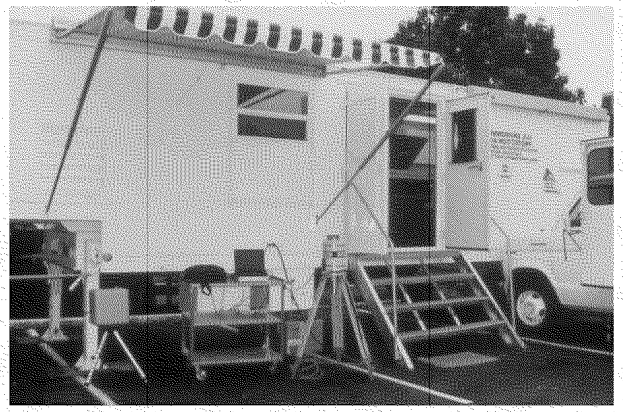
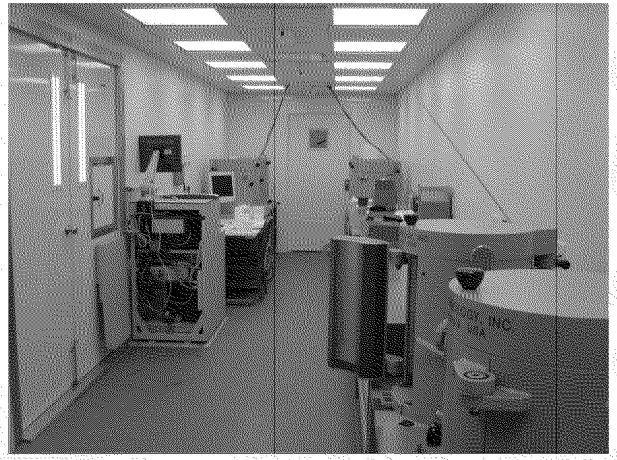
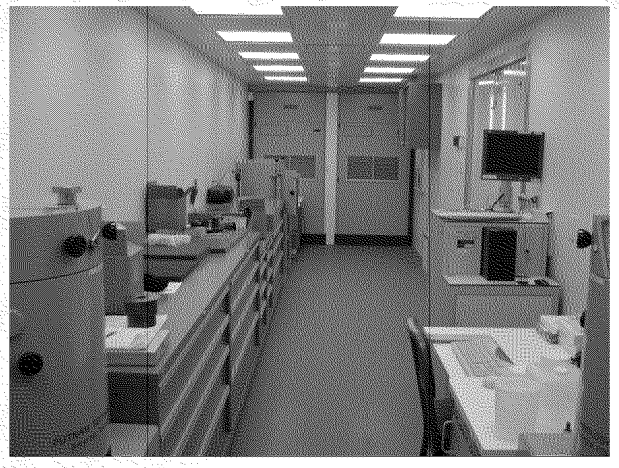
RERT Mobile Environmental Response Laboratories (MERLs)







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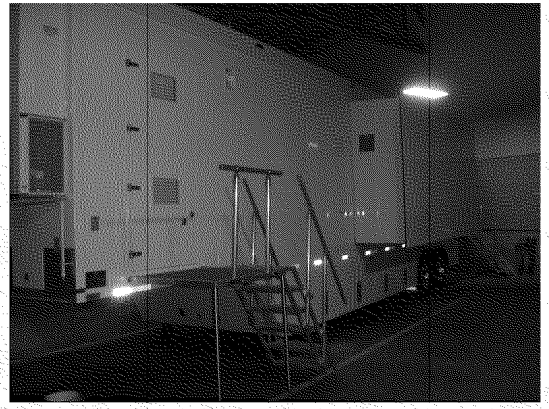
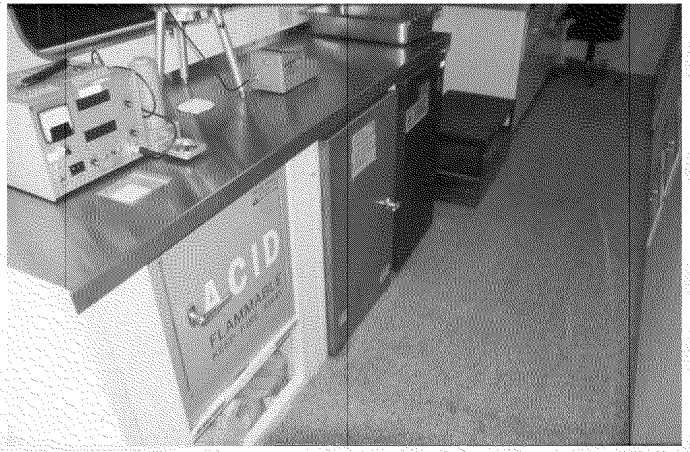
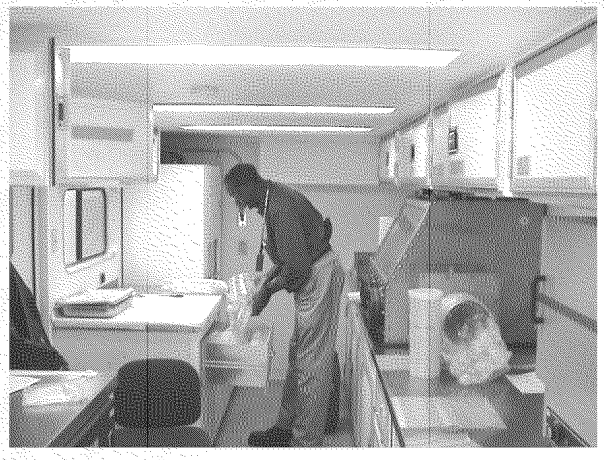
RERT Sample Preparation Laboratories (SPLs)







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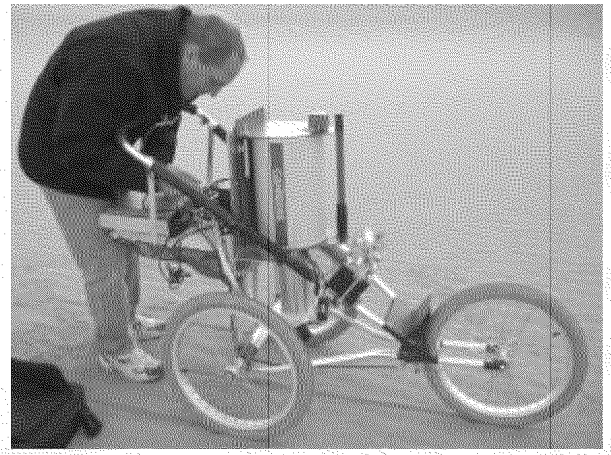
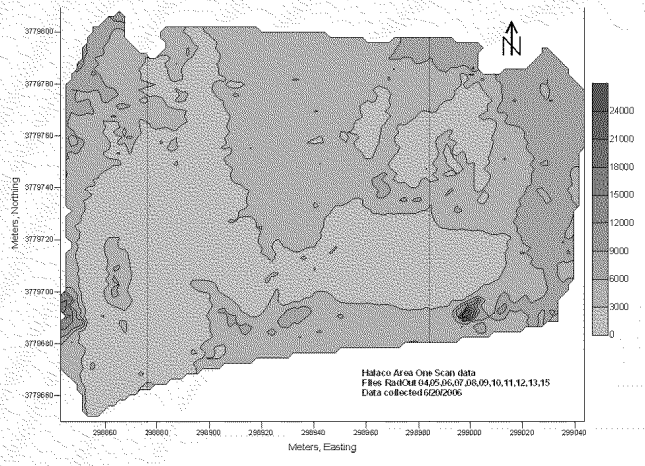
RERT Scanning Systems





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RERT Mobile Command Post

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EPA Radiation Fixed Laboratories

- National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, AL
- Radiation and Indoor Environments National Laboratory (R&IE) in Las Vegas, NV
  - ✓ Sample Preparation
  - ✓ Metals
  - ✓ Organics
  - ✓ Radiochemistry

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Homeland Security National Lab Capacity/Capability

- Environmental Response Laboratory Network (ERLN)
  - ✓ Pilot program to enhance existing federal and state radioanalytical laboratories
    - Cooperative Agreements awarded to four state labs
    - Emergency response "tools" – rapid methods, training, etc.
    - Implementing proficiency testing (PT) programs
- ORIA's Homeland Security Lab Capacity
    - Enhancing commercial lab capacity through incident response sample analysis and related lab guidance documents
    - Improving competency – training, PT studies, and method validation protocol
    - Identifying a core set of competent commercial labs through audits and other assessment tools

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Radiation Dose Assessment Support

- EPA participates in the Advisory Team for Environment, Food, and Health with USDA and HHS (CDC and FDA) to provide coordinated advice and recommendations to the State, Coordinating Agency, and DHS concerning environmental, food, and health matters.

