To: White, Sharon[White.Sharon@epa.gov]; Nanko, Lisa[Nanko.Lisa@epa.gov]
From: DeCair, Sara
Sent: Wed 6/17/2015 8:03:08 PM
Subject: For OHS review: Water PAG
Draft Protective Action Guide 6-16-15 OGWDW.docx

Sharon, Lisa,

As you can see this has been through reviews at several levels and numerous times. We're hoping you can take a fairly quick look and let us know what you think by July 1st, perhaps? That is about as soon as we hope to get finished with inter-office briefings on it and make our way to OP with the FR package. Note that I am always an optimist on timeframes and will not reject any feedback you have on it, even much later than that.

Maybe the thought of getting back to work to review such exciting things will speed Lisa's recovery from her procedure today! I can hope…

Sara

From: Christ, Lisa
Sent: Wednesday, June 17, 2015 1:52 PM
To: DeCair, Sara; Veal, Lee; Perrin, Alan
Cc: Hernandez-Quinones, Samuel; Ellis, Jerry
Subject: FW: Clean Version of PAG Document (6/16/15)

All-

Attached is the revised proposal which incorporates Ken's comments. At this point we've obtained review by the AA for OW and OGC.

Thanks-

Lisa

From: Hernandez-Quinones, Samuel
Sent: Tuesday, June 16, 2015 1:19 PM
To: Christ, Lisa
Subject: Clean Version of PAG Document (6/16/15)

Attached

Sam

==========

Samuel Hernández Quiñones, P.E.
Environmental Engineer
Environmental Protection Agency
Office of Water
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-564-1735

"USEPA Protecting Human Health and the Environment"

To: Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]; Jessica Wieder[Wieder.Jessica@epa.gov]
From: DeCair, Sara
Sent: Tue 6/9/2015 5:54:19 PM
Subject: Last revision for today: Q&A
Q&A Document 6-9-2015 last edits for today.docx

I'm going to send a clean version to OW proposing that we bring it to ODs briefing on Friday as it is. I left in just my few additions in this version for you all to take a look at. If you see anything horrible, please do let me know! We are guessing that ODs will have some Q's for us to add, too. Thank you so much for working on this!!

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

Room 1416 B in WJC West

Internal questions and answers for the Draft Drinking Water PAG Announcement
EPA Internal Deliberative Document—Do Note Quote, Cite, or Release

Internal Q&A's

Question 1: Why is there a need for a drinking water PAG when EPA already has regulations for radionuclides in drinking water?

Answer

Under the Safe Drinking Water Act (SDWA), the Agency established a dose-based Maximum Contaminant Level (MCL) for beta particle and photon (gamma) radioactivity of 4 mrem/yr; based on lifetime exposure criteria, which assume 70 years of continued exposure to contaminants in drinking water.

During the development of the drinking water PAG the Agency determined that it is not appropriate to base response measures during short-term emergency incidents on lifetime exposure criteria.

While the SDWA framework is appropriate for normal operations, it does not provide the necessary tools to assist emergency responders with determining the need for an immediate protective action (do not drink orders) when a MCL is exceeded. The goal is to prioritize potentially scarce water resources for those most at risk in a disaster response.

Regardless of the cause of an incident, EPA expects that any drinking water system impacted during a radiation incident will take action to return to compliance with the Safe Drinking Water Act levels as soon as practical.

Question 2: Will the drinking water PAG weaken EPA's regulations for radionuclides in drinking water?

Answer: No. The drinking water PAG is non-regulatory guidance for emergency situations only. Public water systems must comply with EPA's SDWA regulations. Water systems are expected to take corrective measures to meet SDWA radionuclide standards as soon as possible.

Question 3: Why is there a different guidance for pregnant women and children versus adults?

Answer: EPA proposes a lower dose threshold for sensitive ages because fetuses, infants, and children are at greater risk from radiological exposures than adults. This is due to two reasons. First, their cells in their growing bodies develop at such a rapid pace, making them more sensitive to the potential harmful effects of radiation. Second, they have more time to be affected by longer-lived radionuclides that clear slowly from the body; a newborn that ingests radioactive material in water might be subject to the effects of that radiation for a longer period of time than an adult.

Question 4: Did EPA consider any information from other countries when developing the

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drinking water PAG?

Answer: Yes. Japan used a very similar set of guides for infants on formula (near 100 mrem) and near 400 mrem for everyone else. This helped them prioritize the use of bottled water for the most sensitive population.

Question 5: FDA already has a PAG for food of 500 mrem. Why did EPA just publish a drinking water PAG of 500 mrem?

Answer: EPA's drinking water PAG is designed to limit risk due to radiological contamination of the drinking water supply. The FDA food PAG accounts for food ingestion and considers how water may be used in the preparation of some types of food products or how radionuclides transported through water might end up deposited in crops and ultimately enter the food supply (like milk or vegetables).

Because a radiological event may result in contamination of food, water, or both, a strict delineation between the two ingestion routes may not be straightforward. FDA and EPA PAGs and procedures are complementary and can be adapted to apply to the specifics of a given situation. Due to inherent differences in how the food and water supplies are protected, the intervention/response levels for food and water differ.

Question 6: What is the difference between the FDA Food PAG and EPA's Drinking Water PAG?

Answer: They both are implemented using "derived levels" called DILs and DRLs. There are two things to understand about the relationship between the FDA's Food PAG and EPA drinking water PAG; 1) They take water into account in different ways (food preparation vs. drinking water consumption) and 2) Decision makers can use both sets of guidance as appropriate for the specifics of the emergency at hand.

The FDA Food PAG was developed with a primary focus on responding to contamination events affecting the food supply. The EPA drinking water PAG was developed with a primary focus on responding to contamination events affecting the drinking water supply. The FDA DILs include a water component in the calculations (as part of the mass of the total diet) even though it is not regulated by FDA. Correspondingly, the EPA DRL calculations used survey data about tap water usage which includes drinking water intake as well as water added to beverages, and water added to foods during preparation, but not water intrinsic in food as purchased. This allows the DIL and DRL calculations to account for the possibility that some ingestion contamination could come from the other ingestion route.

Question 7: Why is there a big difference in guidance for 15-year olds compared to 16-year olds? If my child just turned 16, I can't understand why he would be different from a 15-year old.

Answer: EPA made projections about risks to adults and risks to the most sensitive populations resulting from exposure to radiation from drinking water. EPA evaluated six different age groups, including infants, 1, 5, 10, 15-year olds and adults. The adult age group is representative of organ size and intake rates for people from age 16 up, and conservative assumptions provide additional assurance that radiation doses will be kept low.

The PAGs provide guidance best on the best science available but the PAGs also give local responders the flexibility to decide whether protective actions should be extended to age groups other than those prescribed in the proposed drinking water PAG. Decisions to extend the protective actions to anyone under age 18 or apply a single number to an entire population, would be based on the particular conditions of each incident and would also have consider how such actions are implemented by local responders.

Question 8: I am pregnant and I don't feel like my unborn baby should be placed in the same category as a child at age 15. Did EPA consider a separate guidance for pregnant women?

Answer: Yes. EPA evaluated the different age groups for the radionuclides most likely to be released in a radiation incident and selected the most limiting concentration that would result in a 100 mrem annual dose. This lower tier PAG applies to pregnant women to protect the fetus. This approach is conservative and protective of all sensitive populations (i.e., infants, 1, 5, and 10 year olds).

Question 9: What about nursing mothers?

Answer: To protect nursing infants and young children, the lower tier PAG applies to nursing mothers as well.

Question 10: Why wouldn't my water department give me bottled water immediately following a radiation event?

Answer: The EPA drinking water PAG is non-regulatory guidance to assist emergency management officials when making response plans. Options available to your water department for providing an alternate source of drinking water could include: bottled water, altering the source water (such as switching to ground water), interconnection between systems, or a combination of these actions.

Question 11: How does the EPA drinking water PAG for adults and infants compare to the drinking water emergency standards for adults and infants established by the Japanese

government?

Answer: The Japanese adult drinking water emergency standard of 300 Bq/L corresponds to a dose of about 1 mrem/day, or 365 mrem over the course of a year (on the same order of magnitude as EPA's proposed PAG for the adult population), assuming a high-end default water ingestion rate of 2 L/day. Using the Japanese infant drinking water emergency standard of 100 Bq/L, from birth until the age of 1, and an infant consumes an average of 0.2 L/day over the course of the year, the projected dose is 134 mrem in a year.

Question 12: Did EPA consider only one option when developing the drinking water PAG?

Answer: No. EPA considered the following options:

> ***Option #1 Do nothing:*** local governments or states may develop individual PAG levels, or EPA will need to create one after an incident occurs. Experience has shown that local governments often rely on EPA advice when making decisions regarding the safe use of drinking water after contamination incidents. Radiation protection decisions are almost always based on federal guidance in some form. Affected federal entities (e.g., effected military personnel) would need federal guidance.
>
> ***Option #2 Use the SDWA MCL (4 mrem) as the level to provide an alternate source of drinking water:*** MCLs are not intended to inform 'do not drink' levels, in addition MCLs are based on the assumption of a 70 year exposure timeframe.
>
> **Option #3 Adopt DHS & FDA benchmarks**: 500 mrem from water for the first year after an incident (DHS covers water after a terrorist attack and FDA guide applies to food). This allows for consistency with guidance that is already in use and publicly available.
>
> **Option #4 Adapt benchmarks that have long-standing acceptance, and add additional protection for pregnant women and children:** 500 mrem for the general population and a lower dose level for children and pregnant women.

Question 13: What about the total dose I might incur if this water PAG is established?

Answer: EPA's PAGs are doses to be avoided, but, assuming a person receives all the doses we recommend to be avoided, that individual would still receive a dose in a range where no observable negative health effects exist.

- 1rem if not evacuated
  - (5 rem may be used when conditions are more dangerous for evacuation, for instance in severe weather or for special populations like prisoners)
  - (5 rem thyroid dose if not given KI – but this is not a whole body dose)
- 2 rem first year + 0.5 rem second year if not relocated

- 0.5 rem from food if no local embargoes are warranted
- 0.5 rem from water if no alternative water source is warranted
- Additional residual dose on the way to cleanup goals.
- All of which adds up to less than 5 rem, which is in a range where no observable negative health effects exist. It also happens to be the routine annual radiation dose limit for radiation workers and is assumed to be a once (or never!) in a lifetime event for any of us. Note that even in extreme cases, these projections fall well within international guidelines for taking emergency actions.

The Advisory Team for Environment, Food, and Health

Frequently Asked Questions and Answers
(current May ⊥ , 20¶ ↑)

1. **What (who) is the Advisory Team?**

   The Federal Radiological Preparedness Coordinating Committee (FRPCC) established the Subcommittee for Environment, Food, and Health. Its surrogate, the Advisory Team for Environment, Food, and Health (Advisory Team) was established to assist in international and domestic nuclear emergencies. A brief history follows.

   The Advisory Team concept was incorporated into the Federal Radiological Emergency Response Plan (FRERP) in May 1996. In 1997, an Environment, Food, and Health Subcommittee of the FRPCC was established. (44CFR351.11.) In 2004, the FRERP was superseded by the National Response Plan (NRP). The NRP contains plan annexes, one of which is the Nuclear/Radiological Incident Annex. In March of 2008, the NRP was superseded by the National Response Framework (NRF). All previous annexes to the NRP remained in effect.

   The duties of the Advisory Team were incorporated into the Nuclear/Radiological Incident Annex on December 2005. The Nuclear/Radiological Incident Annex, last revised and posted to the NRF website in June of 2008, remains in effect today.

   The Advisory Team membership includes the Department of Health and Human Services, specifically the Centers for Disease Control and Prevention (CDC)[1] and the Food and Drug Administration (FDA); the US Environmental Protection Agency (EPA); the US Department of Agriculture (USDA); and other Federal agencies as requested.

2. **How is the Advisory Team activated and deployed? How long are Advisory Team members available to local responders/officials in the field?**

   *The Advisory Team will be activated when the Department of Homeland Security (DHS), a Coordinating Agency, or a State, tribal or local government contacts the) '$ ∂ V └ (PHUJHQF\ └ 2SHUDWLRQV └ &HQWHU └ ♂ (2&□ └ E\ └ FDOOLQJ **866-300-4347** and requests support from the Advisory Team. DOE will request activation of the Advisory Team whenever the FRMAC is activated.*

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[1] Health physics staff of the Agency for Toxic Substances and Disease Registry (ATSDR) are included in the CDC membership of the Advisory Team.

After receiving a request for Advisory Team support, the CDC will then contact each member agency (according to directions provided to CDC by member agencies) and declare that a request for Advisory Team support has been made. Each member agency will then follow their own internal procedure for notifying/activating their designated Advisory Team members. Once formally activated, the team representatives establish a remote phone bridge with their fellow team members and others as needed including the Coordinating Agency and the DOE Consequence Management Home Team (CMHT).

If requested by a Federal agency or a State, local or tribal government, and with concurrence of the Coordinating Agency, the Advisory Team member agencies will follow their own agency procedures for deploying team members to the location(s) designated by the Coordinating Agency. According to the Nuclear/Radiological Incident Annex, the Advisory Team is expected to integrate into the Incident Command (IC)/Unified Command (UC) in the Planning Section to provide technical expertise to the IC/UC and to the Coordinating Agency. Team members arriving onsite would elect a site Advisory Team Chairperson. The site Advisory Team Chairperson would maintain communication with the IC/UC.

Advisory Team members will be on call and available for as long as the local customers require their expertise.

3. **Should a radiological emergency occur, how many people are typically deployed from the Advisory Team to assist with the radiological emergency?**

Team members and availability will vary with the extent of the incident. Deployed team members onsite will usually consist of the site Advisory Team Chairperson, a Documentation Unit Leader (records manager), and at least one agency subject matter expert. For most responses, a full team will not arrive for at least 24 hours and the on-site team members will perform multiple tasks. See the answer to FAQ # 16 for a list of recommended resources to support Advisory Team operations.

4. **What are typical issues that Advisory Team members may be called upon to address?**

The Advisory Team provides advice in matters related to the following:

- *Environmental assessments (field monitoring) required for developing recommendations with advice from State, tribal and local governments and/or the Federal Radiological Monitoring and Assessment Center (FRMAC);*
- *Protective Action Guides (PAGs) and their application to the emergency;*
- *Protective Action Recommendations (PARs) using data and assessment from the FRMAC;*

- *Protective actions to prevent or minimize contamination of milk, food, and water, and to prevent or minimize exposure through ingestion or inhalation;*
- *Recommendations regarding the disposition of contaminated pets, livestock, poultry, other agricultural products (feed and crops), and foods;*
- *Recommendations for minimizing losses of agricultural resources;*
- *Provide guidance on availability of clean food, animal feed, and water supply inspection programs to ensure wholesomeness;*
- *Recommendations on relocation, reentry, and other radiation protection measures prior to recovery;*
- *Recommendations for recovery, return, and cleanup issues;*
- *Health and safety advice or information for the public and for emergency workers;*
- *Estimated effects of radioactive releases on human health and the environment; and*
- *Other matters, as requested by the IC/UC or the Coordinating Agency.*

5. What policy decisions are made by the Advisory Team?

None. The Advisory Team is an advisory body that makes protective action recommendations.

The Advisory Team DOES NOT make policy decisions or protective action decisions. State, local and tribal authorities are responsible for making policy and protective action decisions.

The Advisory Team DOES provide coordinated technical and scientific advice through the Coordinating Agency, not directly to State and elected officials. Recommendations and advice are based on science and best practices. The Coordinating Agency is responsible for ensuring that all outputs from the Advisory Team are shared with appropriate response organizations.

6. What if incident command disagrees with Advisory Team recommendations?

The Advisory Team makes recommendations based on technical and scientific information available and current best practices. There are likely to be societal factors that impact decision making. The decisions made by the incident command or other decision makers may take all those factors into consideration. The advice from the Advisory Team is only one of those factors.

7. Does the Advisory Team talk to the media?

The Advisory Team will refer all requests for media interviews to the Joint Information Center. If there is no Joint Information Center, the Advisory Team

will refer media requests to the Coordinating Agency. Advisory Team members will inform their parent agency's communications staff according to agency policy. Members of the onsite Advisory Team will not normally hold media interviews. Advisory Team members will speak directly to the media only with approval from their parent agency and if requested to do so by the Coordinating Agency.

Public information officials can consult the Advisory Team, but the responses should be coordinated as "one voice" and not give conflicting information about the same inquiries. The Coordinating Agency should be the primary point of contact for interface with the media.

8. What Agencies provide members for the Advisory Team?

The Advisory Team membership includes participation from individuals working for the Department of Health and Human Services, specifically the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA); the US Environmental Protection Agency (EPA); the US Department of Agriculture (USDA); and other Federal agencies as requested.

9. What knowledge requirements should serving members have?

Each Subcommittee member and potential Advisory Team member shall have a basic understanding of the concepts of radiation detection, dosimetry and protection. They shall have a basic understanding of the EPA and FDA protective action guides (PAGs) and derived intervention levels (DILs), and their use. Each Team member should be able to convey his or her own parent agency directives as applicable to radiological health and public safety.