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Protective Action Guides (PAGs)

- Revision of PAGS Manual for Radiological Incidents
  - ✓ Refers users to FRMAC Assessment methods
  - ✓ The revision has been through multi-agency and OMB review
  - ✓ EPA hopes to publish a proposed revision for public comment in the Federal Register

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National Environmental Radiation Monitoring

- RadNet is a nationwide, continuously operating environmental radiation monitoring system
  - ✓ Air monitoring provides near real-time gamma spectroscopy and beta detection
  - ✓ Precipitation and drinking water also routinely monitored
- Provides the science basis to estimate the effects of radioactive releases on human health and the environment

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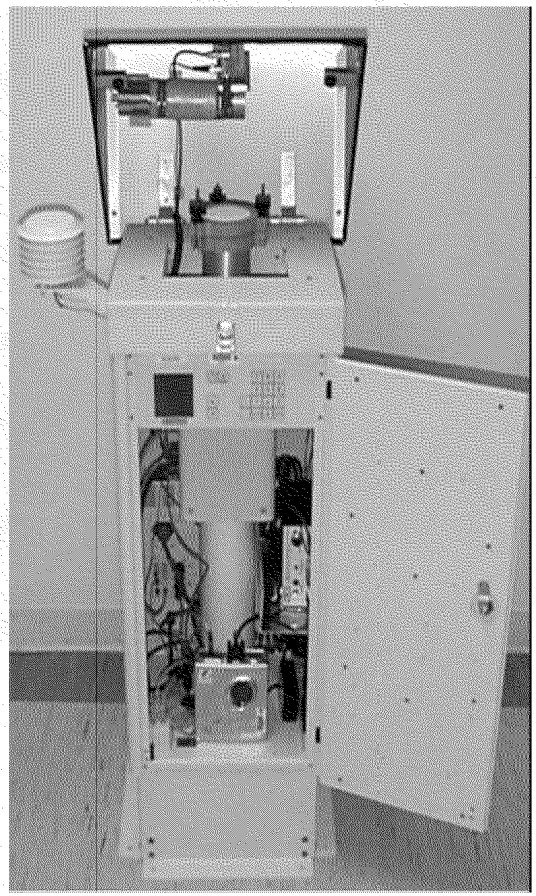
Fixed Monitoring Station

- Nationwide, Major Components
  - Air Sampler
  - Radiation Instruments (Gamma Spectroscopy and Beta Detectors)
  - Data Processing and Storing
  - Data Telemetry
- More parameters with download capability
- Increased coverage from 30% to over 60% of US population
- Beta screening instruments
- Precipitation collectors



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Current and Future RadNet Real-Time Fixed Air Monitor Locations

Installed
Future Location

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Deployable Monitoring Station

- High volume air sampler
- Low volume air sampler
- Ambient gamma exposure rate detector
- Wind speed indicator
- Electronics and telemetry package

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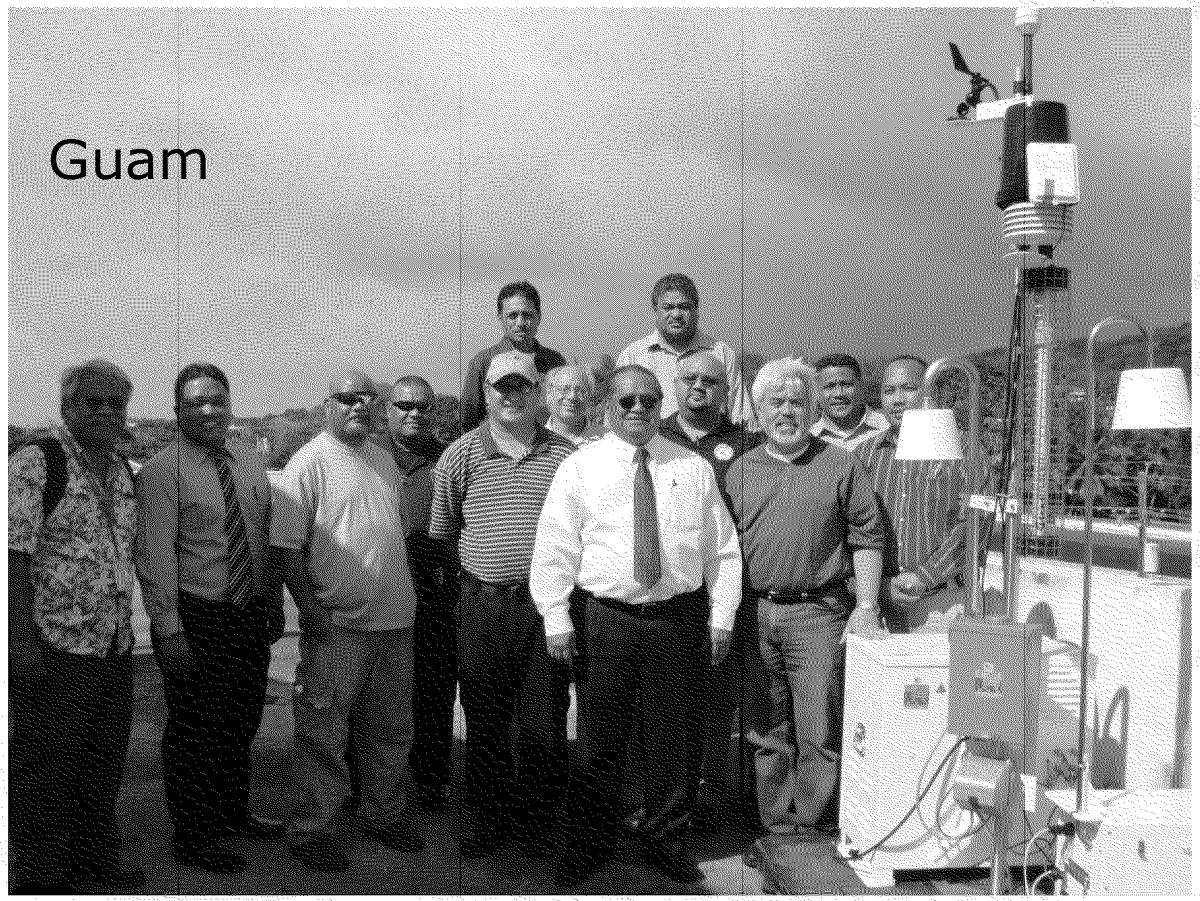
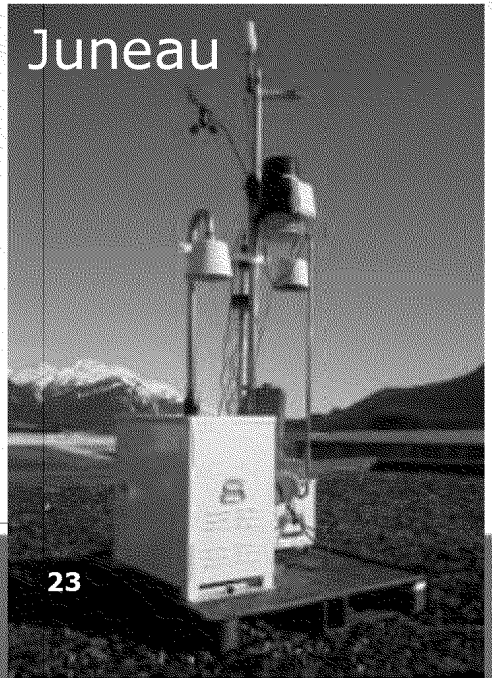
RadNet Deployables





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Providing Data to the Public

RadNet | US EPA - Windows Internet Explorer provided by EPA

http://www.epa.gov/radnet/index.html

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RadNet | US EPA

EPA United States Environmental Protection Agency

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RadNet

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RadNet Data

EPA's RadNet system provides near-real-time air monitoring and laboratory analyses of air filters, precipitation, drinking water and milk.

- Find near-real-time monitoring data
- Get laboratory data

1 2 3

Looking for the Japan 2011 home page?