Team members must possess a working knowledge of resources such as the Consequence Management Web (CMweb), the National Atmospheric Release Advisory Center (NARAC) and the Interagency Modeling and Atmospheric Assessment Center (IMAAC) and possess the appropriate computer accounts to access these resources. Members should possess a working knowledge of the Federal Radiological Monitoring and Assessment Center (FRMAC) and its function during an event. Team members must be familiar with the data products produced by the FRMAC and NARAC/IMAAC and be able to convey their meaning to on-site and other customers as applicable.

Members should be familiar with current incident command procedures and posture and government agency memoranda of understanding. Each team member should be familiar with Advisory Team field operations including Advisory Team chain of command and local incident command functionality (i. e.

the Advisory Team should integrate into the Planning Section and/or co-locate with the FRMAC).

10. When an event happens and my local response resources are overwhelmed, how do I request the Advisory Team?

If an event is significant enough, normal chains of communication usually proceed through local governmental entities, then through gubernatorial venues, then through Regional FEMA contacts and finally notification of the Department of Homeland Security (DHS), National Operations Center, in Washington, DC. After an event has occurred, the State, local or tribal government can directly contact the) '$ ∂ V└ (PHUJHQF\ └ 2SHUDWLRQV└&HQWHU└ ♂ (2&□ └ E\ └ FDOOLQJ ***866-300-4374*** *and request support from the radiological Advisory Team. Such requests will activate the Advisory Team. Also, the DOE will request activation of the Advisory Team whenever the FRMAC is activated.*

After receiving a request for Advisory Team support, the FDA will then contact each Subcommittee member agency and declare that a request for Advisory Team support has been made. Each member agency will then follow their own internal procedure for notifying/activating their designated Advisory Team members.

11. What is the "remote" Advisory Team?

The "remote" Advisory Team consists of agency team members linked together with each other as well as the Subcommittee Chairperson (or designee) and the site Advisory Team Chairperson (if applicable), by phone bridge. The goal is to have a remote Advisory Team within 2 hours of the initial notification to the FDA EOC. Each team member will maintain contact with his/her parent agency and provide updates of Advisory Team activities. Some or all remote team members should have access to internet resources such as the CMweb and NARAC/IMAAC. The remote Advisory Team will be used during exercises and actual events.

12. How do I request the services of a remote Advisory Team?

After an actual event, the remote Advisory Team is the precursor to the deployment of other team members to the incident scene. Requests for remote and/or on-site Advisory Team support during an actual event should be routed through the FDA by contacting the FDA EOC at ***866-300-4374****.*

A remote Advisory Team may also be activated for an exercise. Requests for Advisory Team support for exercises should be addressed to the Regional FEMA offices during the planning phase of an exercise. Requests for Advisory Team

participation in exercises can also be made by contacting Jeff Sincek (FDA) at ***614-227-5780 x1111*** *(e-mail Jeffrey.Sincek@fda.hhs.gov).*

13. After an incident occurs, when is the Advisory Team available?

The goal is to have a remote Advisory Team within 2 hours of the initial notification to the FDA EOC. Each team member will maintain contact with his/her parent agency and provide updates of Advisory Team activities. The Advisory Team members must be activated in order to deploy to the scene.

If requested by a state, tribal or local government, and with concurrence of the Coordinating Agency, the Advisory Team member agencies will follow their own agency procedures for dispatching team members to the location(s) designated by the Coordinating Agency. When established at the scene, the on-site Advisory Team members will assume control of Advisory Team activities. At best, the physical deployment and assembly of the on-site team could take 24 hours.

14. Does the Advisory Team tell us what to do?

No. The Advisory Team has no regulatory authority. The Advisory Team provides expert guidance and advice to decision makers regarding radiological protection of the public, emergency workers, the use and meaning of PAGs, and late phase incident recovery actions. To provide this service, the Advisory Team will use standard briefing products provided from the FRMAC. Customers (State, local officials, etc.) are encouraged to request that FRMAC generate the standard briefing products to accommodate their concerns and needs.

15. To whom does the Advisory Team report?

The Advisory Team is expected to incorporate into the Incident Command (IC)/Unified Command (UC) in the Planning Section to provide technical expertise to the IC/UC and the Coordinating Agency. The Advisory Team may also provide liaisons to and/or coordinate with the Principal Federal Official, Joint Field Office, State, local and tribal government Emergency Operation Centers, and others as needed. Therefore, the Advisory Team may be in several locations at any one time, including being co-located with the FRMAC. When located at multiple locations, the Advisory Team will rely upon phone bridges and internet connections to communicate with other Advisory Team members and their parent agencies.

16. If the services of the Advisory Team are requested, what resources will they require from my organization or the host agency?

When deployed, the Advisory Team will request the following resources from the host agency:

- ☐ *Work space for 6 or more*
- ☐ *Telephone lines (at least 2)*
- ☐ *Electrical outlets (at least 4)*

At least one computer terminal with high speed Internet access must be available. Internet access may require secure connection and should be evaluated on a case by case basis by the site Advisory Team Chairperson.

The resources listed above are in response to a larger incident. The host agency is typically NOT the local or state organization, but rather a larger entity such as the Coordinating Agency, or Cooperating Agency, during earlier phases of response. The needed facilities to support Advisory Team members for longer term operations will be provided by the Coordinating Agency. Team member wages and compensation will be provided by their respective parent agencies.

17. Advisory Team membership requires experience, so what experience is required?

Team members should regularly participate in at least one exercise annually in a support or on-site Advisory Team capacity. Exercises may include ingestion pathway exercises for nuclear power plants, national scale drills, military or DOE exercises involving Special Nuclear Material (SNM) or other radioactive materials as well as detailed interagency table top discussions.

Team members must possess appropriate training and experience in field activities, drills, plume exercises, ingestion exercises, or actual event responses commensurate with their function in the field or in supporting response operations. All Team members must be proficient in the use of computer and web based communication, documentation and analytic tools, and be equipped so as to be self sufficient in internet applications and communications technology to the degree required by the event or exercise .

18. How can I request more information about the Advisory Team?

Additional information about the Advisory Team can be obtained from the Conference of Radiation Control Program Directors (CRCPD) website at http://www.crcpd.org. Direct instructional information can be requested from the Advisory Team through its outreach program. Please call Jeffrey Sincek Evans at ***614-227-5780 x1111*** *(e-mail Jeffrey.Sincek@fda.hhs.gov) to schedule an outreach presentation from an Advisory Team member or to request Advisory Team participation in an exercise.*

For Advisory Team assistance during an actual event, State, tribal, or local governments should/can directly contact the FDA's Emergency Operations Center (EOC) by calling ***866-300-4374*** *and request support from the radiological Advisory Team.*

19. What is the level of participation required for the Advisory Team during drills and exercises?

Advisory Team participants work closely with State, local and tribal officials regarding protection of the public from radiation detriment. Under the direction of the site Advisory Team Chairperson, on-site team members work within the Incident/Unified Command Planning Section. Team members may be asked to function in a liaison capacity with the State, local and tribal customers and the Coordinating Agency. The team will provide advice through the Coordinating Agency as requested. Team members will also assist customers with the understanding of FRMAC/NARAC data products used in decision making by judges, Governors, commissioners, and other publically elected officials. The use of Advisory Team liaisons is highly encouraged. Liaisons are familiar with the FRMAC briefing products which are available to help public officials understand the scope of radiological events. Team members are available to assist customers during incidents from the onset (using the remote team), through the intermediate and recovery phases. The Advisory Team is an added resource to State, local and tribal governments regarding many radiation protection issues. It is not a function of the Advisory Team to assume control of an incident scene, make policy with regard to radiation protection, or mandate compliance with applicable regulations.

On-site team members maintain contact between their parent organizations and the Subcommittee Chairperson (or designee such as the Advisory Team Logistics Coordinator). The main remote support site for Advisory Team activities during incidents is currently the Emergency Operations Center (EOC) of the Centers for Disease Control and Prevention (CDC) in Atlanta, GA.

To: Nesky, Anthony[Nesky.Tony@epa.gov]
From: DeCair, Sara
Sent: Tue 5/19/2015 9:59:00 PM
Subject: For tomorrow 1 pm eastern call
Internal QandAs Drinking Water PAG 4-16-15.docx

Tony,

Thanks for accepting the last minute invite I sent today. The attached is what Im working from for the Internal QAs for water PAG. Jess had provided Jerry Ellis some help but I don't think they have comms people helping from their end and I've gotten a bit nervous. Talk to you tomorrow!

S.

Internal questions and answers for the Draft Drinking Water PAG Announcement
EPA Internal Deliberative Document—Do Note Quote, Cite, or Release

Internal Q&A's

Q: Will the drinking water PAG weaken EPA's regulations for radionuclides in drinking water?

A: No. The drinking water PAG is non-regulatory guidance for emergency situations. Public water systems that are subject to the radionuclides rule would still need to comply with EPA's regulations.

Q: Why is there a different guidance for pregnant women and children versus adults?

A: Fetuses, infants, and children are at greater risk from radiological exposures than adults. This is due to the greater sensitivity of the developing body to the potential harmful effects of radiation and the longer dose commitment period for the longer-lived radionuclides that clear slowly from the body; a newborn that ingests radioactive material in water might be subject to the effects of that radiation for a longer period of time than an adult.

Q: Did EPA consider any information from other countries when developing the drinking water PAG?

A: Yes. Japan used a very similar set of guides for infants on formula (near 100 mrem, depending on assumptions) and near 400 mrem for everyone else. This prioritized the use of bottled water for the most sensitive population.

Q: FDA already has a PAG for food and water of 500 mrem. Why did EPA just publish a drinking water PAG of 500 mrem?

A: A radiological event may result in contamination of food, water, or both and a strict delineation between the two ingestion routes may not be straightforward. For example, ground water is taken up into crops that ultimately enter the food supply and beverages such as coffee are made from drinking water. FDA and EPA PAGs and procedures have been developed independently but are complementary and can be adapted to apply to the specifics of a given situation. Due to inherent differences in how the food and water supplies are protected, the intervention/response levels for food and water differ.

Q: What is the difference between the FDA Derived Intervention Levels (DILs) versus EPA's Derived Response Levels (DRLs)?

A: The FDA DILs were developed with a primary focus on responding to contamination events affecting the food supply whereas the EPA DRLs were developed with a primary focus on responding to contamination events affecting the water supply. However, factors were included in both sets of derivations to compensate for the fact that an event could affect both supplies. This was accomplished for the FDA DILs by including a drinking water component in the calculations even though it is not regulated by FDA. Correspondingly, the EPA DRL calculations used a dietary water intake that was large enough to include water consumed via beverages and foods even though these are not regulated by EPA. This allows the DIL and DRL calculations to account for the possibility that some ingestion contamination could come from

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the alternate ingestion route.

Q: Why is there a need for PAGs when EPA already has a regulation for radionuclides in drinking water?

A: While the SDWA framework is appropriate for day-to-day normal operations, it does not provide the necessary tools to assist emergency responders with determining the need for an immediate protective action. However, regardless of the cause of an incident, EPA expects that any drinking water system impacted during a radiation incident will take action to return to compliance with the National Primary Drinking Water Regulation (NPDWR) levels as soon as practical.

Q: Why is there a big difference in guidance for 15 year olds compared to 16 year olds? If my child just turned 16, I can't understand why he would be different from a 15 year old.

A: EPA evaluated six different age groups which included the infant, 1, 5, 10, 15 year olds and adults. The adult category begins at 16. These age groups are used by health physicists when developing guidance for avoiding doses of radiation. EPA found that the most sensitive individuals to radiation are individuals aged 15 and younger (this includes pregnant woment).

Q: I am pregnant and I don't feel like my unborn baby should be placed in the same category as a child at age 15. Did EPA consider a separate guidance for pregnant women?

A: Fetuses, infants, and children are not a homogenous group. There are considerable differences in the transmission of radiological drinking water contaminants to a fetus via the placenta, to an infant via formula, and to a child via direct consumption. There is also considerable variation in the sensitivities of various organs to radiological threats in developing bodies. Nevertheless, for the sake of making clear and executable decisions in the intermediate phase of emergency response, EPA believes it is important to propose a single PAG for these more sensitive members of the population. Keeping PAGs relatively simple helps to minimize confusion during their implementation.

Q: Why wouldn't my water department give me bottled water immediately following a radiation event?

A: The EPA drinking water PAG is non-regulatory guidance to assist emergency management officials when making plans. A decision could be made to provide your community with bottled, which is another possible option during an emergency situation. The water may come from a nearby water system or from a water bottling company.

Q: Did EPA consider only one option when developing the drinking water PAG?

A: No. EPA considered the following options:

Option #1 Do nothing: local governments or states may develop individual PAG levels, or EPA will need to create one after an incident occurs. Experience has shown that local governments often rely on EPA advice when making decisions regarding the safe use of drinking water after contamination incidents. Radiation protection decisions are almost always based on federal guidance in some form. Affected

federal entities (e.g., effected military personnel) would need federal guidance.

Option #2 Use the SDWA MCL (4 mrem) as the level to provide an alternate source of drinking water: MCLs are not intended to inform 'do not drink' levels, in addition MCLs are based on the assumption of a 70 year exposure timeframe.

Option #3 Adopt DHS & FDA benchmarks: 500 mrem from water for the first year after an incident (DHS covers water after a terrorist attack and FDA guide applies to food). This allows for consistency with guidance that is already in use and publicly available.

Option #4 Adapt benchmarks that have long-standing acceptance, and add additional protection for pregnant women and children: 500 mrem for the general population and a lower dose level for children and pregnant women.

ED_001057_00012823

To: Evans, Ken[Ken.Evans@illinois.gov]
From: DeCair, Sara
Sent: Tue 5/12/2015 5:09:00 PM
Subject: Presentation you requested
NCRP_PAGs 3-12-2015.pptx

Ken,

I'm glad you're interested in the topic of this tough set of decisions for the PAGs – what to do with age groups. Of course this discussion is not ready to broadcast to the world, but I did pretty much say all of this to the NCRP and hopefully it'll be clearly laid out when we finalize the PAG Manual. One day!

Cheers,

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

Room 1416 B in WJC West

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Tue 5/12/2015 1:39:57 PM
Subject: Project plan (I will bring copies to you)
RP_AP-BR1-8_PAG-Manual_(DeCair) 5-12-2015.docx

But just for fun, I looked at meeting times possible for Mike Flynn, Peter Grevatt, Jim Woolford and Reggie Cheatham. Reggie's calendar is totally blocked, but the other three have multiple times available on June 3, 4, 5, 15, 17, 19, 22, 23, 25, 26, 29 and 30.

!!!!

I'll be by with copies in a bit.

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

Room 1416 B in WJC West

Revision Date: 5/7/2015

Action Plan – BR1-8: Protective Action Guide (PAG) Manual

Strategy: BR1: Identify gaps in the current radiation protection framework and address them by initiating or updating guidance documents or regulations to reflect current science and policy.

Objective(s):	B3a: Enhance radiation controls by initiating or updating guidance documents or regulations to reflect current science and policy or address gaps in the current radiation protection
Owner:	RPD IO; Sara DeCair is the project manager for this action.
Action Plan Objective/ Approach:	
Deliverables:	**Protective Action Guide Manual** – Draft drinking water PAG; FR Notice for public comment on proposed drinking water PAG; FR Notice of Availability for final PAG Manual
Due Date: March, 2016	**Total Costs:** ~ $60,000

(Action steps: verb-object. Due: no more than 1-2 months between actions)

	Action Step	Who	Planned Date	Revised Date	Completion Date
1.	**Provide Joint AA-level briefing on DW PAG**	Sara, OW	11/2014		11/5/2014
2.	**Provide brief to DA on DW PAG**	OAR, OW	11/2014		11/22/2014
3.	Brief multi-agency PAGs subcommittee on DW PAG, get concurrence	Sara, OW	1/2015		1/22/2015
4.	Complete Desk Statement, Key Messages, Action Memo for FR pkg, messaging internally & externally	Jerry, CRIO		4/2015	5/22/2015
5.	Complete DW PAG proposal review by OSWER, OHS, OGC; brief as necessary	Sara, OW	1/2015	6/2015	
6.	**Complete OW AA and OGC review and concurrence on DW PAG proposal and support documents**	OW, Sara	3/2015	6/2015	
7.	Joint briefing by ORIA & OGWDW ODs to OSWER ODs	OW, Sara	6/2015		
8.	Finalize DW PAG proposal FR Notice package	Sara, OW	4/2015	7/2015	
9.	**Complete OPEI review and facilitation**	Sara, OW	5/2015	8/2015	

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10.	Begin OMB 90-day review, make edits per OMB input	Sara	6/2015	9/2015	
11.	**Clear OMB inter-agency review**	Sara	9/2015	12/2015	
12.	Finalize FR Notice and DW PAG proposal; publish DW PAG FR	Sara	10/2015	1/2016	
13.	During this time, complete OMB review process for the rest of the PAG Manual (we hope)	Sara		3/2016	
14.	Complete public comment period for DW PAG proposal	Sara	12/2015	3/2016	
15.	Adjudicate public comments on DW PAG proposal	Sara, OW	1/2016	5/2016	
16.	Final internal and OMB review of Water PAG within full PAG Manual	Sara		5/2016	
17.	**Final PAG Manual, Key Messages & Desk Statement for FR package**	Sara, OW, CRIO		5/2016	
18.	Issue FR Notice of final PAG Manual, including DW PAG, signed by Administrator	Sara	3/2016	6/2016	

Quarterly Progress Update	
Q 1	5/12/2015: Tightened up OPEI-OMB-FR steps based on experience with previous full PAG Manual publication. Assumes strong ORIA leadership for these steps.
Q 2	
Q 3	
Q 4	

Note: **Bold action steps** involve direct management check-in.

RPD staff involved: Sara DeCair is the project manager (and responsible for the status of all action plan steps), her efforts will be supported directly by RPD communications staff and her management chain.

Contract dollars support DW PAG comment compilation, and final document editing and formatting.

ED_001057_00012834

To: Mosser, Jennifer[Mosser.Jennifer@epa.gov]
From: DeCair, Sara
Sent: Fri 5/8/2015 8:41:51 PM
Subject: FW: Discontinuation of RadNet Field Screening Measurements

I think I'd better call in to the General since Lee has handed us 400 things to talk about – I'm leaving print copies on your chair of this field screen thing, my initial hotwash from VR, and the latest on PAGs from Alan (so he doesn't need a reminder, but maybe wants to chit chat and make sure Jon is up to date).

Can you just dial me on my cell (202-738-2871) once you're in Jon's office since I couldn't get in there today to see what the Polycomm number is?

S.

From: Veal, Lee
Sent: Friday, May 08, 2015 3:33 PM
To: DeCair, Sara; Mosser, Jennifer
Subject: Discontinuation of RadNet Field Screening Measurements

Sara and Jen,

I completely agree with the idea of discontinuing the in-field screening of RadNet filters. The system we are able to support nowadays allows us to take this step.

I spoke briefly with Scott Telofski this afternoon, and he tells me that John Griggs would like to make sure that Jon E and I are on board with this change before making it final.

Could you please share this with Jon on Monday at our general? I've attached a revised agenda for you.

Lee Ann B. Veal

Director, Center for Radiological Emergency Management

Radiation Protection Division

Office of Radiation and Indoor Air

Office: 202-343-9448

Cell: 202-617-4322

www.epa.gov/radiation

From: Telofski, Scott
Sent: Monday, March 23, 2015 1:26 PM
To: Veal, Lee
Cc: Griggs, John; Askren, Daniel R.
Subject: Discontinuation of RadNet Field Screening Measurements

Lee,

You may recall that at the February ICRU meeting we briefly discussed concerns about field screening of RadNet air filters and our desire to discontinue these field measurements. Dan and I developed some slides that go over the details of the concerns (attached to this e-mail), and John has asked that we send them to you, so that perhaps you and Jon Edwards can take a look at these slides. If that seems reasonable, then we'd like to schedule time to get your input once you've had an opportunity to look these over.

Thanks,

Scott

To: Perrin, Alan[Perrin.Alan@epa.gov]; Edwards, Jonathan[Edwards.Jonathan@epa.gov]; Lee Veal[Veal.Lee@epa.gov]
From: DeCair, Sara
Sent: Wed 5/6/2015 2:56:18 PM
Subject: PAG proposal at OGC -- update

FYI I just spoke with Sue and she is in, but this week is toast due to court-ordered deadlines. She can get to the PAG proposal next week. She said she did get an odd message from Paul Bangser (works for Carrie Wehling in WLO) that he hadn't heard of or about the Water PAG proposal. That worried her, so she said she would call Carrie and I called Lisa Christ.

Lisa confirmed that Paul Bangser is their WLO contact, and that he's had the proposal for about 3 weeks now. He just asked for more time, and Sam is checking whether that could be as soon as next week.

I don't think this should slow our plan to brief the ODs, though, since we don't anticipate large legal or policy issues, and if we do run into some, we can certainly circle back as needed.

Thanks,

Sara

From: Stahle, Susan
Sent: Wednesday, April 01, 2015 1:45 PM
To: DeCair, Sara
Subject: RE: Heads up: New PAG proposal for OGC review soon

Hi Sara –

I did not see you at the Part 192 hearing or I would have come over to say hello! Just so you know I was not ignoring you. What an entertaining hearing it was….

Thanks for the heads up. I'll take a look when you send it my way. I'll note that I have an April 20 and two May 8 court-ordered deadlines, and I will be out of the office April 30-May 4, so I may not be able to get it back to you right away. But like you said, given that it is a very technical document, and that this is an area of the PAG Manual in which my OGC/WLO colleagues have been involved, I'll likely have less to offer. But I'd never pass up the opportunity to read a PAG Manual! ☺

Thanks,

Susan Stahle

Attorney-Advisor

Air and Radiation Law Office

Office of General Counsel

U.S. Environmental Protection Agency

202-564-1272 (ph)

202-564-5603 (fax)

stahle.susan@epa.gov

From: DeCair, Sara
Sent: Wednesday, April 01, 2015 8:34 AM
To: Stahle, Susan
Cc: Christ, Lisa; Hernandez-Quinones, Samuel; Ellis, Jerry; Veal, Lee
Subject: Heads up: New PAG proposal for OGC review soon

Sue,

I spotted you across the room at the 192 hearing recently – it has been a while since we've talked

about PAGs, though! Just giving you a bit of warning that we have a new proposal, a drinking water PAG (so a subset of the full PAG Manual) that we will be submitting to you and your Water counterparts for review prior to Office of Policy submission. We hope that this proposal fills a gap highlighted in public comments on the 2013 revision, and once we get public input then we hope to drop it into a complete final PAG Manual in 2016.

The proposal is fairly technical, as PAGs usually are, and has a discussion of interaction with our standing water regulations as well. Lisa, Sam and Jerry in OGWDW have crafted this proposal with our input and will be submitting it at the same time to Carrie Wehling's team. We are thinking the approximately 20-page proposal will be in your hands during the week of April 13th. Since both you and Water's OGC had previously reviewed the full PAG Manual prior to issuance in 2013 (it had water regulations discussion in it) I am thinking you won't necessarily need a briefing on PAGs and the approach, but you may of course ask us for one anytime!

In the meantime while you are reviewing the proposal, we'll be helping our respective ODs brief key partners in OHS, OEM, OECA and any others who might be interested. Those plans are not yet locked in, so any process suggestions you have are appreciated. We're also keeping in touch with OP for their ideas.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Shogren, Angela[Shogren.Angela@epa.gov]
From: DeCair, Sara
Sent: Mon 5/4/2015 3:54:26 PM
Subject: Re: OCHP Briefing

This might do for a lead "What is a PAG" slide:

Protective Action Guides (PAGs) suggest precautions that state and local authorities can take during an emergency to keep people from receiving an amount of radiation that might be dangerous to their health. EPA developed the PAG Manual to provide guidance on actions to protect the public, such as having people evacuate an area or stay indoors.

From: Shogren, Angela
Sent: Monday, May 4, 2015 10:28 AM
To: DeCair, Sara
Subject: RE: OCHP Briefing

Sorry to be dense…Where is the PAGs and "What is a PAG?" slide from the website?

I have the KI table slide and the drinking water and food slide in there still, just not sure what the other (overview/general) slide content is supposed to be.

Angela Shogren | Public Affairs Specialist | U.S. Environmental Protection Agency | Tel 202 343 9761 | shogren.angela@epa.gov

From: DeCair, Sara
Sent: Friday, May 01, 2015 11:05 AM
To: Shogren, Angela
Subject: Re: OCHP Briefing

Angela

Let's keep only these slides:

PAGs and put what is a PAG (from website) instead of Q at hand

KI table

And

Drinking water and food

Thanks!

Sent from my iPhone

On Apr 29, 2015, at 1:18 PM, Shogren, Angela <Shogren.Angela@epa.gov> wrote:

Hi Sara,

We met today to review the OCHP briefing slides and I think that we'd like to try to limit the PAGs portion to 3-4 slides (right now we have 10). Mike was thinking that perhaps focusing on a high level "What are the PAGs?" overview, with a few children's thyroid and KI slides thrown in (maybe mention drinking water?) might do the trick.

I don't want to presume to know what is most important, so I was hoping that you could trim the attached to include 3-4 PAGs slides?

Let me know your thoughts. We have a pre-brief on Wednesday of next week (3 pm) with Alan and Jon, will be you in the office (and can you get me edits before then?)?

Thanks, and enjoy your time in wine country ☺

Angela Shogren | Public Affairs Specialist | U.S. Environmental Protection Agency | Tel 202 343 9761 | shogren.angela@epa.gov

<RPD Briefing to OCHP_May 2015.ppt>

To: Shogren, Angela[Shogren.Angela@epa.gov]
From: DeCair, Sara
Sent: Fri 5/1/2015 3:05:19 PM
Subject: Re: OCHP Briefing

Angela
Let's keep only these slides:

PAGs and put what is a PAG (from website) instead of Q at hand

KI table

And

Drinking water and food

Thanks!

Sent from my iPhone

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Thanks, and enjoy your time in wine country ☺

Angela Shogren | Public Affairs Specialist | U.S. Environmental Protection Agency | Tel 202 343 9761 | shogren.angela@epa.gov

<RPD Briefing to OCHP_May 2015.ppt>

Cc: Wieder, Jessica[Wieder.Jessica@epa.gov]; White, Rick[White.Rick@epa.gov]
To: Nesky, Anthony[Nesky.Tony@epa.gov]
From: DeCair, Sara
Sent: Mon 4/27/2015 5:53:29 PM
Subject: Re: Comments on PAG Comm Materials

Noooooo -- "it depends" is my answer. Take that!

:)

Talk to you all later, I'm giving up and going to the conference for a bit.

From: Nesky, Anthony
Sent: Monday, April 27, 2015 1:50 PM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: RE: Comments on PAG Comm Materials

Oh, and I forgot. You can thank me later. ;)

Tony Nesky

Center for Radiation Information and Outreach

Tel: 202-343-9597

nesky.tony@epa.gov

From: Nesky, Anthony
Sent: Monday, April 27, 2015 1:49 PM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: RE: Comments on PAG Comm Materials

Let me rephrase the question: Why is OK to drink water that will give me 450 mrem a year, or give my infant child 75 mrem a year.

Tony Nesky

Center for Radiation Information and Outreach

Tel: 202-343-9597

nesky.tony@epa.gov

From: DeCair, Sara
Sent: Monday, April 27, 2015 12:54 PM
To: Nesky, Anthony
Cc: Wieder, Jessica; White, Rick
Subject: Re: Comments on PAG Comm Materials

Tony,

I just got to that part in my review of the proposal itself, and thought I would share what it says below. I am making a markup of the proposal and will share it in the next few hours so Alan and Lee can review before it goes back over to OW. Jess and Jerry just talked about the Comms materials, too.

S.

The DRLs provided in Table 1 were derived by calculating age-specific DRLs (as described in section 7.2) for six different ages (Infant, 1, 5, 10, 15, and adults). For the most sensitive age groups (children age 15 and younger), the most protective/lowest radioactivity result was selected as the DRL. The calculated values differ across individual life-stages because each age group has a different dose conversion factor and drinking water ingestion rate. In the 15-and-younger category, the most limiting concentration for I-131 is for the 5 year old and the most limiting concentrations for Sr-90/Y-90 and Cs-137 are for the 15 year old.

From: Nesky, Anthony
Sent: Monday, April 27, 2015 10:10 AM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: RE: Comments on PAG Comm Materials

I thought of another question, unfortunately. Can we say anything about why we picked 500 mrem/100 mrem as the PAG? Perhaps something like" EPA risk analysis showed that the additional risk below 500 mrem general /100 mrem sensitive population was not sufficient to trigger public safety measures…

Tony Nesky

Center for Radiation Information and Outreach

Tel: 202-343-9597

nesky.tony@epa.gov

From: Nesky, Anthony
Sent: Friday, April 24, 2015 6:16 PM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: Comments on PAG Comm Materials

A few comments are attached. Unfortunately, I too have some questions without answers….

Tony Nesky

Center for Radiation Information and Outreach

Tel: 202-343-9597

nesky.tony@epa.gov

From: DeCair, Sara
Sent: Thursday, April 16, 2015 3:58 PM
To: Nesky, Anthony; Wieder, Jessica
Cc: Ellis, Jerry
Subject: PAGs Comms materials included here

Tony,

Great news, OW provided their Comms Plan draft and internal Q's and A's (more Q's than A's, they admit) for us to start working on. I know while Jessica is out, you might need to get eyes on this or maybe it's okay to wait til she's back. The next big milestone is April 30 when OGC comments may be in. (So maybe that first full week in May is when we should be very happy with the Comms parts of the Water PAG FR package.)

Jerry mentioned that he didn't put in any sort of radiation dose comparisons to daily activities or say, xrays, like he has heard some managers request, but Jessica did explain that those generally don't work well with the public. If you have comments on the Comms or internal Q&As, attached, or want to talk them over, please include Jerry Ellis (copied here) and me so we can move the conversation forward as quickly as possible. I would love to meet on these early next week if you can swing that.

Thank you!

Sara

From: Christ, Lisa
Sent: Thursday, April 16, 2015 3:12 PM
To: DeCair, Sara
Cc: Veal, Lee; Perrin, Alan; Hernandez-Quinones, Samuel; Ellis, Jerry; Burneson, Eric
Subject: RE: PAGs project plan check-in

Hi Sara –

Thanks for providing a revised schedule. I think we may be able to move things a little quicker (hopefully) than you've laid out. We'll do better keeping to this schedule!

Attached are several documents related to the PAG and schedule.

1. Updated PAG proposal chapter (based on PAG subcommittee comments)

2. Comments on the Action Memo

3. Draft OW communication plan

4. Comments on the FRN (note: as of this week there's a new FRN template)

5. Very draft internal Q&As

6. Feedback on the schedule

We intend to send the updated chapter to our OGC reviewer today and request comments by April 30.

Do you need our help coordinating OSWER and/or OHS review?

Thank you for your patience –

Lisa

From: DeCair, Sara
Sent: Monday, April 13, 2015 3:43 PM
To: Christ, Lisa
Cc: Veal, Lee; Perrin, Alan
Subject: PAGs project plan check-in

Lisa,

Lisa,

Lee and I were talking about getting your feeling on the dates for our next several steps on the drinking water PAG proposal. I know Sam's busy with the proposal edits right now, but maybe you can see if you think the months listed in the attached two page plan are achievable, given some unpredictability noted at the bottom.

When I talked with Jerry last week about Comms materials, we thought our ODs are a good audience for internal Qs and As and the messaging, since they want to feel knowledgable and of course get to guide our next steps forward.

I'll be in my office Tuesday through Thursday this week and Lee will be traveling but available if we need to get on a call together. Thank you for any input you have on the timeline!

Sara 202-343-9108

Cc: Wieder, Jessica[Wieder.Jessica@epa.gov]; White, Rick[White.Rick@epa.gov]
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Sent: Monday, April 27, 2015 10:10 AM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: RE: Comments on PAG Comm Materials

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Tony Nesky

Center for Radiation Information and Outreach

Tel: 202-343-9597

nesky.tony@epa.gov

From: Nesky, Anthony
Sent: Friday, April 24, 2015 6:16 PM
To: DeCair, Sara
Cc: Wieder, Jessica; White, Rick
Subject: Comments on PAG Comm Materials

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Lisa

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Cc: Veal, Lee; Perrin, Alan
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Sara 202-343-9108

To: Brown, Rayna[brown.rayna@epa.gov]; Miller, Beth[Miller.Beth@epa.gov]
From: DeCair, Sara
Sent: Thur 4/23/2015 8:55:58 PM
Subject: Action: Option early? GS00F0017Y_EPG13H00516_3_ORIA
Exercise Option III Early 3-24-2015.docx

Rayna,

I hope the EAS upgrade and outage went smoothly, and that you are well. I am hoping to exercise this contract option early, per the attached memo. Please email or call my cell with any questions or further information needs. I will be on travel. Many thanks for your prompt attention!

Sara

Cell 202-738-2871

From: DeCair, Sara
Sent: Tuesday, March 24, 2015 4:48 PM
To: Brown, Rayna; Miller, Beth
Subject: Option early? GS00F0017Y_EPG13H00516_3_ORIA

Good afternoon Rayna,

I looked back at my files and copy of the contract and think it is time to exercise Option Period III. It has a ceiling of $28,783.00 which our office is ready to fund. I've attached a rough draft of a memo justifying the early timing, for your feedback. Thank you for helping me get the right information in place to take this action promptly!

I'm at an offsite meeting for the next two days, but I should have good email access and can get back to you if you need anything from me. Beth is also a great resource (copied here) since she handles our finances. Thanks again,

Sara

Cell 202-738-2871

From: Brown, Rayna
Sent: Friday, March 20, 2015 8:45 AM
To: DeCair, Sara; Miller, Beth
Subject: RE: Question re: TO_GS00F0017Y_EPG13H00516_3_ORIA

Good morning Sara,

I'm on leave today so I will answer quickly and then we can have a longer more comprehensive discussion when I return to the office on Tuesday, March 24.