Top Questions

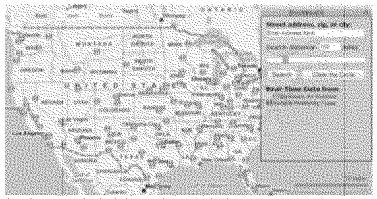
- Where can I find information on radiation screening of imports?
- How do I know my food is safe?
- How does EPA decide where to set up air monitors and take samples?
- How does EPA use RadNet data?

More FAQs

What is RadNet?

The nationwide RadNet system monitors the nation's air, drinking water, precipitation, and pasteurized milk to determine levels of radiation in the environment. RadNet sample analyses and monitoring results provide baseline data on background levels of radiation in the environment and can detect increased radiation from radiological incidents.

How to See RadNet Air Monitoring Data



Contains commands for working with the selected items. 100%

start KINGSTON (E:) Microsoft PowerPoint ... RadNet | US EPA - Wi... 9:24 PM

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In Conclusion…

- EPA Mission and Special Teams
- RERT Assets
- Dose Assessment and PAGs
- RadNet

Questions?

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Subject: USEPA Radiation Response Capabilities
To: william.spengler@dtra.mil
Cc: CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
From: CN=Jeffrey Blizzard/OU=DC/O=USEPA/C=US
Submit Time: 4/25/2012 14:07:43

Hello Colonel Spengler,

My supervisor, Lee Veal, has asked me to lead the effort in obtaining and passing along information on EPA's radiation response capabilities and teams. I have already coordinated with the Office of Emergency Management to provide you with material that gives an in-depth understanding of the real-life responses EPA has been involved with in the past. The briefing attached to this email touches on our core capabilities here and provides an inside look at our special teams, with a focus on the Radiological Emergency Response Team.

I hope you will find this information useful and I will do my best to pass along all other relevant information.

Please let me know if you have any questions or comments.

EPA Response Capabilities.pptx EPA Response Capabilities.pptx

Thank You,

Jeff Blizzard
Program Analyst
United States Environmental Protection Agency
Office of Air and Radiation
Radiation Protection Division
Center for Radiological Emergency Management
(202) 343-9470 - Office
(202) 695-5331 - Cell

EPA's Radiation Emergency Response Program in 2012

ED_001057C_T3_01088887

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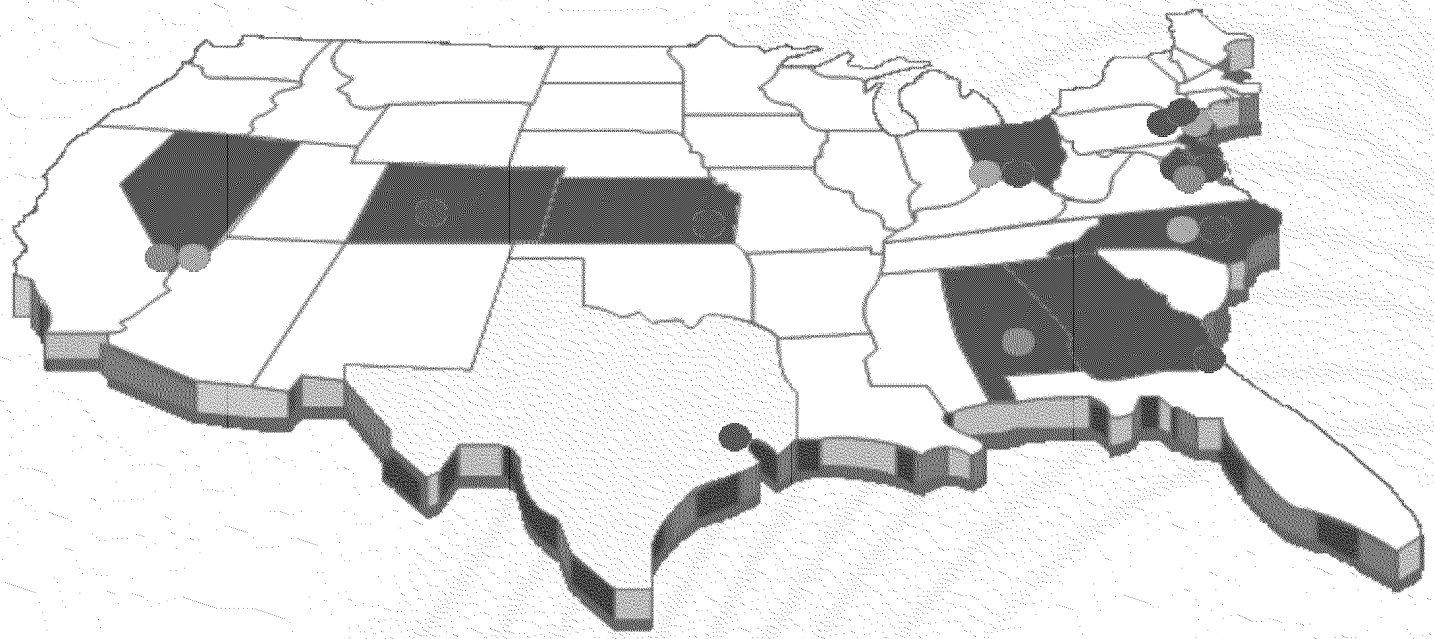
EPA Special Teams



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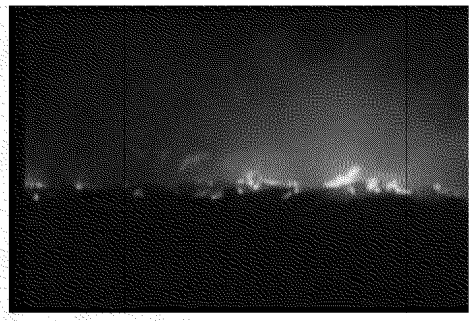

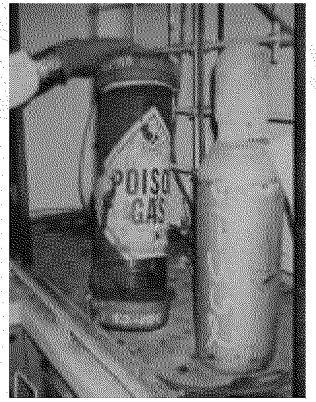

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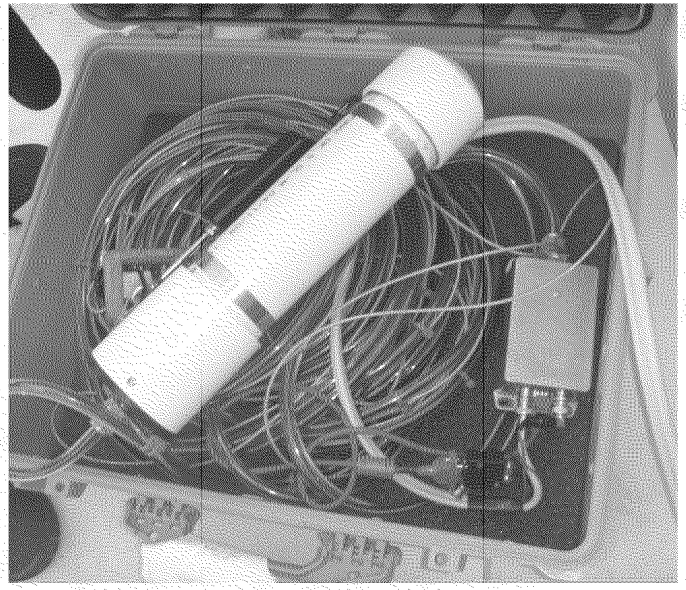

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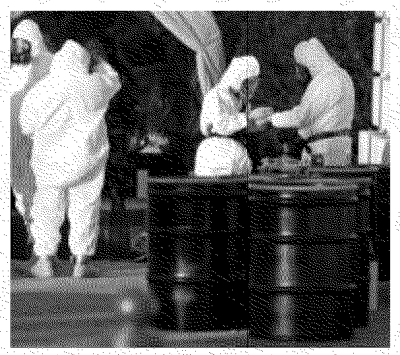