My understanding and research is that each option periods capacity (dollar ceiling and/or level of effort hours) are exclusive to that ordering/option period and cannot carry over or be used in the subsequent option period. I believe this is also referred to as accelerating the period. This is restructuring and changing the terms and conditions and the way the option was synopsized, competed and awarded. Therefore, this is would be considered a procurement action subject to the Competition in Contracting Act (CICA), subject to protest based on an out of scope change, and requires being handled under the appropriate authority or procurement procedures (e.g. sole source, competition). Think of each option period as a contract.

Let me know your thoughts and I can certainly double check with our Office of General Counsel (OGC)/legal to make sure I have the right interruption. I'll await to hear back from you and we can figure out how to move forward.

Thanks for the opportunity to clarify and provide some contractual guidance on this matter.
Have a great weekend! :o)

Kind regards,

Rayna D. Brown

Team Leader, Contracting Officer

U.S. Environmental Protection Agency (U.S. EPA)

OARM/OAM/HPOD/ACSC

(202) 564.6025 Office

From: DeCair, Sara
Sent: Thursday, March 19, 2015 6:10 PM
To: Brown, Rayna; Miller, Beth
Subject: Question re: TO_GS00F0017Y_EPG13H00516_3_ORIA

Rayna,

I'm hoping you can help me out with what to do about needing additional funding on this contract. We knew this work would move in an unpredictable pace, since it is dependent on interagency consensus which sometimes takes a LONG time and then moves very quickly!

We are now moving quickly and our office does have funds to add on to continue work, but I think my only choice is to exercise an option period early since there are ceilings for each period?

If that is so, please advise what type of justification and other paperwork I can provide you. I believe an email memo is what I've done before, with the amounts remaining and what we would like to put on exercising an early option period.

Thank you so much,

Sara

cell 202-738-2871

From: Brown, Rayna
Sent: Friday, December 19, 2014 8:14 AM
To: RTPReceiving; siddhanti@endyna.com; dmurray@endyna.com; DeCair, Sara
Cc: Brown, Rayna
Subject: TO_GS00F0017Y_EPG13H00516_3_ORIA

Vendor: Endyna Inc

Task Order No.: EP-G13H-00516

GSA Contract No.: GS-00F-0017Y (expires March 4, 2017)

Task Order Modification No.: 003
Project Title: Revision of the 1992 Protective Action Guides (PAGs) Manual

Subject: Task Order Modification No. 003

Please find attached modification no. 003 to GSA task **order no.** EP-G13H-00516 to the above referenced GSA vendor. RTP, please be advised that all pages of this modification is contained in both attachments herein. The Vendor is requested to acknowledge receipt of this modification via email (please do not include RTPReceiving) within 3 business days. Please let me know if you have any questions. Thank you and have a wonderful day! :o)

Kind regards,

Rayna D. Brown

Team Leader, Contracting Officer

U.S. Environmental Protection Agency (U.S. EPA)

OARM/OAM/HPOD/ACSC

(202) 564.6025 Office

To: Nesky, Anthony[Nesky.Tony@epa.gov]
From: DeCair, Sara
Sent: Mon 4/20/2015 2:16:59 AM
Subject: Re: PAGs Comms materials included here

That is such a great question.

Sent from my iPhone

On Apr 19, 2015, at 8:18 PM, Nesky, Anthony <Nesky.Tony@epa.gov> wrote:

Who is lead on the water PAGs? OW or us?

From: DeCair, Sara
Sent: Thursday, April 16, 2015 3:57 PM
To: Nesky, Anthony; Wieder, Jessica
Cc: Ellis, Jerry
Subject: PAGs Comms materials included here

Tony,

Great news, OW provided their Comms Plan draft and internal Q's and A's (more Q's than A's, they admit) for us to start working on. I know while Jessica is out, you might need to get eyes on this or maybe it's okay to wait til she's back. The next big milestone is April 30 when OGC comments may be in. (So maybe that first full week in May is when we should be very happy with the Comms parts of the Water PAG FR package.)

Jerry mentioned that he didn't put in any sort of radiation dose comparisons to daily activities or say, xrays, like he has heard some managers request, but Jessica did explain that those generally don't work well with the public. If you have comments on the Comms or internal Q&As, attached, or want to talk them over, please include Jerry Ellis (copied here) and me so we can move the conversation forward as quickly as possible. I would love to meet on these early next week if you can swing that.

Thank you!

Sara

From: Christ, Lisa
Sent: Thursday, April 16, 2015 3:12 PM
To: DeCair, Sara
Cc: Veal, Lee; Perrin, Alan; Hernandez-Quinones, Samuel; Ellis, Jerry; Burneson, Eric
Subject: RE: PAGs project plan check-in

Hi Sara –

Thanks for providing a revised schedule. I think we may be able to move things a little quicker (hopefully) than you've laid out. We'll do better keeping to this schedule!

Attached are several documents related to the PAG and schedule.

1. Updated PAG proposal chapter (based on PAG subcommittee comments)

2. Comments on the Action Memo

3. Draft OW communication plan

4. Comments on the FRN (note: as of this week there's a new FRN template)

5. Very draft internal Q&As

6. Feedback on the schedule

We intend to send the updated chapter to our OGC reviewer today and request comments by April 30.

Do you need our help coordinating OSWER and/or OHS review?

Thank you for your patience –

Lisa

From: DeCair, Sara
Sent: Monday, April 13, 2015 3:43 PM
To: Christ, Lisa
Cc: Veal, Lee; Perrin, Alan

Subject: PAGs project plan check-in

Lisa,

Lisa,

Lee and I were talking about getting your feeling on the dates for our next several steps on the drinking water PAG proposal. I know Sam's busy with the proposal edits right now, but maybe you can see if you think the months listed in the attached two page plan are achievable, given some unpredictability noted at the bottom.

When I talked with Jerry last week about Comms materials, we thought our ODs are a good audience for internal Qs and As and the messaging, since they want to feel knowledgable and of course get to guide our next steps forward.

I'll be in my office Tuesday through Thursday this week and Lee will be traveling but available if we need to get on a call together. Thank you for any input you have on the timeline!

Sara 202-343-9108

To: Ex. 6 - Personal Privacy @gmail.com[Ex. 6 - Personal Privacy @gmail.com]
From: DeCair, Sara
Sent: Sat 4/18/2015 3:29:58 PM
Subject: Fwd: PAGs project plan check-in
Revised Version 4-16- Draft Chapter Drinking Water PAG V1_SHQ.docx
ATT00001.htm
PAG Draft Action Memo Water 4-16-15.docx
ATT00002.htm
V 2 DRAFT Drinking Water PAG Communications Plan_4-16-15.doc
ATT00003.htm
Water PAG FR Notice draft 4-6-2015_OW.docx
ATT00004.htm
Internal QandAs Drinking Water PAG 4-16-15.docx
ATT00005.htm
RP_AP-BR1-8_PAG-Manual_(DeCair)v2_ow.docx
ATT00006.htm

Sent from my iPhone

Begin forwarded message:

From: "Christ, Lisa" <Christ.Lisa@epa.gov>
Date: April 16, 2015 at 3:12:08 PM EDT
To: "DeCair, Sara" <DeCair.Sara@epa.gov>
Cc: "Veal, Lee" <Veal.Lee@epa.gov>, "Perrin, Alan" <Perrin.Alan@epa.gov>, "Hernandez-Quinones, Samuel" <Hernandez.Samuel@epa.gov>, "Ellis, Jerry" <Ellis.Jerry@epa.gov>, "Burneson, Eric" <Burneson.Eric@epa.gov>
Subject: RE: PAGs project plan check-in

Hi Sara –

Thanks for providing a revised schedule. I think we may be able to move things a little quicker (hopefully) than you've laid out. We'll do better keeping to this schedule!

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From: DeCair, Sara
Sent: Monday, April 13, 2015 3:43 PM
To: Christ, Lisa
Cc: Veal, Lee; Perrin, Alan
Subject: PAGs project plan check-in

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I'll be in my office Tuesday through Thursday this week and Lee will be traveling but available if we need to get on a call together. Thank you for any input you have on the timeline!

Sara Ex. 6 - Personal Privacy

To: Littleton, Brian[Littleton.Brian@epa.gov]
From: DeCair, Sara
Sent: Thur 4/16/2015 12:47:51 PM
Subject: New Rev 3
Listening Session Meeting Prep 4-15-2015 rev 3.docx

Brian,

I think I have added enough on PAGs and if you want to see what Alan thinks, that would be great once you're happy with your parts of it. I think he might encourage tightening up the who they are section, maybe getting their affiliations out of there since all that was in the invitation.

I welcome any input you have on the bullets I've provided! I'm in meetings from 10 to 11:30 this morning –

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Ex. 6 - Personal Privacy
Cc: Schultheisz, Daniel[Schultheisz.Daniel@epa.gov]
From: DeCair, Sara
Sent: Fri 4/3/2015 3:35:00 PM
Subject: RE: DEADLINE TODAY (APRIL 3): Power Points & Docs for LLW Forum Meeting Packets
PAGs for LLW Forum 4-3-2015.ppt

Here is a PowerPoint presentation for the Protective Action Guides agenda item with Dan Schultheisz and I as speakers. Thank you,

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

From: Ex. 6 - Personal Privacy
Sent: Friday, April 03, 2015 11:06 AM
To: llwforuminc@aol.com
Subject: DEADLINE TODAY (APRIL 3): Power Points & Docs for LLW Forum Meeting Packets

To: Speakers for the Low-Level Radioactive Waste Forum's Spring 2015 Meeting

From: Todd D. Lovinger, Executive Director

Low-Level Radioactive Waste Forum, Inc.

Date: April 3, 2015

Re: DUETODAY(FRIDAY- APRIL 3):Power-Point Presentations & Other Documents

for Spring 2015 LLW Forum Meeting in Alexandria, Virginia on April 20-21, 2015

To date, we have not received a power point for your presentation at the upcoming Low-Level Radioactive Waste Forum (LLW Forum) meeting that will be held in Alexandria, Virginia on April 20–21, 2015.

As a reminder, the deadline for submitting power point presentations and additional meeting packet documents is the close of business today -- Friday (April 3, 2015).

Please plan accordingly and be sure to timely submit your presentations and other meeting packet documents as we will not be able to print any documents that are submitted after today's deadline.

Below you will find some important information and deadlines in order to allow us to copy documents, prepare and assemble meeting packets, and download and organize power-point presentations.

Please take a moment to review this memo and timely submit the requested items.

Power-Point Presentations:

Meeting packets will be prepared ten days prior to the meeting and distributed at the meeting registration desk.

If you plan to use a power-point presentation, we ask that you submit your presentation ***by the close of business today (Friday, April 3)*** in order to give us time to download and organize them. (Presentations finalized after this date will not be copied for inclusion in the meeting packets. However, they should still be e-mailed to this address and we will download them as quickly as possible.)

In addition, please bring a copy of your power-point presentation on a flash drive or CD as a backup in case there are technical issues.

Additional Documents for Meeting Packets:

Some speakers submit additional documents for inclusion in the meeting packets in order to provide attendees the opportunity to learn more about their topic and/or for reference purposes.

In order to provide us time to copy documents and put together the packets, we ask that you submit any such additional documents for inclusion in the meeting packets ***no later than close of business today (Friday, April 3)***.

Late Documents:

Please note that, due to budgetary constraints, it is the LLW Forum's policy not to copy documents at the meeting facility as the hotels often charge high rates and this can get very expensive. Therefore, if you have documents which you wish to distribute or a power point presentation but cannot make the above deadline, you will need to bring your own copies with you to the meeting. In such case, please bring 100 copies so that all meeting attendees may receive them.

Format for Submission of Documents:

If possible, we prefer that documents be submitted electronically to this e-mail address. However, if the document is not available electronically, it may be faxed to me at (754) 223-7452 or mailed to the following address:

Todd D. Lovinger, Esq.

Executive Director

LLW Forum, Inc.

2657 Bayview Drive

Ft. Lauderdale, FL 33306

If you mail or fax a document, please send an email stating that you are doing so in order that we will know to look out for the document.

Biographies:

If you have a short biography available, please send it to me via e-mail, fax or regular mail service for use in introducing you at the meeting.

Other Information:

A copy of the updated agenda for the meeting is attached, for your information. A link to the meeting agenda is also available at www.llwforum.org on the Home Page.

If you have questions or require additional information, please let me know. I can be reached via e-mail or at (754) 779-7551/office or Ex. 6 - Personal Privacy /cell.

I look forward to seeing everyone at the meeting.

Thank you.

2013 PAG Manual Revision

Focus on Changes from the 1992 Manual

Sara DeCair, US EPA

April 2015

ED_001057_00012920

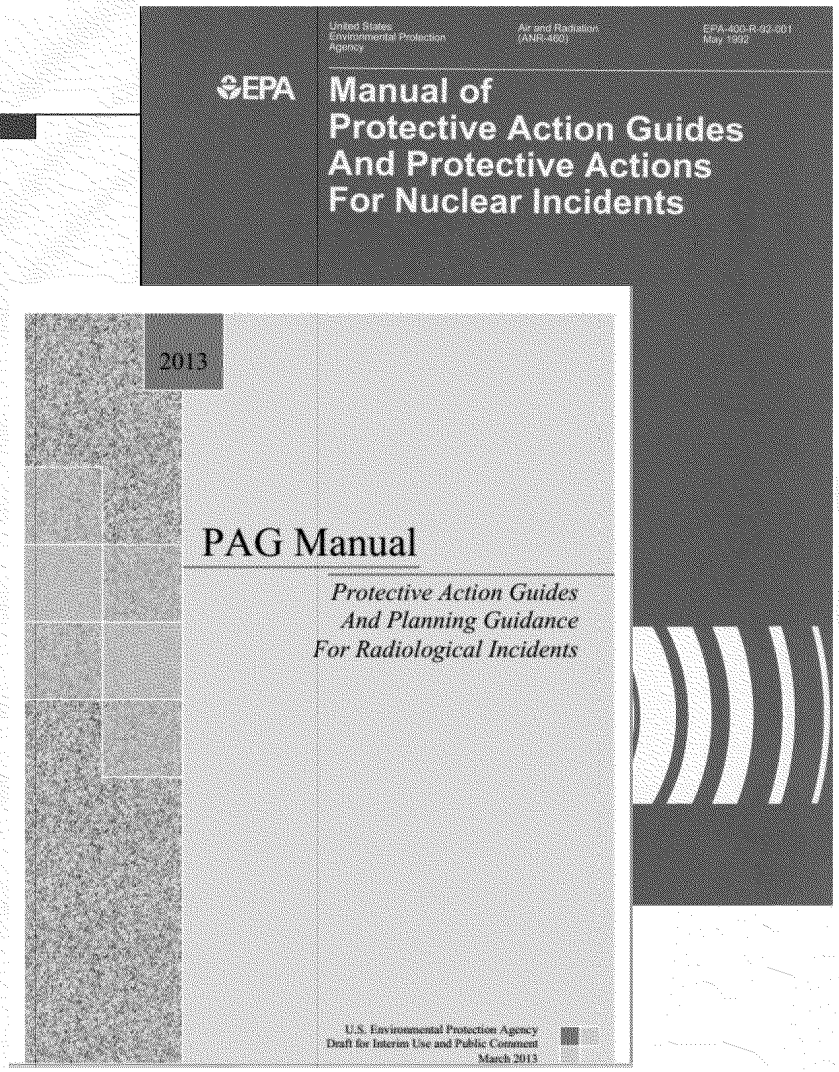
Topics to Cover

- Compare 2013 & 1992 Manuals
  - ✓ FRMAC methods for DRLs
  - ✓ Early Phase, Worker guides, KI
  - ✓ Intermediate Phase, Reentry
  - ✓ Water, Food
  - ✓ Late Phase recovery
- Process & timeline
  - ✓ When will the final PAG Manual be out?