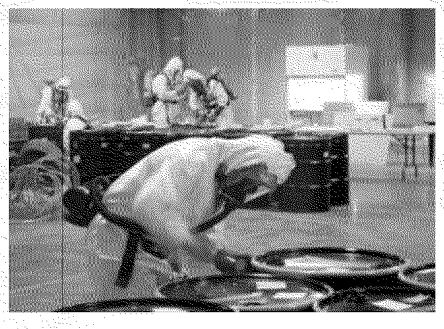

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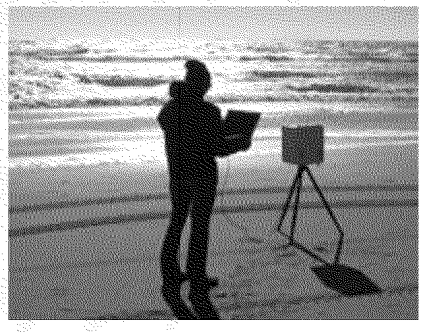

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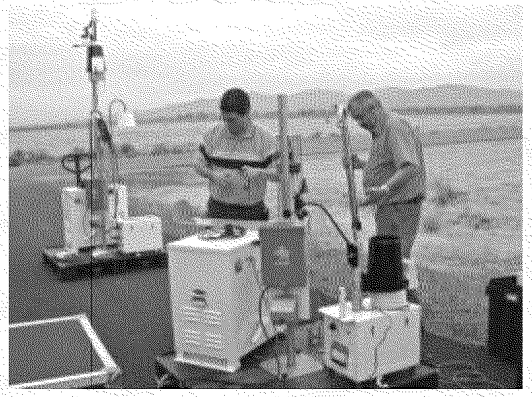

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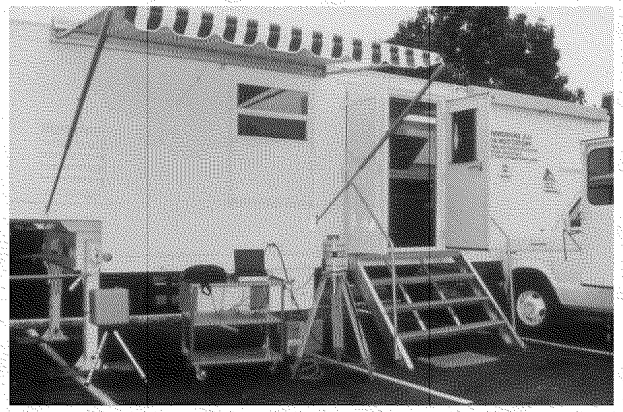
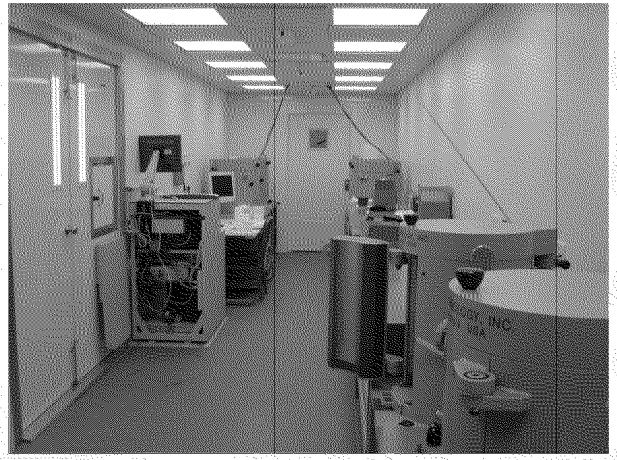
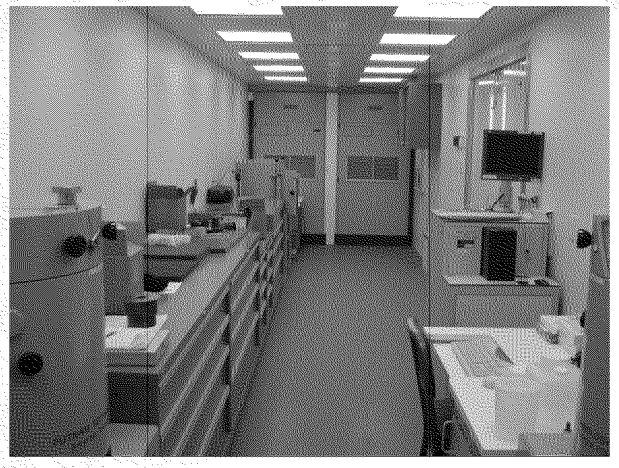
RERT Mobile Environmental Response Laboratories (MERLs)







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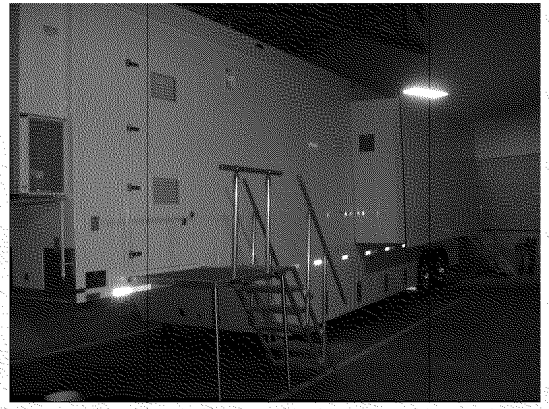
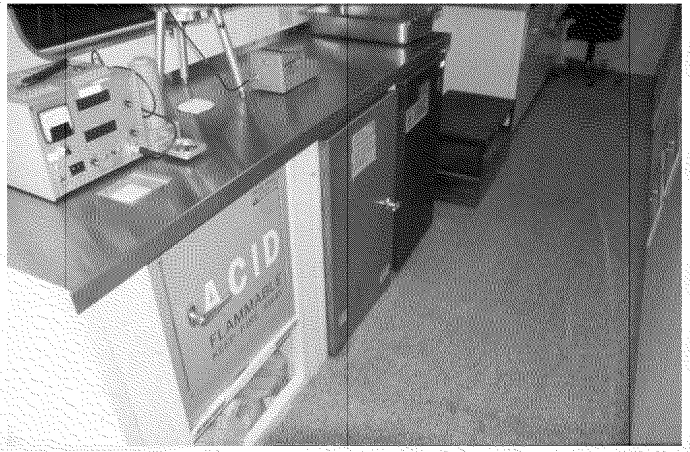
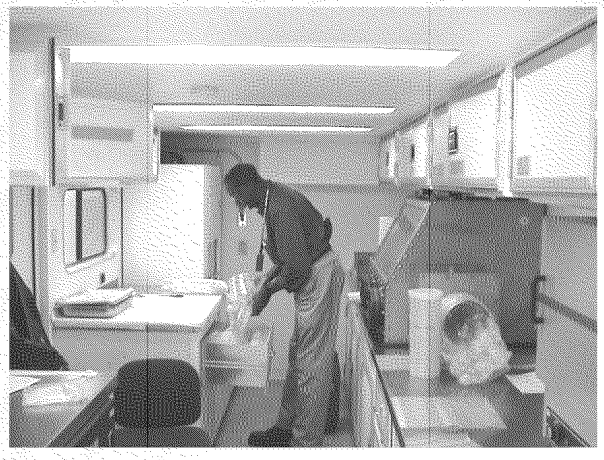
RERT Sample Preparation Laboratories (SPLs)







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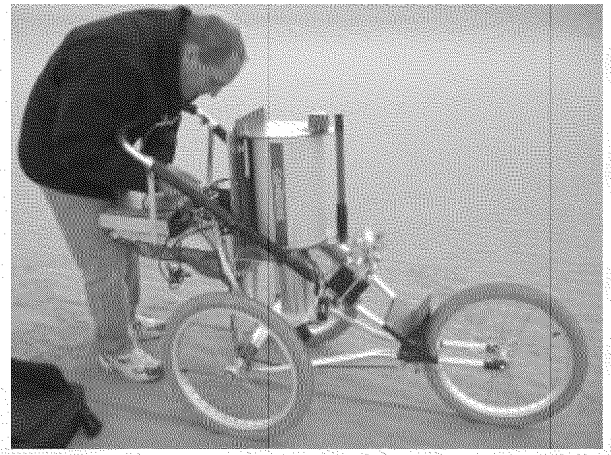
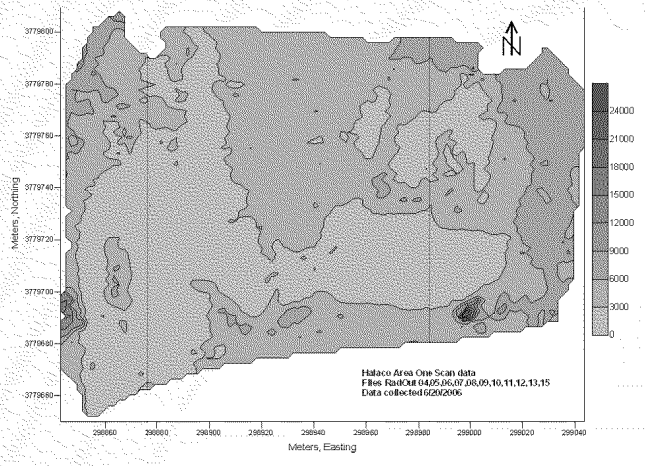
RERT Scanning Systems