ED_001057_00012920

PAG Manual

- 1992 PAG Manual is still good, still in use
- Early, Intermediate Phases only; promised Water and Late Phase (Recovery) PAGs
- 2013 revision issued for comment and interim use



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2013 Draft PAG Manual

- Clarifies the use of PAGs for all radiological incidents, including terrorism
- Lowers projected thyroid dose for KI, via FDA
- Requests input on drinking water guidance
- Refers to 1998 FDA food guidance
- Includes guidance for cleanup & waste disposal
- Updates dosimetry from ICRP 26 to ICRP 60, by referring to FRMAC methods

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Updated dosimetry

- Updating to ICRP 60 series
  - ✓ Age-specific dose conversions
- Setting PAGs levels

  versus
- Implementing PAG recommendations
  - ✓ Protective actions apply to whole communities
  - ✓ Conservatism built in
  - ✓ Don’t avoid less dose than intended

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FRMAC Methods by reference

- PAG Manual users are referred to FRMAC Assessment Manuals for calculations using up-to-date dosimetry.
  - ✓ Lookup tables of DCFs and DRLs not in PAG Manual
  - ✓ Updated more frequently
- Training on FRMAC methods ongoing

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Early Phase

1992	2013
➢ Evacuation/Shelter 1-5 rem (10-50 mSv) ✓ thyroid/skin 5, 50 x higher	➢ Evacuation/Shelter 1-5 rem (10-50 mSv) ✓ (no organ dose specified)
➢ KI 25 rem (250 mSv) thyroid dose (adult)	➢ KI threshold 5 rem (50 mSv) thyroid dose (child)
➢ Worker 5, 10, 25+ rem (50, 100, 250+ mSv)	➢ Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

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Potassium Iodide (KI) Actions

- FDA recommends a multi-pronged approach:

Threshold Thyroid Radioactive Exposures and Recommended Doses of KI for Different Risk Groups				
	Predicted Thyroid exposure(cGy)	KI dose (mg)	# of 130 mg tablets	# of 65 mg tablets
Adults over 40 yrs	≥500	130	1	2
Adults over 18 through 40 yrs	≥10			
Pregnant or lactating women	≥ 5			
Adoles. over 12 through 18 yrs*				
Children over 3 through 12 yrs		65	1/2	1
Over 1 month through 3 years		32	1/4	1/2
Birth through 1 month		16	1/8	1/4

- A simplified approach:
  - ✓ Provide KI to public if 5 rem (50 mSv) child thyroid dose projected
  - ✓ This is a supplemental action; evacuation is the primary protection

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Guidance for Emergency Workers

Dose (rem)	Activity	Condition
5	All	None
10	Protecting valuable property	Lower dose not practicable
25	Lifesaving or protection of large populations	Lower dose not practicable

* Greater than 5 rem for lifesaving only to volunteers aware of the risks

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Intermediate Phase

1992	2013
➢ Relocate population ✓ ≥ 2 rem (20 mSv) first year (projected dose) ✓ 0.5 rem (5 mSv) any subsequent year ✓ 5 rem (50 mSv) over 50 yrs ➢ Apply dose reduction techniques ✓ < 2 rem (20 mSv)	➢ Relocate population ✓ ≥ 2 rem (20 mSv) first year (projected dose) ✓ 0.5 rem (5 mSv) any subsequent year ✓ (removed 50-year Relocation PAG) ➢ Apply dose reduction techniques ✓ < 2 rem (20 mSv)

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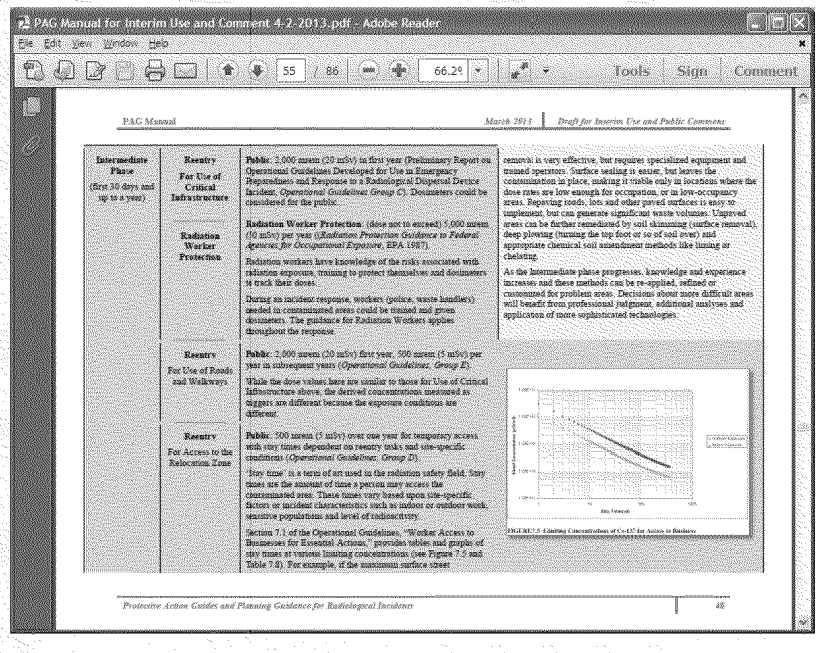
Re-entry Matrix

- New quick reference matrix
- Public, workers re-entering Relocation area to work during cleanup
- Basis: Relocation PAGs
- Assumptions: Detailed exposure scenarios in Operational Guidelines
- Do it yourself: RESRAD-RDD software



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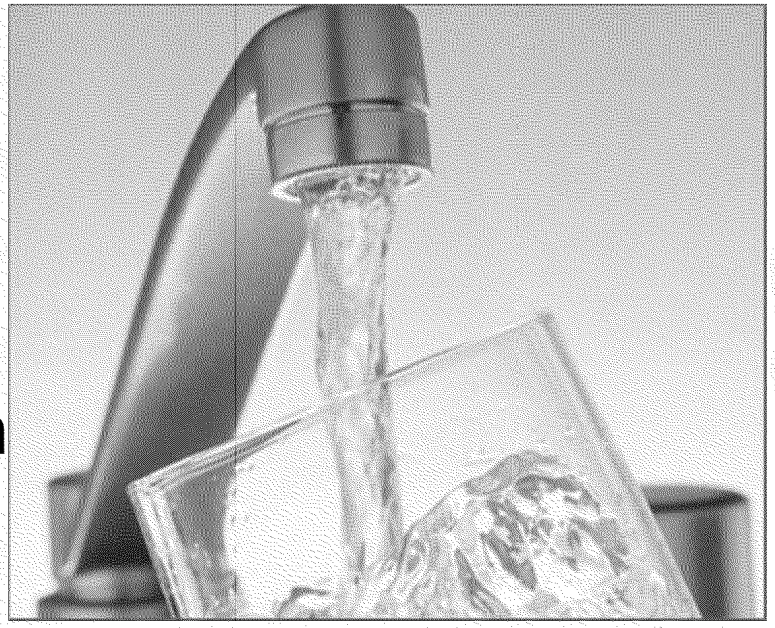
Drinking Water

- National Primary Drinking Water Regulations emergency actions: Increased monitoring & notifications
- Comments requested on whether, and what value, an emergency PAG for water should be considered
- Referred to related guides from WHO, IAEA, DHS, FDA



ED_001057_00012920

FDA Food PAGs

1992	2013
➢ 1982 FDA guidance ➢ NCRP 39 methodology ➢ Preventive PAG 0.5 rem (5 mSv) whole body and 1.5 rem (15 mSv) thyroid ➢ Emergency PAG 10 times higher, depends on impact ➢ Dose only, no activity levels provided	➢ 1998 FDA guide, by reference ➢ ICRP 56 & NRPB methods ➢ One set of PAGs ✓ 0.5 rem (5 mSv) whole body dose or ✓ 5 rem (50 mSv) to most exposed organ or tissue ➢ Dose and derived intervention levels (DILs) provided

ED_001057_00012920

Late Phase: Cleanup Goal

- Customer expectation of cleanup goal = background?
- Prescriptive or flexible
- Time, costs, risks, benefits
- Varied legal authorities and funding sources
  - ✓ Depends on the material
  - ✓ Terrorism or not
  - ✓ More than one authority may apply cooperatively

ED_001057_00012920

Decision-Making Organizations

- Focus on process for reaching consensus:
  - ✓ Decision Team – might be requesting funding
    - Senior local, state and federal officials
  - ✓ Recovery Management Team
    - Senior leadership in the field recovery effort
  - ✓ Stakeholder Working Group
    - Community leaders, local businesses, nongovernmental representatives, members of the public
  - ✓ Technical Working Group
    - Select subject matter experts, communicators

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Playing it out: Liberty RadEx

- Used Cleanup Advisory Forum (CAF) process to prioritize post-emergency phase cleanup and develop long-term cleanup strategy
- Technical Advisory Panel (TAP)
- Community Advisory Panel (CAP)

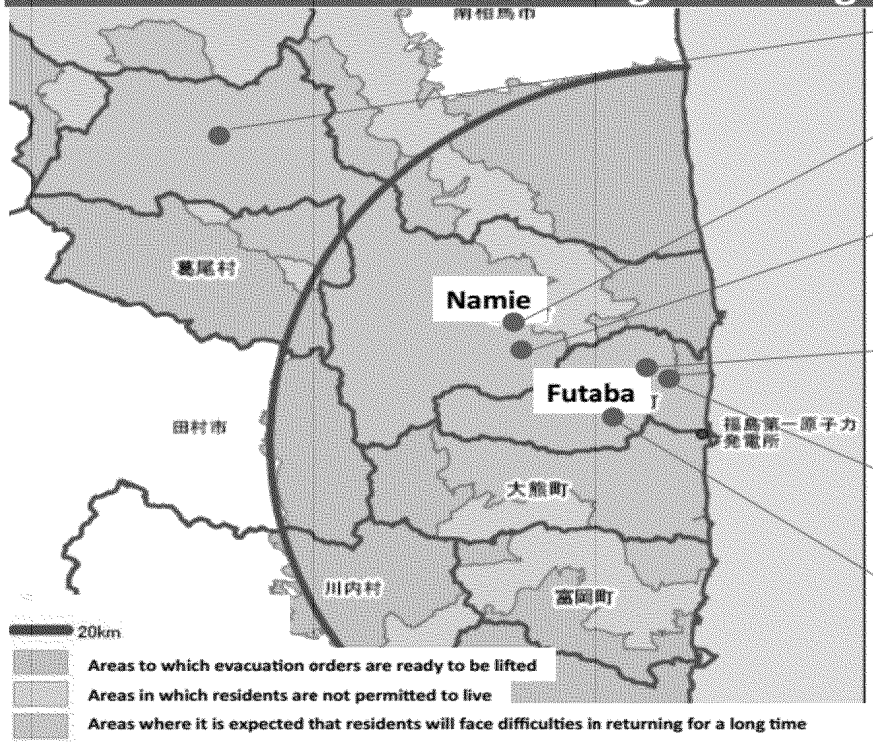
Technical Advisory Panel meeting

ED_001057_00012920

All too real: Japan

josen.env.go.jp/en/documents/pdf/japan_decontamination_efforts_and_its_effects.pdf

The Areas of Decontamination Demonstration Project in the Area where it is Expected that Residents will Face Difficulties in Returning for a Long Time



- Akougi District(approx. 8ha)
  50～75 mSv/year
  Started from Oct. 1st
- Ohori District(approx.7ha)
  75～100 mSv/year
  Started from Oct.7
- Ide District(approx. 12ha)
  Above 100 mSv/year
  Started from Oct.1
- Futaba Kindergarten(approx. 2.5ha)
  50～75 mSv/year
  Started from Oct.28
- Futaba Kosei Hospital (approx. 4.5ha)
  50～75 mSv/year
  Started from Oct.28
- Yamada Farm Square (approx. 1ha)
  Above 100 mSv/year
  Started from Dec.9

※The value of radiation dose is due to measurement data at the time of selecting candidate sites

31

EPA

ED_001057_00012920

Late Phase: Waste Management

- Waste chapter focuses on options for disposal
  - ✓ Licensed LLRW disposal facilities
  - ✓ RCRA solid and hazardous waste landfills
  - ✓ Federal facilities/sites
  - ✓ Newly developed disposal capacity
  - ✓ Appropriate for level of hazard
- States bear primary responsibility
  - ✓ Waste volumes will drive decision-making
    - Could overwhelm existing disposal capacity (see Japan)
    - Need to be considered in early planning

ED_001057_00012920

Process & Timeline

- Adjudicated 5,000 comments
- Adding clarifications, improving readability
- Final PAG Manual
  - ✓ One-year period to incorporate into your plans
- You are a messenger!
- Let us know if you have questions
  - ✓ Sara DeCair: decair.sara@epa.gov 202-343-9108

ED_001057_00012920

The End

Thank you!

ED_001057_00012920

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Thur 3/26/2015 8:10:10 PM
Subject: Re: Uh oh
RP - Action Plan BR1-8 Drinking Water PAG.docx

I added the magic assumption and also a final final review by OMB. Try this version?

It did push the dates out a bit...

From: Perrin, Alan
Sent: Thursday, March 26, 2015 3:35 PM
To: DeCair, Sara
Subject: RE: Uh oh

Getting it to me is fine: Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

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

From: DeCair, Sara
Sent: Thursday, March 26, 2015 11:43 AM
To: Perrin, Alan
Subject: Re: Uh oh

Okay, I checked it over and added some Completion dates and a quarterly update at the bottom. Is just sending it to you sufficient or should I also send to I Mei and Ingrid?

Thank you for your help!

S.
~~~~~~~~~~~~~~

From: Perrin, Alan
Sent: Thursday, March 26, 2015 11:25 AM
To: DeCair, Sara
Subject: RE: Uh oh

I think what Imei (and Ingrid) sent is already in the new template, just check it over (some info was lost in the transition) and add anything needed to respond to Ingrid's notes or Imei's guideline.

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

From: DeCair, Sara
Sent: Thursday, March 26, 2015 11:06 AM
To: Perrin, Alan
Subject: Uh oh

Well, shoot. Ex. 6 - Personal Privacy I just looked back at I Mei's message about mainly editorial type changes to the Action Plan template.

Am I guessing correctly that what you'd like today is for me to drop my existing PAG action plan info into her new template? Just making sure that is needed before I go ahead with it. I'm listening to a very interesting GIS presentation from FDA's guru.

S.

From: Rosencrantz, Ingrid
Sent: Thursday, March 26, 2015 10:56 AM
To: DeCair, Sara
Subject: Automatic reply: action plans

I am out of the office on annual leave until Monday, March 30. Please contact Tom Peake if you need assistance. Thanks.

Cc: Perrin, Alan[Perrin.Alan@epa.gov]
To: Rosencrantz, Ingrid[Rosencrantz.Ingrid@epa.gov]
From: DeCair, Sara
Sent: Thur 3/26/2015 2:56:56 PM
Subject: Re: action plans
Roadmap-PAGs 3-26-2015.doc

Ingrid, I am remiss and Alan was SO MEAN about it! Just kidding, it really isn't right that I need to be reminded with a sledgehammer that this is due, especially since I was asking in staff meetings if this Action Plan work was ever going to happen.

I've attached the PAGs Action Plan. All I updated was that we had our interagency briefing (marked as Completed). I trust you will tell me if there are other changes I'm supposed to make based on input I Mei mentioned in her message?

I'm at an all day meeting today but I have good connectivity so I will get back to you promptly if you need more.

Thanks (and sorry!!)

Sara

From: Rosencrantz, Ingrid
Sent: Thursday, March 12, 2015 12:52 PM
To: DeCair, Sara
Cc: Perrin, Alan
Subject: RE: action plans

Hey there, I know everyone is swamped. I'm checking in on your action plan. Any idea when you can get it revised? It was due COB this past Tuesday. Thanks much!

Ingrid

From: Rosencrantz, Ingrid
Sent: Thursday, February 26, 2015 3:03 PM
To: DeCair, Sara
Cc: Perrin, Alan
Subject: action plans

First, let me thank you in advance for your work on your action plan. We are making progress in developing plans that meet ORIA needs. I'm helping facilitate action plan revision and we have gotten some additional feedback on your action plan and need for you to update it. Generally the plans have already been updated to reflect a revised format. Please take a look at the general guidance below, update your action plan, and email it to me, cc'ing Alan, by COB March 10.

In addition, specific comments that came up during discussion of your plan concerned the following:

Ex. 5 - Deliberative Process

Please add more clarity around these issue if you can. Feel free to contact me with questions. For ease of identifying the action plans, please keep the naming convention of these file names.

Thanks.

FYI - The format of the action plan has changed. The attached Action Plan Template captures and explains these modifications. Specifically:

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ingrid Rosencrantz

Senior Physical Scientist

Radiation Protection Division

Office in Radation and Indoor Air

Office of Air and Radiation

202-343-9286

202-579-5157

To: Veal, Lee[Veal.Lee@epa.gov]; Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Mon 3/23/2015 3:19:29 PM
Subject: Water PAG talkies for Jon/Mike with OEM
Water PAG talkies for Mike 3-23-2015.docx

Lee, Alan,

I just did a little editing in our latest Water PAG briefing that we used for ODs and the PAG Subcommittee so that you have way more than I think is needed for talking points here. (Thinking it is easier to cut than add?)

If I were to suggest a very short set of talking points, I would encourage Jon or Mike to give OEM a heads up that OGWDW is doing this proposal and we'd like their buy in so we can get over to OMB in time to finalize the full Manual in 2016. On a related note, I think they'll be pleased that we didn't need to make any changes in the Late Phase chapter based on public comments, so it's likely those intra-Agency reviews will be very easy.

I'm off this afternoon but can finalize these talking points in the morning when I'm in the office. Just a wild guess, I'm thinking the attachment is far too detailed and maybe you'll ask me to cut it down a lot. Any input on what to keep is appreciated!

S.

To: Shogren, Angela[Shogren.Angela@epa.gov]
From: DeCair, Sara
Sent: Thur 3/19/2015 9:52:53 PM
Subject: The PPT I gave on age groups
NCRP PAGs talk 3-3-2015.pptx

This PPT was to the NCRP, who live and breathe ICRP recommendations, so it doesn't explain all the background, but this is my current project to figure out how, when, and why to use six different age groups for calculations supporting Protective Actions in rad emergencies.

I can talk about it a bit on our call Monday. Have a great weekend!

Sara

To: Jessica Wieder[Wieder.Jessica@epa.gov]; Mike Boyd[Boyd.Mike@epa.gov]; Edwards, Jonathan[Edwards.Jonathan@epa.gov]; Egidi, Philip[Egidi.Philip@epa.gov]; Pawel, David[Pawel.David@epa.gov]
From: DeCair, Sara
Sent: Tue 3/10/2015 9:20:04 PM
Subject: NCRP Meeting weekly item for your review by 4 pm Wed!

NCRP Annual Meeting – On March 16 and 17, 2015, RPD's Jessica Wieder, Phil Egidi and David Pawel (?) will attend the National Council on Radiation Protection and Measurements (NCRP) annual meeting, "Changing Regulations and Radiation Guidance – What Does the Future Hold." Jon Edwards will present on EPA's updates to radiation regulations in a session chaired by Mike Boyd, and Sara DeCair will give a talk on updating the dosimetry basis for implementing the Protective Action Guides.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Veal, Lee[Veal.Lee@epa.gov]
From: DeCair, Sara
Sent: Tue 3/3/2015 7:30:05 PM
Subject: RE: Water PAG proposal: review by Mar. 18th

Ex. 6 - Personal Privacy And I'm doing a tiny water PAG dance :D

From: Veal, Lee
Sent: Tuesday, March 03, 2015 2:18 PM
To: DeCair, Sara
Subject: Re: Water PAG proposal: review by Mar. 18th

You go girl!

Ex. 6 - Personal Privacy

Lee Ann B Veal

Director, Center for Radiological Emergency Management

Office of Radiation and Indoor Air

USEPA

Office 202-343-9448

Cell Ex. 6 - Personal Privacy

On Mar 3, 2015, at 2:16 PM, DeCair, Sara <DeCair.Sara@epa.gov> wrote:

PAGs Subcommittee;

We'd like to share a copy of our draft drinking water PAG language for your review. Since this material is still pre-decisional, we request that you do not circulate it beyond the FRPCC PAGs subcommittee. Please contact me for any further guidance, if needed. This document will serve as our Federal Register proposed language and you can see that it provides a lot of explanatory text. After we receive and address public comments, the appropriate language will be used as our

Water chapter in a final PAG Manual.

We encourage you to send us feedback on content, wording, and the methods within the next two weeks. **Your comments for this round of review are due Wed., Mar. 18, 2015.**

Our contractor, EnDyna, will collect and organize your comments and we'll run an updated version past you before we complete internal EPA and legal reviews. This won't be your last chance to provide input, though, since we will have a follow up discussion with you about the FR Notice and the Rollout Plan. Afterwards, there will be the OMB interagency review cycle with your agencies.

Thank you in advance for your thoughtful input. Please do write or call if you have any questions. Talk to you soon!

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

<Drinking Water PAG proposal Subcmte review 2-27-2015.docx>

To: Hernandez-Quinones, Samuel[Hernandez.Samuel@epa.gov]
From: DeCair, Sara
Sent: Tue 3/3/2015 7:15:44 PM
Subject: RE: quick review: Water chapter to Subcmte

Ex. 5 - Deliberative Process

Maybe the Subcmte members will comment along those lines. Two weeks of rest!

S.

From: Hernandez-Quinones, Samuel
Sent: Tuesday, March 03, 2015 10:46 AM
To: DeCair, Sara
Subject: RE: quick review: Water chapter to Subcmte

Hi Sara,

Ex. 5 - Deliberative Process

Lisa is offsite today, so I still don't know if she has any comments. I will talk with her when she returns to the office later today and then will let you know about any questions/comments.

Thank You

Sam

==========

Samuel Hernández Quiñones, P.E.
Environmental Engineer
Environmental Protection Agency
Office of Water
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-564-1735

"USEPA Protecting Human Health and the Environment"

From: DeCair, Sara
Sent: Friday, February 27, 2015 4:03 PM
To: Veal, Lee; Perrin, Alan; Christ, Lisa; Hernandez-Quinones, Samuel; Ellis, Jerry; Wieder, Jessica
Subject: quick review: Water chapter to Subcmte
Importance: High

Ex. 5 - Deliberative Process

calculations. I fixed just a couple typos and reconfirmed the math. Please let me know early next week if you see any changes needed in the chapter or this note, and I can send it out ASAP!

Sara

---------_____

PAGs Subcommittee;

We'd like to share a copy of our draft drinking water PAG language for your review. This document will serve as our Federal Register proposed language and you can see that it provides a lot of explanatory text. Once we receive and address public comments, the appropriate language will be used as our Water chapter in a final PAG Manual.

We encourage you to send us feedback on content, wording, and the methods within the next two weeks. **Your comments for this round of review are due {Monday, Mar. 16th}.**

Our contractor, EnDyna, will collect and organize your comments and we'll run an updated version past you before we complete internal EPA and legal reviews. This won't be your last chance to provide input, though, since we will have a follow up discussion with you about the FR Notice and the Rollout Plan. Afterwards, there will be the OMB interagency review cycle with your agencies.

Thank you in advance for your thoughtful input. Please do write or call if you have any questions. Talk to you soon!

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Edwards, Jonathan[Edwards.Jonathan@epa.gov]; Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Mon 3/2/2015 2:24:59 PM
Subject: Re: quick review: Water chapter to Subcmte

That is a very good addition! I have said it 1,000 times but good to put it in writing. Sam says he is going to get back to me TODAY on the chapter, which is great. I will be holding my breath.

I think I can see the finish line -- or is it a mirage?

From: Edwards, Jonathan
Sent: Sunday, March 1, 2015 7:04 PM
To: Perrin, Alan
Cc: DeCair, Sara
Subject: RE: quick review: Water chapter to Subcmte

Sara—I haven't reviewed the draft chapter yet, but in your note I would add a specific sentence like – "Since this chapter on a water PAG is still pre-decisional, we request that you do not circulate this draft beyond the FRPCC PAGs subcommittee. Please contact me (Sara DeCair) for any further guidance, if necessary." I'll take a look at the draft chapter when I get a chance. Thanks – is the finish line getting closer??? (wry smile) --Jon

From: Perrin, Alan
Sent: Friday, February 27, 2015 4:16 PM
To: Edwards, Jonathan
Subject: FW: quick review: Water chapter to Subcmte
Importance: High

FYI, in case you would like to add in.

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

From: DeCair, Sara
Sent: Friday, February 27, 2015 4:03 PM
To: Veal, Lee; Perrin, Alan; Christ, Lisa; Hernandez-Quinones, Samuel; Ellis, Jerry; Wieder, Jessica

Subject: quick review: Water chapter to Subcmte
Importance: High

Ex. 5 - Deliberative Process

Sara

PAGs Subcommittee;

We'd like to share a copy of our draft drinking water PAG language for your review. This document will serve as our Federal Register proposed language and you can see that it provides a lot of explanatory text. Once we receive and address public comments, the appropriate language will be used as our Water chapter in a final PAG Manual.

We encourage you to send us feedback on content, wording, and the methods within the next two weeks. **Your comments for this round of review are due {Monday, Mar. 16th}.**

Our contractor, EnDyna, will collect and organize your comments and we'll run an updated version past you before we complete internal EPA and legal reviews. This won't be your last chance to provide input, though, since we will have a follow up discussion with you about the FR Notice and the Rollout Plan. Afterwards, there will be the OMB interagency review cycle with your agencies.

Thank you in advance for your thoughtful input. Please do write or call if you have any questions. Talk to you soon!

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Hunt, Brian[bhunt@sandia.gov]
From: DeCair, Sara
Sent: Thur 2/12/2015 6:31:16 PM
Subject: Here you go, don't tell anyone!
Redline PAG Manual 8-11-2104 v2.docx

PS the water section in this is being completely replaced… enjoy?

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Amy Doll[adoll@endyna.com]
From: DeCair, Sara
Sent: Thur 2/5/2015 9:16:57 PM
Subject: RE: More input on Q&As from Tony and Sara
Int and Late Phase FAQs from Ohio.docx

Good catch – here you go!

From: Amy Doll [mailto:adoll@endyna.com]
Sent: Thursday, February 05, 2015 3:54 PM
To: DeCair, Sara
Subject: RE: More input on Q&As from Tony and Sara

Hi Sara

Thanks . . . just checking – I received only one attachment (FAQ PDF with your comments) . . . should there have been a second attachment for late phase concerns?

Thanks,

Amy

Amy Doll

Senior Associate

EnDyna, Inc.
7926 Jones Branch Drive, Suite 620
McLean, VA 22102

adoll@endyna.com
Tel: 703-848-8842 ext. 121

Fax: 703-848-9001

From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Thursday, February 05, 2015 3:49 PM
To: Amy Doll
Subject: More input on Q&As from Tony and Sara

Amy,

I made comments to add in a few things in the attached doc, and have pasted Tony's input on 1.1 below. Of course email me if you run into questions or need help interpreting my input! Oh I also added a new attachment that is a long and wordy thing on later phase concerns, parts of which might come in handy…

Sara

Try this--

1.1–What are PAGs and how do they protect the public?

Ex. 5 - Deliberative Process

Thanks so much!

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

From: DeCair, Sara
Location: Ex. 6 - Personal Privacy
Importance: Normal
Subject: FW: Advisory Team Writing Session
Start Date/Time: Thur 1/29/2015 1:30:00 PM
End Date/Time: Thur 1/29/2015 7:30:00 PM
Advisory Team ConOps-FINAL 5-28-10_rev1.doc
A-team Charter_rev1.docx

Here's where we're supposed to be!

-----Original Appointment-----
From: Noska, Michael A [mailto:Michael.Noska@fda.hhs.gov]
Sent: Thursday, January 29, 2015 9:39 AM
To: Noska, Michael A; DeCair, Sara
Subject: FW: Advisory Team Writing Session
When: Thursday, January 29, 2015 8:30 AM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Ex. 6 - Personal Privacy

-----Original Appointment-----
From: Noska, Michael A [mailto:Michael.Noska@fda.hhs.gov]
Sent: Wednesday, January 28, 2015 7:15 PM
To: Noska, Michael A; Jensen, JohnT - DM; veal.lee@epa.gov; Whitcomb, Robert (CDC); Sincek, Jeffrey; Cherniack, James; Dixon, John E (CDC)
Subject: Advisory Team Writing Session
When: Thursday, January 29, 2015 8:30 AM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Ex. 6 - Personal Privacy

I hope this comes through appropriately as this is my first attempt at setting up a WebEx meeting.

Attachments for our review:

Michael Noska invites you to an online meeting using WebEx.

Meeting Number: Ex. 6 - Personal Privacy
Meeting Password:

To join this meeting (Now from mobile devices!)
---

1. Go to https://fda.webex.com/fda/j.php?MTID=m827d664a6e4999f23c241768ddfdcb8b
2. If requested, enter your name and email address.
3. If a password is required, enter the meeting password: Ex. 6 - Personal Privacy
4. Click "Join".
5. Follow the instructions that appear on your screen.

Teleconference information
---
1. Provide your number when you join the meeting to receive a call back. Alternatively, you can call one of the following numbers:
Local: Ex. 6 - Personal Privacy
toll free: Ex. 6 - Personal Privacy
2. Follow the instructions that you hear on the phone.
Your Cisco Unified MeetingPlace meeting ID: Ex. 6 - Personal Privacy

http://www.webex.com