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RERT Mobile Command Post

ED_001057C_T3_01088887

EPA Radiation Fixed Laboratories

- National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, AL
- Radiation and Indoor Environments National Laboratory (R&IE) in Las Vegas, NV
- Major Capabilities
  - ✓ Sample Preparation
  - ✓ Metals
  - ✓ Organics
  - ✓ Radiochemistry

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Homeland Security National Lab Capacity/Capability

- Environmental Response Laboratory Network (ERLN)
  - ✓ Pilot program to enhance existing federal and state radioanalytical laboratories
    - Cooperative Agreements awarded to four state labs
    - Emergency response "tools" – rapid methods, training, etc.
    - Implementing proficiency testing (PT) programs
- ORIA's Homeland Security Lab Capacity
    - Enhancing commercial lab capacity through incident response sample analysis and related lab guidance documents
    - Improving competency – training, PT studies, and method validation protocol
    - Identifying a core set of competent commercial labs through audits and other assessment tools

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Radiation Dose Assessment Support

- EPA participates in the Advisory Team for Environment, Food, and Health with USDA and HHS (CDC and FDA) to provide coordinated advice and recommendations to the State, Coordinating Agency, and DHS concerning environmental, food, and health matters.

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Protective Action Guides (PAGs)

- Revision of PAGS Manual for Radiological Incidents
  - ✓ Refers users to FRMAC Assessment methods
  - ✓ The revision has been through multi-agency and OMB review
  - ✓ EPA hopes to publish a proposed revision for public comment in the Federal Register

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National Environmental Radiation Monitoring

- RadNet is a nationwide, continuously operating environmental radiation monitoring system
  - ✓ Air monitoring provides near real-time gamma spectroscopy and beta detection
  - ✓ Precipitation and drinking water also routinely monitored
- Provides the science basis to estimate the effects of radioactive releases on human health and the environment

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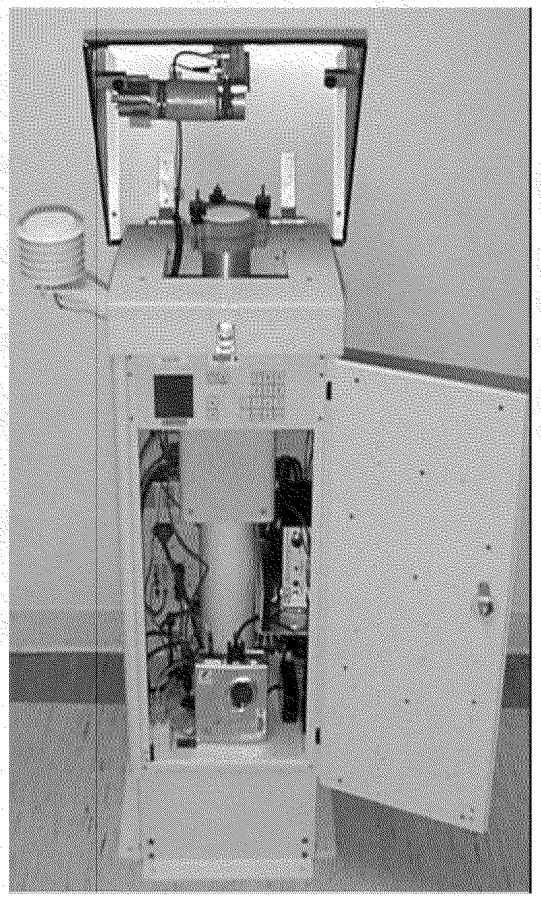
Fixed Monitoring Station

- Nationwide, Major Components
  - Air Sampler
  - Radiation Instruments (Gamma Spectroscopy and Beta Detectors)
  - Data Processing and Storing
  - Data Telemetry
- More parameters with download capability
- Increased coverage from 30% to over 60% of US population
- Beta screening instruments
- Precipitation collectors



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Current and Future RadNet Real-Time Fixed Air Monitor Locations

Installed
Future Location

ED_001057C_T3_01088887

Deployable Monitoring Station

- High volume air sampler
- Low volume air sampler
- Ambient gamma exposure rate detector
- Wind speed indicator
- Electronics and telemetry package

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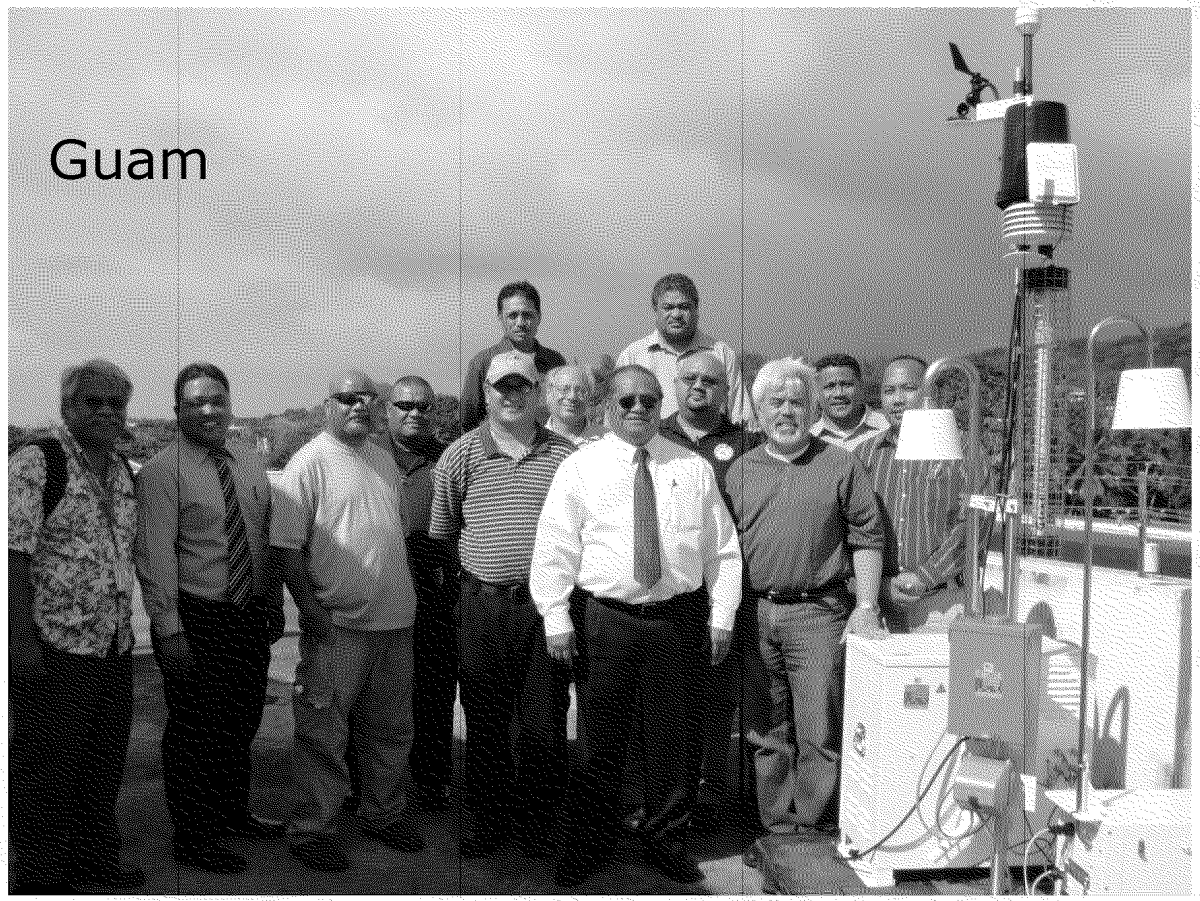
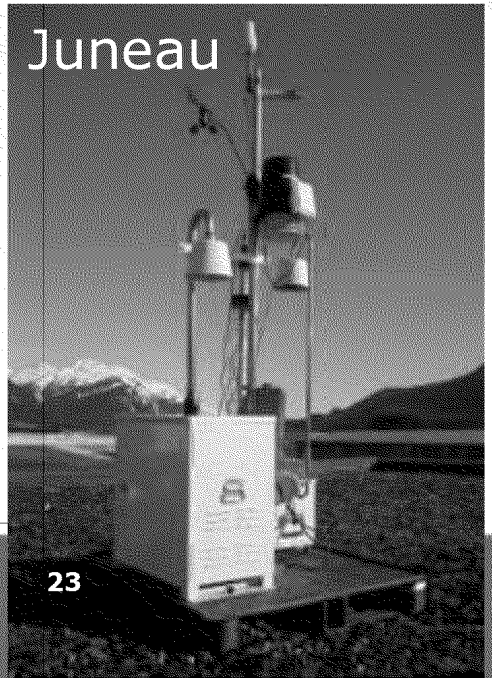
RadNet Deployables