IMPORTANT NOTICE: This WebEx service includes a feature that allows audio and any documents and other materials exchanged or viewed during the session to be recorded. By joining this session, you automatically consent to such recordings. If you do not consent to the recording, discuss your concerns with the meeting host prior to the start of the recording or do not join the session. Please note that any such recordings may be subject to discovery in the event of litigation.

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From: DeCair, Sara
Location: phone & webinar Ex. 6 - Personal Privacy and https://epa.connectsolutions.com/pagsubcmte/
Importance: Normal
Subject: FW: PAG Subcmte Mtg re: Water
Start Date/Time: Thur 1/22/2015 7:00:00 PM
End Date/Time: Thur 1/22/2015 8:30:00 PM

-----Original Appointment-----
From: DeCair, Sara
Sent: Thursday, January 08, 2015 11:18 AM
To: DeCair, Sara; Andrew.Wallo@eh.doe.gov; asa4@cdc.gov; ben.cacioppo@dtra.mil; Carlos.Corredor@Hq.Doe.Gov; Edward.Regnier@hq.doe.gov; John.Jensen@dm.usda.gov; john.mackinney@dhs.gov; john.madrid@dtra.mil; lee.a.nickel1@navy.mil; lodwick.jeffrey@dol.gov; michael.howe@fema.dhs.gov; Michael.Noska@fda.hhs.gov; Patricia.Milligan@nrc.gov; paul.ward@fema.dhs.gov; ricardo.a.reyes@us.army.mil; siddhanti@endyna.com; tdkraus@sandia.gov; Veal, Lee; william.cunningham@nist.gov; Christ, Lisa; Hernandez-Quinones, Samuel; Ellis, Jerry; Wieder, Jessica
Cc: MacKinney, John A; Reyes, Ricardo A LTC USARMY DHA DHSS (US); Burneson, Eric
Subject: PAG Subcmte Mtg re: Water
When: Thursday, January 22, 2015 2:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: phone & webinar Ex. 6 - Personal Privacy and https://epa.connectsolutions.com/pagsubcmte/

Happy New Year to the PAGs Subcommittee! We look forward to meeting with you (remotely) via phone and webinar on Jan. 22 at 2 pm eastern time. We'll discuss a proposal for dealing with drinking water in a radiation emergency, and get your feedback on the many considerations we've been refining here. Looking forward to a productive and interesting discussion, -Sara-

phone & webinar Ex. 6 - Personal Privacy and https://epa.connectsolutions.com/
https://epa.connectsolutions.com/pagsubcmte/

To: Miguel Tuason[mtuason@endyna.com]; Wieder, Jessica[Wieder.Jessica@epa.gov]
From: DeCair, Sara
Sent: Fri 1/9/2015 10:25:50 PM
Subject: RE: Review - PAG Manual Cover art, etc.

Miguel,

Before I take off for the weekend, let me pass on Jess's input –

The seven letters works when it's Science, but not Prepare, or Respond, sadly. People who didn't know what they were looking at didn't figure out what the word was.

That said, a more linear watermark of perhaps Prepare, and Respond, could highlight EPA in the one word and even use the "re" in combo, somehow.

Or we might want to look at simple options, too. I think the blue should be a bit lighter, like the ORD Science report we started from.

I'm going to forward you an example that Jessica shared with me that does a better job fading out the edges of the keyhole graphic, and I think we will want to set up a call/webinar to talk through some ideas we'd like to pursue on that. Let's talk about scheduling via email, on Monday.

Look for my next forwarded message, and have a great weekend!

Sara

From: Miguel Tuason [mailto:mtuason@endyna.com]
Sent: Friday, January 09, 2015 3:59 PM
To: DeCair, Sara; Wieder, Jessica
Subject: RE: Review - PAG Manual Cover art, etc.

Hello Sara and Jessica –

Wanted to touch base before the weekend.

We are standing by for additional feedback from Jessica, and we will then be ready to draft a few new cover options for your consideration.

The PAG title will be updated on the next round of drafts.

I hope you both enjoy the weekend.

Best

Miguel

From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Wednesday, January 07, 2015 5:03 PM
To: Miguel Tuason; Wieder, Jessica
Subject: RE: Review - PAG Manual Cover art, etc.

Miguel –

I love that clever EPA in the middle of Prepare!

Change the title to:

PAG Manual

Protective Action Guides and Planning Guidance for Radiological Incidents

And let's wait for Jessica to say whether she is interested in also being on a call about the Keyhole graphic. I know we've talked about it before, but she is super busy so I hesitate to pile on right now –

Back at you tomorrow or the next day!

Thank you,

Sara

From: Miguel Tuason [mailto:mtuason@endyna.com]
Sent: Wednesday, January 07, 2015 4:11 PM
To: DeCair, Sara; Wieder, Jessica
Subject: RE: Review - PAG Manual Cover art, etc.

Hello again…

For visual purposes only, I have prepared these two covers with "PREPARE" and "RESPOND" to replace "SCIENCE."

(The clever thing about "PREPARE" is that the letters "EPA" appear in the middle line).

Generally, any 7-letter word should fit this format, once you've decided to go with a watermark.

Best,

Miguel

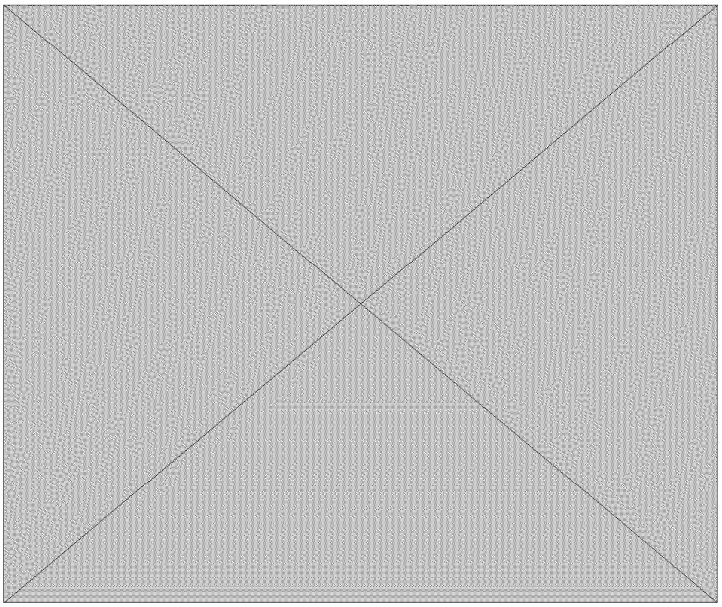
From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Wednesday, January 07, 2015 11:48 AM
To: Miguel Tuason; Wieder, Jessica
Subject: Review - PAG Manual Cover art, etc.

Miguel,

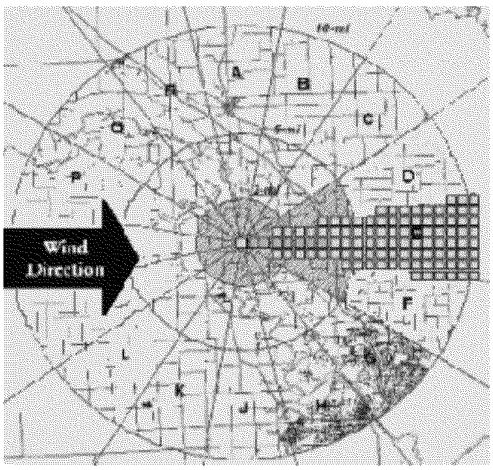
I'm giving you my initial thoughts, and including Jessica so she can pipe in as well.

I wonder if a more relevant word for the watermark rather than Science could be "Prepare" or "Respond."

The blanks for pictures are a real struggle, since using PAGs is usually kind of a pencil-pushing exercise, and doesn't have many key graphics that really shine. The only one is the 'keyhole' one on p. 37 of the PAG Manual, which we've hated since it draws far too bright of lines between areas, and implies there is no contamination outside the keyhole:



Is there any way you'd be able to work on a better depiction of this, if we set up a conference call to discuss what we wish it looked like? Here is one that is a little better, from nrc.gov:



But perhaps no pictures are needed! That is an easier option, I think…

Also, for the back cover, I would like the bottom to be a mailing label so we can mail out PAG

Manuals to all our customers, when we print and bind copies. Or Jessica, do you have thoughts about how we might best provide the bound copies to everyone who will want it? I don't think we've done a new bound manual in a long time, but maybe other shops have done distribution more recently and have good practices.

That's all I've got for now, thanks to both of you,

Sara

From: Miguel Tuason [mailto:mtuason@endyna.com]
Sent: Monday, January 05, 2015 3:19 PM
To: DeCair, Sara
Subject: RE: Publication rules for PAG Manual? Cover art, etc.

Hello, Sara –

Happy New Year, and thanks so much for sending the EPA Stylebook information.

Having reviewed it, there does not appear to be anything in it that would restrict the use of the word "SCIENCE" from appearing as a watermark on the PAGs cover. If that is an ORD/Communications issue, the stylebook does not cover it. Is there anyone at ORD you'd like us to contact to put in an inquiry? We would be happy to.

That said, I believe Smita already sent you the attached "version 001" a week or so ago for your review and approval.

Also, as you can see from the attached, there are two blank white boxes on the cover meant for two (2) PAGs-related images/graphics/photographs.

I am emailing you today to ask whether or not you already had relevant images – perhaps from inside the manual – for use in these two blank spots on the cover.

Or, if not, if you had any suggestions for two relevant images/graphics/photographs.

Once we have determined/established which images/graphics/photographs you would like in those spots, we will then use the stylebook, specifically, the section on "*the use of copyrighted materials* (page 95)," to work on getting necessary permissions and clearances, accordingly.

I look forward to hearing from you soon.

Thanks again.

Best

Miguel

Begin forwarded message:

From: "DeCair, Sara" <DeCair.Sara@epa.gov>
Date: January 5, 2015 at 8:27:00 PM GMT+5:30
To: "Wieder, Jessica" <Wieder.Jessica@epa.gov>, "Lee, Raymond" <Lee.Raymond@epa.gov>, "Shogren, Angela" <Shogren.Angela@epa.gov>, "Nesky, Anthony" <Nesky.Tony@epa.gov>, "siddhanti@endyna.com" <siddhanti@endyna.com>
Cc: "McMichael, Nate" <McMichael.Nate@epa.gov>
Subject: RE: Publication rules for PAG Manual? Cover art, etc.

Thanks much! EnDyna is working on draft cover art to show us and they can refer to these guidelines.

From: Wieder, Jessica
Sent: Monday, January 5, 2015 9:12 AM
To: Lee, Raymond; Shogren, Angela; DeCair, Sara; Nesky, Anthony
Cc: McMichael, Nate
Subject: RE: Publication rules for PAG Manual? Cover art, etc.

EPA has a Stylebook: http://www2.epa.gov/sites/production/files/documents/stylebook.pdf

Page 40 starts info on logo usage
Page 68 discusses different types of publications
Page 77 has information getting a publication number (Sara – I think we can still work with Beth on getting publication numbers)

EPA does not have a template for any of these types of publications. Over the past 6 years, we have encouraged having the RPD wave concept incorporated into the cover of publications. The PAGs can't have its own "logo", but I believe you have a lot of creative space in which to design the cover.

We can call up to OPA if we have more questions.

Jess

Jessica Wieder
U.S. EPA
Radiation Protection Program
Acting Director, Center for Radiation Information and Outreach
w: 202-343-9201
c: Ex. 6 - Personal Privacy

From: Lee, Raymond
Sent: Tuesday, December 23, 2014 10:55 AM
To: Shogren, Angela; DeCair, Sara; Wieder, Jessica; Nesky, Anthony
Cc: McMichael, Nate
Subject: Re: Publication rules for PAG Manual? Cover art, etc.

Hi all,

Hrmm - I really don't have much to add other than I know we'll probably need to go through Beth or Rafie to get an official document number for the publication. As far as cover art/watermarks and such, I'm wondering if that is done through the communications folks. Nate, do we need to do anything specific for this process? I'm assuming there is some consistency the Agency wants in all of its publications but there is some leeway in terms of graphics, etc.

Thanks,

Ray

From: Shogren, Angela
Sent: Tuesday, December 23, 2014 10:13 AM
To: DeCair, Sara; Wieder, Jessica; Nesky, Anthony; Lee, Raymond
Subject: RE: Publication rules for PAG Manual? Cover art, etc.

I think that Ray may have some information on the process. Ray, can you add any insight to this?

Angela Shogren | Public Affairs Specialist | U.S. Environmental Protection Agency | Tel 202 343 9761 | shogren.angela@epa.gov<mailto:shogren.angela@epa.gov>

From: DeCair, Sara
Sent: Tuesday, December 23, 2014 10:10 AM
To: Wieder, Jessica; Shogren, Angela; Nesky, Anthony
Subject: Publication rules for PAG Manual? Cover art, etc.

So that EnDyna Inc. can work on cover art for the final PAG Manual, will you direct me to the rules about making a new guidance public? When we went out for public comment in 2013, we didn't get a document number or do any of the other things since it was just available on the web to comment on. In early 2016, we hope to have a document ready for publication, printing, and providing to our customers.

I liked ORD's "Science" watermark on this guidance: http://epa.gov/sciencematters/december2011/drinkingwaterreport.htm but I'm not sure if ORD is the only one who can use that. The back of the book also has room for a mailing address, which is kind of neat.

Of course this is way ahead of time, but while we wait for the water guide to proceed through all the needed steps, I hoped I could get everything else done. Thank you for any help you can provide!!

S.

Sara D. DeCair
http://www.epa.gov/radiation/rert/pags.html
202-343-9108
new office
Room 1416 B in WJC West

To: Telofski, Scott[telofski.scott@epa.gov]
From: DeCair, Sara
Sent: Wed 1/7/2015 7:10:39 PM
Subject: I found something useful!
Isotopes Report draft 4-2014.doc

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Noska, Michael A[Michael.Noska@fda.hhs.gov]
From: DeCair, Sara
Sent: Mon 1/5/2015 9:56:05 PM
Subject: RE: Reminder: Vote: Date/time for PAG Subcmte meeting in January

Shocking, isn't it? Once we all catch up on emails, your calendar will be a zoo like usual :)

From: Noska, Michael A [Michael.Noska@fda.hhs.gov]
Sent: Monday, January 5, 2015 4:20 PM
To: DeCair, Sara
Subject: RE: Reminder: Vote: Date/time for PAG Subcmte meeting in January

Hi Sara,

Happy New Year! I forgot to check the doodle scheduler when I was home on vacation. I Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy will check it and let you know. My schedule is relatively open right now.

Mike

Michael A. Noska, M.S.
Captain, USPHS
Radiation Safety Officer and Senior Advisor for Health Physics
Employee Safety and Environmental Management Staff
Office of the Commissioner/Office of Operations
Food and Drug Administration
301-796-8313 (Office)
240-402-9998 (Rad Safety Office)
301-526-7956 (Cell)

-----Original Message-----
From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Monday, January 05, 2015 12:22 PM
To: Andrew.Wallo@eh.doe.gov; Ansari, Armin J (CDC); ben.cacioppo@dtra.mil; Carlos.Corredor@Hq.Doe.Gov; Edward.Regnier@hq.doe.gov; ATeam-JENSEN, JOHN; john.mackinney@dhs.gov; john.madrid@dtra.mil; lee.a.nickel1@navy.mil; lodwick.jeffrey@dol.gov; michael.howe@fema.dhs.gov; Noska, Michael A; Patricia.Milligan@nrc.gov; paul.ward@fema.dhs.gov; ricardo.a.reyes@us.army.mil; siddhanti@endyna.com; tdkraus@sandia.gov; ATeam-VEAL, LEE; william.cunningham@nist.gov
Subject: Reminder: Vote: Date/time for PAG Subcmte meeting in January

Happy New Year to the PAGs Subcommittee! If you haven't yet, please provide your availability in the Doodle poll (link below) so we can meet soon. Thank you,

Sara
202-343-9108

From: DeCair, Sara
Sent: Thursday, December 18, 2014 9:45 AM
To: Andrew.Wallo@eh.doe.gov; asa4@cdc.gov; ben.cacioppo@dtra.mil; Carlos.Corredor@Hq.Doe.Gov; Edward.Regnier@hq.doe.gov; John.Jensen@dm.usda.gov; john.mackinney@dhs.gov; john.madrid@dtra.mil; lee.a.nickel1@navy.mil; lodwick.jeffrey@dol.gov; michael.howe@fema.dhs.gov; Michael.Noska@fda.hhs.gov; Patricia.Milligan@nrc.gov; paul.ward@fema.dhs.gov; ricardo.a.reyes@us.army.mil; siddhanti@endyna.com; tdkraus@sandia.gov; Veal, Lee;

william.cunningham@nist.gov
Subject: Vote: Date/time for PAG Subcmte meeting in January

Please click on the link below to share your availability for the next meeting of the PAGs Subcommittee. We'll meet via phone and webinar, and will discuss a proposed approach for drinking water that I think you'll find interesting. Thanks for letting me know if you have questions or concerns, and happy holidays!

http://doodle.com/zi4hhuqbtt4m3vss

Sara D. DeCair
http://www.epa.gov/radiation/rert/pags.html
202-343-9108
new office
Room 1416 B in WJC West

To: Nancy Jones[Jones.Nancy@epa.gov]
From: DeCair, Sara
Sent: Wed 12/24/2014 2:50:46 PM
Subject: One pager on PAGs, short PAGs 101 PPT
Outreach to FRPCC talking points 9-22-2014.docx
PAGs 101 6-26-2014.ppt

Ex. 5 - Deliberative Process

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: siddhanti@endyna.com[siddhanti@endyna.com]; Amy Doll[adoll@endyna.com]
From: DeCair, Sara
Sent: Tue 12/16/2014 7:55:33 PM
Subject: A few places to update in Storyboards
EPA PAG Storyboards_Sara cmts 12-2014.doc

I went through to point out the key things that have changed since the 2007 (!!) draft version of PAGs and today's version. I hope this is helpful!

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Snead, Kathryn[Snead.Kathryn@epa.gov]
From: DeCair, Sara
Sent: Mon 12/15/2014 3:53:32 PM
Subject: Starting on p. 46 of PAG Manual...
PAG Manual 2013 hilited stuff to add to NRIA.docx

Ex. 5 - Deliberative Process

To: Smita Siddhanti[Siddhanti@endyna.com]
From: DeCair, Sara
Sent: Tue 12/9/2014 10:05:58 PM
Subject: RE: File management for PAGS
Catalog of old PAGs files 9-2013.xls

Could it be Tuesday morning at 8:30 am? I will be here and raring to go! Here is the file catalog we did before, by the way. Thank you!!

S.

From: Smita Siddhanti [mailto:Siddhanti@endyna.com]
Sent: Tuesday, December 09, 2014 3:36 PM
To: DeCair, Sara
Subject: File management for PAGS

Hi Sara,

Friday is not looking too good for Erin to come to EPA, since **Ex. 6 - Personal Privacy** **Ex. 6 - Personal Privacy** Can we have her come there on Monday, 15th Dec, and meet with you around 8:30 or 9 am to get started.

Do let me know,

-Smita

Smita Siddhanti, Ph.D.

Program Manager

EnDyna, Inc.

7926 Jones Branch Drive

Suite 620

McLean, VA 22102

Tel: 703 848 8840

Fax: 703 848 9001

www.endyna.com

To: siddhanti@endyna.com[siddhanti@endyna.com]
From: DeCair, Sara
Sent: Mon 12/8/2014 10:37:47 PM
Subject: Materials for PAGs work
PAGs Workshop 2007.ppt
Compare 1992 and 2007 PAGs.ppt
PAGFactSheet-6-2014.docx
PAGs 101 6-26-2014.ppt
PAG webinar slides updated Winter 2013.ppt

Smita,