23

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Providing Data to the Public

RadNet | US EPA - Windows Internet Explorer provided by EPA

http://www.epa.gov/radnet/index.html

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EPA United States Environmental Protection Agency

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SEARCH

RadNet

Contact Us Share

RadNet Data

EPA's RadNet system provides near-real-time air monitoring and laboratory analyses of air filters, precipitation, drinking water and milk

- Find near-real-time monitoring data
- Get laboratory data

1 2 3

Looking for the Japan 2011 home page?

Top Questions

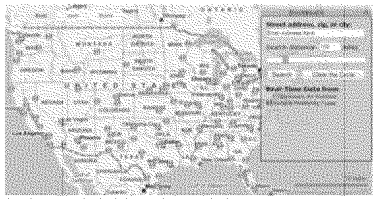
- Where can I find information on radiation screening of imports?
- How do I know my food is safe?
- How does EPA decide where to set up air monitors and take samples?
- How does EPA use RadNet data?

More FAQs

What is RadNet?

The nationwide RadNet system monitors the nation's air, drinking water, precipitation, and pasteurized milk to determine levels of radiation in the environment. RadNet sample analyses and monitoring results provide baseline data on background levels of radiation in the environment and can detect increased radiation from radiological incidents.

How to See RadNet Air Monitoring Data



Contains commands for working with the selected items.

start | KINGSTON (E:) | Microsoft PowerPoint ... | RadNet | US EPA - Wi... | 9:24 PM

ED_001057C_T3_01088887

In Conclusion…

- EPA Mission and Special Teams
- RERT Assets
- Dose Assessment and PAGs
- RadNet

Questions?

ED_001057C_T3_01088887

Subject: Draft notes from the April HSCN Meeting
To: CN=Debbie Dietrich/OU=DC/O=USEPA/C=US@EPA CN=Steven Williams/OU=DC/O=USEPA/C=US@EPA CN=Cayce Parrish/OU=DC/O=USEPA/C=US@EPA CN=Lee Veal/OU=DC/O=USEPA/C=US@EPA
Cc:
From: CN=Sharon White/OU=DC/O=USEPA/C=US
Submit Time: 5/10/2012 11:25:58

Attached are the draft notes from the April HSCN meeting. Please let me know if you have any changes by COB Monday, May 14th. Final notes will be posted on the HS wiki.

Thanks
Sharon

HSCNMeetingSummary draft.doc HSCNMeetingSummary draft.doc

****

CAPT Sharon White, USPHS
Office of Homeland Security
U.S. Environmental Protection Agency
202-564-5048

From: "Jones, Lisa M." Ex. 6 - Personal Privacy
To: Lee Veal/DC/USEPA/US@EPA
Subject: RE: INFO: Meet on PAGs as soon as possible
Submit Time: 7/13/2012 16:42:37

From: Lee Veal [mailto:Veal.Lee@epamail.epa.gov]
Sent: Thursday, July 12, 2012 4:00 PM
To: Jones, Lisa M.
Subject: INFO: Meet on PAGs as soon as possible

Lisa,

Per direction from Margo, here is information on each participant for July 19.
Please confirm successful receipt so that I can delete this from my records.

(See attached file: Copy of Waves 1-10-12 - Copy of WAVES_20_Excel_Template_V1 8 9.xls)

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322

"Schwab, Margo" ---07/12/2012 12:55:08 PM---Alan - would you please make sure that the appropriate people provide the information in the attache

From: "Schwab, Margo" Ex. 6 - Personal Privacy
To: Alan Perrin/DC/USEPA/US@EPA
Cc: "Whiteman, Chad" Ex. 6 - Personal Privacy, Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, "Jones, Lisa M." Ex. 6 - Personal Privacy
Date: 07/12/2012 12:55 PM
Subject: RE: Meet on PAGs as soon as possible

Alan – would you please make sure that the appropriate people provide the information in the attached spread sheet for security clearance? Once you have completed the spreadsheet, you can send it directly to Lisa Jones (cc in this email). We will be meeting in the NEOB, 10th floor (10103).
Margo
From: Alan Perrin [mailto:Perrin.Alan@epamail.epa.gov]
Sent: Wednesday, July 11, 2012 3:35 PM
To: Schwab, Margo
Cc: Whiteman, Chad; Lee Veal; Sara DeCair; Jonathan Edwards
Subject: RE: Meet on PAGs as soon as possible
Importance: High

Margo,

Please schedule our meeting with Dom Mancini (and appropriate OMB staff) for the **11-12 slot on July 19**. The principals from EPA will be Debbie Dietrich, Associate Administrator for Homeland Security, and Mike Flynn, Director of the Office of Radiation and Indoor Air; they will be accompanied by appropriate EPA staff.

I will get the time blocked out on EPA calendars and assume you will take care of the calendars at OMB and find a room for us to get together. Please let me know what information you need from EPA attendees for building access. Thank you for helping to quickly arrange this meeting. -Alan

~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

"Schwab, Margo" ---07/11/2012 11:55:47 AM---At this point Thursday July 19th seems like the only possibility before July 20th . 9:30-10:30, 11-

From: "Schwab, Margo" **Ex. 6 - Personal Privacy**
To: Sara DeCair/DC/USEPA/US@EPA, "Whiteman, Chad"
Ex. 6 - Personal Privacy
Cc: Alan Perrin/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA
Date: 07/11/2012 11:55 AM
Subject: RE: Meet on PAGs as soon as possible

At this point Thursday July 19th seems like the only possibility before July 20th . 9:30-10:30, 11-12 and 2-4:30 are currently open.

From: Sara DeCair [mailto:DeCair.Sara@epamail.epa.gov]
~~~~~~~~~~~~~

Sent: Wednesday, July 11, 2012 7:35 AM
To: Schwab, Margo; Whiteman, Chad; Schwab, Margo
Cc: Alan Perrin; Lee Veal
Subject: Meet on PAGs as soon as possible

Margo and Chad,

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Who is our point of contact (for calendars and scheduling) so that Debbie Dietrich, Mike Flynn, and and few of us staffers can come over as soon as possible? Debbie leaves the country on July 20th so we're under a bit of pressure, but I'm sure we can find a mutually agreeable time to sit down this week or next.

Thanks so much for providing a contact, and I look forward to talking with you!

Sara

desk 202-343-9108
cell 202-738-2871[attachment "Copy of Waves 1-10-12 - Copy of WAVES_20_Excel_Template_V1 8 9.xls" deleted by Lee Veal/DC/USEPA/US]

From: "Jones, Lisa M." Ex. 6 - Personal Privacy
To: Lee Veal/DC/USEPA/US@EPA
Subject: RE: INFO: Meet on PAGs as soon as possible
Submit Time: 7/13/2012 16:43:01

Thanks Lee.

From: Lee Veal [mailto:Veal.Lee@epamail.epa.gov]
Sent: Thursday, July 12, 2012 4:00 PM
To: Jones, Lisa M.
Subject: INFO: Meet on PAGs as soon as possible

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Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322

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desk 202-343-9108
cell 202-738-2871[attachment "Copy of Waves 1-10-12 - Copy of WAVES_20_Excel_Template_V1 8 9.xls" deleted by Lee Veal/DC/USEPA/US]

Submit Time: 3/12/2012 17:39:25
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
To: CN=Alan Perrin/OU=DC/O=USEPA/C=US@EPA
Cc:
Subject: File on Reg/Guidance Tier 1 projects

ORIA 2012 Regulatory and Guidance Overview

Materials_lv.docx ORIA 2012 Regulatory and Guidance Overview Materials_lv.docx

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322

Federal Guidance Report No. 14: Diagnostic and Interventional X-Ray Procedures

The current federal guidance on medical procedures (1976) is outdated and does not reflect current science, technology and radiation exposure concerns. (Think about how many more screening tools are used now as opposed to 1976.)

Applying the Best Available Science and Knowledge of Health Care

- *Medical exposures are largely responsible for doubling the average background-radiation exposure for the U.S. population.*
- The issue of increasing radiation doses to the public from diagnostic x-rays has been in the news over the last few years, particularly regarding the high doses received by children who are often exposed using adult sized settings.
- In a multi-year effort, EPA led an interagency work group that included medical and radiological professionals from agencies involved in health care delivery to review EPA's radiation protection guidance for the use of diagnostic and interventional x-rays.
- After careful coordination with senior officials at the Department of Health and Human Services, EPA submitted the proposed guidance for OMB and interagency review on October 7, 2011. This review is complete and OMB is scheduling an interagency meeting to discuss the comments they received (March 2012).

Avoiding Unnecessary Radiation Exposure

- EPA's proposed Federal Guidance Report 14 will almost certainly reduce unnecessary x-ray procedures (and costs) and reduce unnecessarily high doses from x-ray procedures in federal hospitals and clinics.
- This nonbinding guidance will serve as a useful reference for the private sector as well. Once approved and published, EPA's guidance on procedure and right-sized dose settings will lead to real health care benefits.

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Protective Action Guidance for Radiological Incidents (PAGs)

The PAGs guidance (1992) is out-of-date, it does not reflect the latest science and it is widely used by every state agency and the United States government.

Using the Best Available Science for Health and Environmental Protection

- EPA published the current Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (PAGs Manual) 20 years ago in 1992, using what is now outdated science, focusing heavily on responding to nuclear power plant incidents. Updated science, dosimetry and emergency management strategies have advanced significantly since 1992. Additionally, our nation now must consider the threat of non-traditional nuclear safety concerns such as the use of radiological dispersal devices.
- The events around the Fukushima nuclear power plant disaster drive home the need for appropriate emergency response guidance and planning for the United States. The PAGs are fundamental to this effort.

Promoting Integration with our State and Federal Partners

- As mandated by FEMA and NRC, State and local agencies use the PAGs Manual in their radiation safety programs for emergency response planning efforts, often directly incorporating EPA's PAGs information into their own regulations. Many states will not deviate from using the 1992 edition PAGs in their emergency planning until that document is superseded, despite the current availability of significantly improved calculations.
- Federal agencies including the NRC, DOE, DOD, and HHS, and those that they regulate such as the nuclear power sector all use the EPA PAGs Manual in their response planning strategies and regulation. Each of these agencies and industry groups has expressed sincere and immediate interest in the publication of revised PAGs Manual.
- EPA submitted the proposed PAGs document to OMB for interagency review in July 2011. EPA has not received these comments but we do have feedback indicating the need to address more fully the re-occupancy and final clean-up issues.

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ANPRM for Environmental Radiation Protection Standard for Nuclear Power Operations
(40 CFR Part 190)

The current Part 190 regulation is outmoded and lacks adequate ground water protection requirements. As with many of the radiation protection rules, ORIA will harmonize our regulations and guidance with those of the NRC, which implements EPA's nuclear fuel cycle standards.

Using the Best Available Science, Supporting the President's "All of the Above Strategy for Energy" [1] *and Environmental Protection*

- EPA promulgated 40 CFR Part 190 in 1977, the Agency's first radiation regulation. The proposed ANPRM will start the first review and revision of this regulation since written in 1977.
- Science, dosimetry and technology have advanced *substantially* since 1977.
- The current 40 CFR Part 190 rule contains no groundwater protection provisions, and the basis for radionuclide release limits is questionable.

Promoting Predictability and Integration

- For the first time in 30 years, new nuclear power plants are under construction. Older plants are extending their operating life well beyond original expectations to provide for an energy hungry nation.
- NRC implements EPA's standards in this area; and NRC would like to update their regulations and support our efforts to solicit input through this ANPRM. Additionally, addressing the shortfalls in the current 40 CFR Part 190 would provide timely follow-up to the Blue Ribbon Commission on America's Nuclear Future recommendations.
- Revising 40 CFR Part 190 and its implementing regulations will take time and the process of gathering input to support transparent regulatory decisions needs to start as soon as possible. There is general external support for revising this standard, along with a variety of opinions on how to revise this standard.
- EPA would propose to cover a broad range of facilities (milling, conversion and enrichment, fuel fabrication and reprocessing facilities, and nuclear power plants), and a wide range of issues (risk versus dose, dosimetry, release limits, water resource protection, spent fuel storage, new technologies.)

[1] http://www.whitehouse.gov/blog/2012/02/23/president-obama-describes-all-above-strategy-energy

ED_001057C_T3_01097748

National Emission Standards for Radon Emissions from Operating Mill Tailings (NESHAP)
(40 CFR Part 61, Subpart W)

The Subpart W NESHAP is outmoded and does not adequately cover new uranium extraction technologies such as in-situ and heap leaching.

Using the Best Available Science, Adapting to Changes in Industry Practices and Environmental Protection

- Promulgated in 1989, Subpart W does not include the best available science or consider current industry standard practices.
- When the Subpart W standards were developed, uranium recovery from ore relied almost exclusively on the conventional milling process; the uranium recovery industry has since adopted new technologies.
- In-situ recovery has surpassed conventional milling as the dominant form of uranium extraction in the U.S. and it is likely to constitute the bulk of future processing; the existing CAA standards for uranium milling lack explicit provisions for limiting radon emissions from active in-situ uranium recovery operations.

Legal Considerations

- EPA is proceeding with this review under a Settlement Agreement.
- EPA's proposed Subpart W migrates from the 1989 emission standard to a GACT Standard (Generally Available Control Technology), a novel approach for the Agency in this type of regulation.
- The proposal will clarify the facilities covered and the period of coverage, from first generation of by-product material to the final facility closure. The proposal would codify extension of coverage to the new leaching technologies.

Promoting Integration

- EPA would propose to coordinate these requirements with operating requirements implemented by the NRC.

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Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

(40 CFR Part 192)

The existing Uranium Extraction Rule is outmoded and it lacks adequate ground water protection requirements. As with many of the radiation protection rules, ORIA will be harmonizing our regulations and guidance with those of the Nuclear Regulatory Commission, which often implements EPA standards.

Adapting to Changes in Industry Practices and Environmental Protection

- EPA promulgated 40 CFR Part 192 (Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings) in 1983; the last revision took place in 1995 – almost 2 decades ago. Additionally, the Agency has revised several Safe Drinking Water Act standards since 1995.
- When the Part 192 standards were developed, uranium recovery from ore relied almost exclusively on the conventional milling process; the uranium recovery industry has since adopted new technologies. NRC and Agreement States currently are considering more than ten new license applications.
- In-situ recovery has surpassed conventional milling as the dominant form of uranium extraction in the U.S. and it is likely to constitute the bulk of future processing; the existing health and environmental standards for uranium milling lack explicit provisions for in-situ uranium recovery operations.
- In-situ recovery operations directly alter ground water chemistry; given the disruption of the aquifer inherent in the in-situ recovery process, standards addressing ground water restoration as well as monitoring and protection of surrounding aquifers are very important.

Promoting Predictability and Integration

- The Nuclear Regulatory Commission currently uses license conditions rather than regulatory standards to protect public health, safety, and the environment. License conditions are subject to legal challenge and can vary across all licensees. In discussions about Part 192, industry has expressed a need for "regulatory certainty."
- In the absence of regulatory standards, States exercising licensing authority by agreement with NRC have taken widely different approaches to protecting ground water, often using restoration goals inconsistent with requirements applicable to conventional mills.
- NRC tabled their efforts to establish ground water protection requirements for in-situ recovery operations, including ground water restoration stability and monitoring requirements, pending the availability of EPA's Part 192 rule.

ED_001057C_T3_01097748

Subject: Fw: SCHEDULE CHECK: Meet on PAGs as soon as possible
From: CN=Lee Veal/OU=DC/O=USEPA/C=US
Submit Time: 7/11/2012 13:00:44
To: "Alan Perrin" <Perrin.Alan@epamail.epa.gov>

I'll pop in to Caroline's today.

Lee
Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Office 202 343 9448
Cell. 202 617 4322
Lisa Nanko

----- Original Message -----
From: Lisa Nanko
Sent: 07/11/2012 12:55 PM EDT
To: Virginia Stradford; Lee Veal
Cc: "Debbie Dietrich" <dietrich.debbie@epa.gov>
Subject: Re: SCHEDULE CHECK: Meet on PAGs as soon as possible
Lee - I'm forwarding your request to Caroline Brown. She can check Debbie's schedule. (I'm in training.)

Lisa
Lisa Nanko
Environmental Scientist
Office of Homeland Security
Administrator's Office
U.S. Environmental Protection Agency
office: 202-564-0195
cell: 202-302-1102
Virginia Stradford

----- Original Message -----
From: Virginia Stradford
Sent: 07/11/2012 12:35 PM EDT
To: Lee Veal
Cc: Alan Perrin; Lisa Nanko; Sara DeCair
Subject: Re: SCHEDULE CHECK: Meet on PAGs as soon as possible
Hi Lee,

Mike is available on July 19 at either of these times.

Thanks.

-Ginny

Lee Veal---07/11/2012 11:55:11 AM---Good morning Virginia, Alan, and Lisa, OMB has responded to Sara's request for a meeting to discuss

From: Lee Veal/DC/USEPA/US
To: Virginia Stradford/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Lisa Nanko/DC/USEPA/US@EPA

Cc: Sara DeCair/DC/USEPA/US@EPA
Date: 07/11/2012 11:55 AM
Subject: SCHEDULE CHECK: Meet on PAGs as soon as possible

Good morning Virginia, Alan, and Lisa,

OMB has responded to Sara's request for a meeting to discuss the PAG and radiation guidance document with some possible times.
I understand that Mike Flynn and Debbie Dietrich were planning to attend with some staff from here.

Do any of their suggested times work for Mike, Debbie, and RPD?
Those times are: Thursday, July 19, at 9:30-10:30 am, 11-12 am, or 2-4:40 pm
Location: New Executive Office Building, OMB offices (plan on a bit of travel time, say 15-20 minutes before and after)

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
cell 202-617-4322
----- Forwarded by Lee Veal/DC/USEPA/US on 07/11/2012 11:49 AM -----

From: "Schwab, Margo" Ex. 6 - Personal Privacy
To: Sara DeCair/DC/USEPA/US@EPA, "Whiteman, Chad"
Ex. 6 - Personal Privacy
Cc: Alan Perrin/DC/USEPA/US@EPA, Lee Veal/DC/USEPA/US@EPA
Date: 07/11/2012 11:32 AM
Subject: RE: Meet on PAGs as soon as possible

At this point Thursday July 19th seems like the only possibility before July 20th . 9:30-10:30, 11-12 and 2-4:30 are currently open.

From: Sara DeCair [mailto:DeCair.Sara@epamail.epa.gov]
Sent: Wednesday, July 11, 2012 7:35 AM
To: Schwab, Margo; Whiteman, Chad; Schwab, Margo
Cc: Alan Perrin; Lee Veal
Subject: Meet on PAGs as soon as possible

Margo and Chad,

Per my voice message, we are hoping to set up a meeting to discuss the PAG Manual. Following Gina McCarthy's conversation with Dom last Friday, she indicated that the next step was for us to provide a more detailed briefing to OMB on the PAG Manual revision, since we're confident that inter-agency comments have been addressed. In fact, the recent addition of SOE/PLE exercise products make it a much more complete and useful guidance that is ready for public review and comment.

Who is our point of contact (for calendars and scheduling) so that Debbie Dietrich, Mike

Flynn, and and few of us staffers can come over as soon as possible? Debbie leaves the country on July 20th so we're under a bit of pressure, but I'm sure we can find a mutually agreeable time to sit down this week or next.

Thanks so much for providing a contact, and I look forward to talking with you!

Sara

desk 202-343-9108
cell 202-738-2871

You are welcome. Have a good weekend.

Lee
Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Office 202 343 9448
Cell. 202 617 4322

From: "Jones, Lisa M." [Lisa_M._Jones@omb.eop.gov]
Sent: 07/13/2012 04:43 PM GMT
To: Lee Veal
Subject: RE: INFO: Meet on PAGs as soon as possible

Thanks Lee.

From: Lee Veal [mailto:Veal.Lee@epamail.epa.gov]
Sent: Thursday, July 12, 2012 4:00 PM
To: Jones, Lisa M.
Subject: INFO: Meet on PAGs as soon as possible

Lisa,

Per direction from Margo, here is information on each participant for July 19.
Please confirm successful receipt so that I can delete this from my records.

(See attached file: Copy of Waves 1-10-12 - Copy of WAVES_20_Excel_Template_V1 8 9.xls)

Lee

Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
Office of Radiation and Indoor Air
Environmental Protection Agency
202-343-9448
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"Schwab, Margo" ---07/12/2012 12:55:08 PM---Alan - would you please make sure that the appropriate people provide the information in the attache

From: "Schwab, Margo" Ex. 6 - Personal Privacy
To: Alan Perrin/DC/USEPA/US@EPA
Cc: "Whiteman, Chad" Ex. 6 - Personal Privacy, Lee Veal/DC/USEPA/US@EPA, Sara DeCair/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, "Jones, Lisa M." Ex. 6 - Personal Privacy
Date: 07/12/2012 12:55 PM
Subject: RE: Meet on PAGs as soon as possible

Alan – would you please make sure that the appropriate people provide the information in the attached spread sheet for security clearance? Once you have completed the spreadsheet, you can send it directly to Lisa Jones (cc in this email). We will be meeting in the NEOB, 10th floor (10103).
Margo
From: Alan Perrin [mailto:Perrin.Alan@epamail.epa.gov]
Sent: Wednesday, July 11, 2012 3:35 PM
To: Schwab, Margo
Cc: Whiteman, Chad; Lee Veal; Sara DeCair; Jonathan Edwards
Subject: RE: Meet on PAGs as soon as possible
Importance: High

Margo,

Please schedule our meeting with Dom Mancini (and appropriate OMB staff) for the **11-12 slot on July 19**. The principals from EPA will be Debbie Dietrich, Associate Administrator for Homeland Security, and Mike Flynn, Director of the Office of Radiation and Indoor Air; they will be accompanied by appropriate EPA staff.

I will get the time blocked out on EPA calendars and assume you will take care of the calendars at OMB and find a room for us to get together. Please let me know what information you need from EPA attendees for building access. Thank you for helping to quickly arrange this meeting. -Alan

~~~~~~~~~~~~~
Alan Perrin, Deputy Director
Radiation Protection Division, USEPA
office (202) 343-9775 | bb (202) 279-0376

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Subject: Meet on PAGs as soon as possible

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Sara

desk 202-343-9108
cell 202-738-2871[attachment "Copy of Waves 1-10-12 - Copy of WAVES_20_Excel_Template_V1 8 9.xls" deleted by Lee Veal/DC/USEPA/US]

Thank you Lisa!
Lee B. Veal
Director, Center for Radiological Emergency Management
Radiation Protection Division
U.S. Environmental Protection Agency
Office 202 343 9448
Cell. 202 617 4322
Lisa Nanko

----- Original Message -----
From: Lisa Nanko
Sent: 07/11/2012 12:55 PM EDT
To: Virginia Stradford; Lee Veal
Cc: "Debbie Dietrich" <dietrich.debbie@epa.gov>
Subject: Re: SCHEDULE CHECK: Meet on PAGs as soon as possible
Lee - I'm forwarding your request to Caroline Brown. She can check Debbie's schedule. (I'm in training.)

Lisa
Lisa Nanko
Environmental Scientist
Office of Homeland Security
Administrator's Office
U.S. Environmental Protection Agency
office: 202-564-0195
cell: 202-302-1102
Virginia Stradford

----- Original Message -----
From: Virginia Stradford
Sent: 07/11/2012 12:35 PM EDT
To: Lee Veal
Cc: Alan Perrin; Lisa Nanko; Sara DeCair
Subject: Re: SCHEDULE CHECK: Meet on PAGs as soon as possible
Hi Lee,

Mike is available on July 19 at either of these times.

Thanks.

-Ginny

Lee Veal---07/11/2012 11:55:11 AM---Good morning Virginia, Alan, and Lisa, OMB has responded to Sara's request for a meeting to discuss

From: Lee Veal/DC/USEPA/US
To: Virginia Stradford/DC/USEPA/US@EPA, Alan Perrin/DC/USEPA/US@EPA, Lisa Nanko/DC/USEPA/US@EPA
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