Here are a couple things I think will help as starting points. I look forward to talking with your staffers about some of the file work and training and outreach. And it was great to catch up with you today – thanks so much for visiting!

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

Early Phase

1992

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI 25 rem (250 mSv) thyroid dose (adult)
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

2007

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI threshold 5 rem (50 mSv) thyroid dose (child)
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

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Intermediate Phase

1992

- Relocate population
  - ≥ 2 rem (20 mSv) (projected dose)
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food: (FDA 1982)
  - 0.5 rem (50 mSv) annual dose equivalent
- Drinking Water PAG
  - Promised

2007

- Relocate population
  - ≥ 2 rem (20 mSv) (projected dose)
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food (FDA 1998): Act based on most limiting of
  - 0.5 rem (5 mSv) whole body or
  - 5 rem (50 mSv) to most exposed organ or tissue
- Drinking water
  - 0.5 rem (5 mSv) first year CEDE

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FDA Food PAGs

1992

- 1982 FDA guidance
- NCRP 39 methodology
- Preventive PAG 0.5 rem whole body and 1.5 rem thyroid
- Emergency PAG 10 times higher, depends on impact
- Dose level only, no activity levels provided

2007

- 1998 FDA guidance
- ICRP 56 & NRPB methodology
- One set of PAGs:
  - 0.5 rem whole body dose or
  - 5 rem to most exposed organ or tissue
- Derived Intervention Level (DIL) calculated for 28 radionuclides

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Drinking Water PAG

1992

- Promised

2007

- Applicable to drinking water from any source
- EPA Safe Drinking Water Act levels after first year
- Doses will be greatly reduced in subsequent years
- 'Bridging language' to explain FDA Food PAG (includes water) and EPA Water PAG relationship

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Late Phase Guidance

1992

- Promised

2007

- DHS RDD/IND Consequence Management Workgroup drafted current guidance

January 3, 2006, *Federal Register* notice

- All radiological events covered (NPP/RDD/IND)
- Optimization

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2013 PAG Manual Revision

Overview with Questions & Answers

Sara DeCair, US EPA

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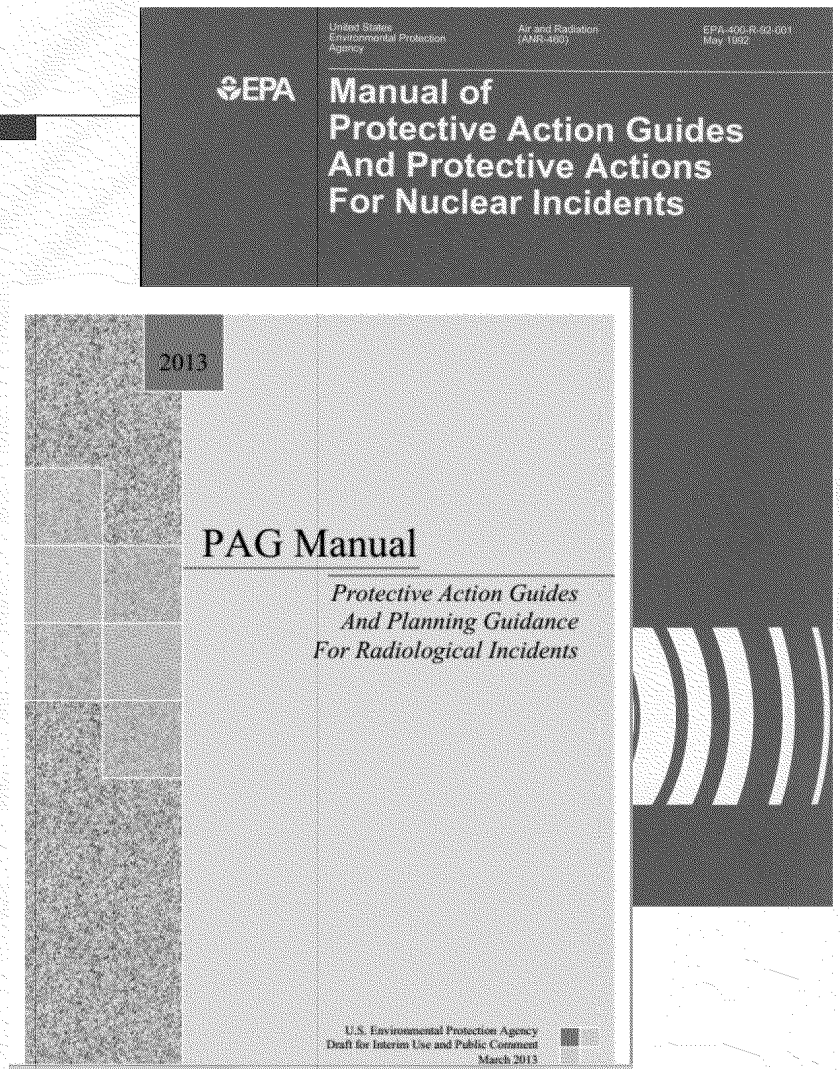
PAGs Manual

- Protective Action Guides (PAGs) Manual (1992)
- Early, Intermediate Phases only
- Promised Water and Late Phase (Recovery) PAGs



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2013 Draft PAG Manual

- Clarifies the use of PAGs for all radiological incidents, including terrorism
- Lowers projected thyroid dose for KI, via FDA
- Requests input on drinking water guidance
- Refers to 1998 FDA food guidance
- Includes guidance for long-term site restoration
- Updates dosimetry from ICRP 26 to ICRP 60, by referring to FRMAC methods

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When Do PAGs Apply?

- Not for radioactively contaminated sites
- Releases, incidents, or accidents
- Public protection is the focus
- Guidance, not regulatory
- This is not CERCLA or Superfund
- Avoided dose ≠ safe limit to allow

EPA

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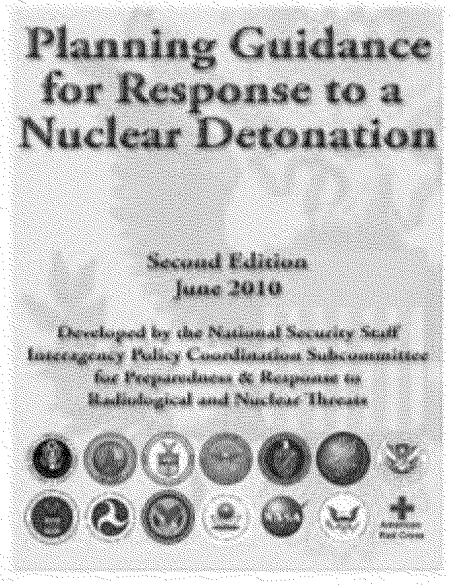
Relationship of EPA and DHS PAGs

- DHS vetted the Early and Intermediate PAGs for RDDs or INDs and provided needed guidance for Late Phase (recovery) guidance in 2008
  - ✓ EPA PAG Manual incorporates this late phase guidance
  - ✓ DHS document will 'sunset' when PAG Manual is finalized
- Planning Guidance for IND (2010)
  - ✓ PAGs don't apply well after an IND
  - ✓ Scope and scale
  - ✓ Priority on lifesaving and avoiding acute effects
  - ✓ Short response timeframe
  - ✓ Unique fallout decay curve
  - ✓ Referenced in PAG Manual



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Federal Register Questions

- Regarding the entire Manual:
  - ✓ Readers are referred to FRMAC Assessment Manuals for calculations using up-to-date dosimetry. Please comment on the usefulness of this approach and how to facilitate implementation of these methods.

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Early Phase

1992	2013
➢ Evacuation/Shelter 1-5 rem (10-50 mSv) ✓ thyroid/skin 5, 50 x higher	➢ Evacuation/Shelter 1-5 rem (10-50 mSv) ✓ (no organ dose specified)
➢ KI 25 rem (250 mSv) thyroid dose (adult)	➢ KI threshold 5 rem (50 mSv) thyroid dose (child)
➢ Worker 5, 10, 25+ rem (50, 100, 250+ mSv)	➢ Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

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Potassium Iodide (KI) Actions

- FDA recommends a multi-pronged approach:

Threshold Thyroid Radioactive Exposures and Recommended Doses of KI for Different Risk Groups				
	Predicted Thyroid exposure(cGy)	KI dose (mg)	# of 130 mg tablets	# of 65 mg tablets
Adults over 40 yrs	≥500	130	1	2
Adults over 18 through 40 yrs	≥10			
Pregnant or lactating women	≥ 5			
Adoles. over 12 through 18 yrs*				
Children over 3 through 12 yrs		65	1/2	1
Over 1 month through 3 years		32	1/4	1/2
Birth through 1 month		16	1/8	1/4

- A simplified approach:
  - ✓ Provide KI to public if 5 rem (50 mSv) child thyroid dose projected
  - ✓ This is a supplemental action where evacuation is the primary protection

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Guidance for Emergency Workers

Dose (rem)	Activity	Condition
5	All	None
10	Protecting valuable property	Lower dose not practicable
25*	Lifesaving or protection of large populations	Lower dose not practicable

* Greater than 25 rem for lifesaving only to volunteers aware of the risks

EPA

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Federal Register Questions

Regarding the Early Phase:

- Please comment on the usefulness of the simplified KI implementation guidance
- Please comment specifically on the appropriateness of not retaining the skin and thyroid evacuation thresholds

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Intermediate Phase

1992	2013
➢ Relocate population ✓ ≥ 2 rem (20 mSv) first year (projected dose) ✓ 0.5 rem (5 mSv) any subsequent year ✓ 5 rem (50 mSv) over 50 yrs ➢ Apply dose reduction techniques ✓ < 2 rem (20 mSv)	➢ Relocate population ✓ ≥ 2 rem (20 mSv) first year (projected dose) ✓ 0.5 rem (5 mSv) any subsequent year ✓ (removed 50-year Relocation PAG) ➢ Apply dose reduction techniques ✓ < 2 rem (20 mSv)

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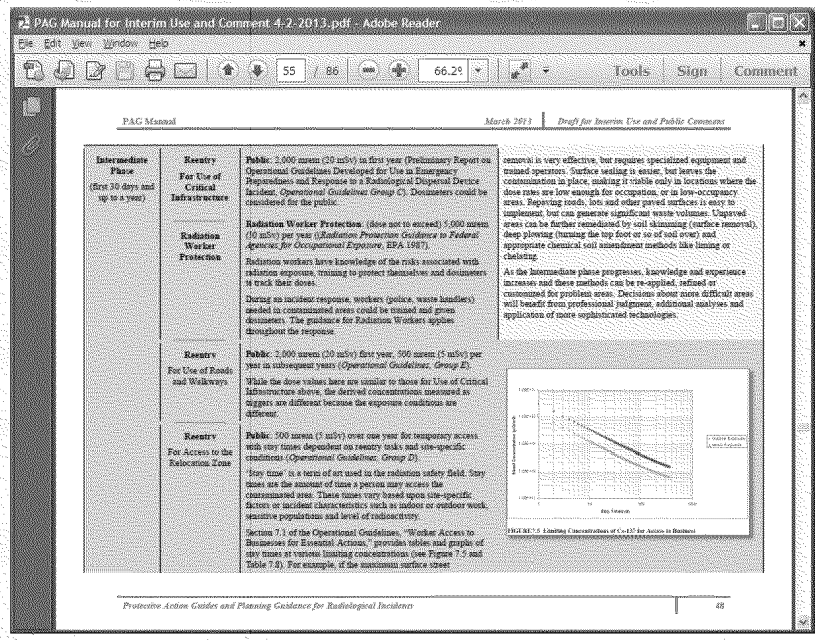
Re-entry Matrix

- New quick reference matrix
- Public, workers re-entering Relocation area to work during cleanup
- Basis: Relocation PAGs
- Assumptions: Detailed exposure scenarios in Operational Guidelines
- Do it yourself: RESRAD-RDD software



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Federal Register Questions

Regarding the Intermediate Phase:

- Please comment on the appropriateness of removing the 5 rem over 50 years Relocation PAG
- Please comment on the format and utility of new Re-entry guidance
- Comment on whether it would be useful to develop a combined, all-pathways Intermediate Phase PAG

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Drinking Water PAG

1992	2013
➢ Promised	➢ National Primary Drinking Water Regulations provide emergency actions ✓ Increased monitoring ✓ Notifications ➢ Comments sought on whether, and what value, an emergency PAG for water should be considered

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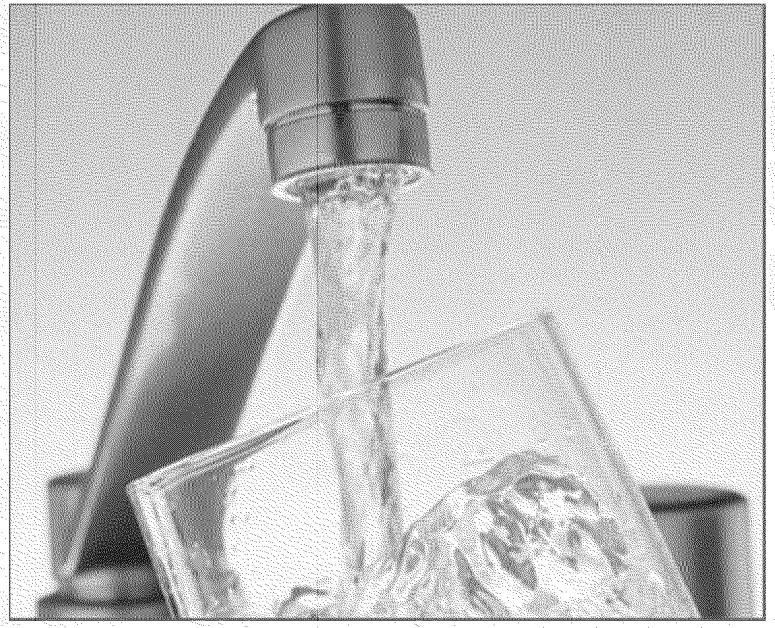
Drinking Water PAG

- Comments sought on whether, and what value, an emergency PAG for water should be considered
- Other related guides from WHO, IAEA, DHS, FDA may inform your input



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FDA Food PAGs

1992	2013
➢ 1982 FDA guidance ➢ NCRP 39 methodology ➢ Preventive PAG 0.5 rem (5 mSv) whole body and 1.5 rem (15 mSv) thyroid ➢ Emergency PAG 10 times higher, depends on impact ➢ Dose only, no activity levels provided	➢ 1998 FDA guide, by reference ➢ ICRP 56 & NRPB methods ➢ One set of PAGs ✓ 0.5 rem (5 mSv) whole body dose or ✓ 5 rem (50 mSv) to most exposed organ or tissue ➢ Dose and derived intervention levels (DILs) provided

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Federal Register Questions

Regarding Food and Water:

- Input on the appropriateness of, and possible values for, a drinking water PAG is being sought
- Since FDA's 1998 Food guidance is already final and published, comments are not requested on it

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Late Phase: Cleanup Goal

- Customer expectation of cleanup goal = background?
- Prescriptive or flexible
- Time, costs, risks, benefits
- What about your personal items?

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Step-wise Process

- Characterization and stabilization
- Establish cleanup goals based on options analysis
- Implementation and reoccupancy

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Decision-Making Organizations

- Focus on process for reaching consensus:
  - ✓ Decision Team – might be requesting funding
    - Senior local, state and federal officials
  - ✓ Recovery Management Team
    - Senior leadership in the field recovery effort
  - ✓ Stakeholder Working Group
    - Community leaders, local businesses, nongovernmental representatives, members of the public
  - ✓ Technical Working Group
    - Select subject matter experts, communicators

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Late Phase: Waste Management

- Document focuses on options for disposal
  - ✓ Licensed LLRW disposal facilities
  - ✓ RCRA solid and hazardous waste landfills
  - ✓ Federal facilities/sites
  - ✓ Newly developed disposal capacity
  - ✓ Appropriate for level of hazard
- States bear primary responsibility
  - ✓ Waste volumes will drive decision-making
    - Could overwhelm existing disposal capacity (see Japan)
    - Need to be considered in early planning

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EPA Waste Management Resources

- Waste Estimation Support Tool (WEST)
  - ✓ First-order estimates of waste types and volumes
  - ✓ Based on analysis of plume maps
- CBR Disposal Technology Workshop report
  - ✓ Technical issues in developing new capacity
  - ✓ http://www.epa.gov/nhsrc/pubs.html
- Minimization/Segregation Technology Guideline
  - ✓ Developed through the WARRP effort (available soon)
- Interactive, web-based waste management planning tool for incidents (early concept)

EPA

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Federal Register Questions

Regarding Late Phase:

- Please comment on the usefulness of the brief cleanup planning guidance, and how it might be implemented in state, tribal and local plans
- Please comment on the merging of the 2008 DHS RDD/IND cleanup guide with this Manual
- Please comment on the basic waste disposal planning guidance and how it should be implemented in plans at all levels of government

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The End

Comments or questions?

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Fact Sheet
Revision of the "PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents"

What are Protective Action Guides (PAGs)?

In the event of a radiological emergency, decision-makers can direct the members of the public to take protective actions to avoid exposure to unhealthy amounts of radiation. Protective Action Guides (PAGs) are radiation dose guidelines that trigger protective actions such as evacuation or staying indoors.

EPA developed a Manual of Protective Action Guides (the "PAG Manual") to help federal, state and local authorities decide how to protect the public during radiological emergencies. Emergency response organizations use the guidance in the PAG Manual in their emergency response planning.

PAGs are for use only in emergencies. PAGs are not legal radiation limits, and do not supersede any environmental laws or regulations. The PAG Manual provides emergency responders with flexible guidance on protective actions because every incident is different. State and local officials can take actions to protect the public based on incident-specific conditions.

Why has EPA updated the PAG Manual?

DRAFT

The last version of the PAG Manual was issued in 1992. Since then, there have been advancements in scientific understanding of radiation dose and risk to human health. EPA worked with multiple federal agencies including the Department of Homeland Security, Federal Emergency Management Agency, Department of Energy, Department of Health and Human Services, Nuclear Regulatory Commission, Occupational Safety and Health Administration and Department of Defense to develop the revised PAG Manual. EPA believes that guidance based on the best available science can help local authorities save lives and minimize the impact of a radiological emergency. Local authorities rely on EPA guidance to keep their emergency response plans up-to-date with the most current science.

2013 Draft PAG Manual for Interim Use—When will it be finalized?

EPA is assessing more than 5,000 public comments and plans to issue a final PAG Manual in 2015. A one-year training and adoption period will allow local authorities and other users to update their response plans.

The updated PAG Manual includes updated dose calculations based on the latest science. A number of other changes in the revised PAG Manual are based on lessons learned from actual radiological emergencies, including the Fukushima nuclear power plant accident. Significant changes in the new manual include—

- **Use of PAGs in Different Types of Radiological Emergencies:** The updated PAG Manual now applies to a broader range of radiological emergencies, including terrorist acts. The 1992 version, while it applied to all radiological emergencies, was heavily focused on nuclear power plant incidents.

- **Food Guidance:** Planners are referred to current guidance on radioactive contamination in food from the U.S. Food and Drug Administration (FDA). The previous version of the PAG Manual included an older FDA food guidance document that has been significantly updated since 1992.

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- **Administration of Potassium Iodide (KI):** In this update, EPA has adopted the latest guidance from FDA on administration of a potassium iodide (KI), a compound that inhibits the thyroid's uptake of radioactive iodine taken into the body. (Note: Administration of KI is an appropriate protective action only in emergencies that involve radioactive iodine; it does not provide protection against other radioactive substances.)

- **Guidance on Reentry**: The update contains brief planning guides on reentry to areas from which people have been removed because of a radiological incident.

- **Cleanup and Waste Disposal Considerations**: The proposed revision provides brief guidance for planning a cleanup process and considerations for planning the disposal of radioactive waste. Cleanup and waste disposal decisions will involve careful coordination with stakeholders throughout the process.

- **Update Dosimetry:** For projecting doses, the updated PAG Manual points refers users to the Federal Radiological Monitoring and Assessment Center (FRMAC) "Federal Manual for Assessing Environmental Data During a Radiological Emergency." The FRMAC Manual's dosimetry is based on the International Commission on Radiological Protection's Publication 60 (ICRP 60)

When would the PAG Manual be used?

DRAFT

The PAG Manual provides federal, state, and local emergency planners with guidance they can use in their emergency response plans. It provides information for each phase of a radiological incident—

- **Early or Emergency Phase:** This is the beginning of the incident, when immediate decisions must be made about actions to protect the public. This phase can last hours to days.

- **Intermediate Phase**: This period, lasting weeks to months, begins after the radiation releases have been brought under control, and reliable environmental measurements are available for use as a basis for decisions on protective actions.

- **Late or Recovery Phase:** This period, lasting months to years, is no longer a response to an emergency. Activities during this phase support site restoration and cleanup.

Where can I find more information?

Visit our web page to learn more and download the PAG Manual:

http://www.epa.gov/radiation/rert/pags.html

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EPA Protective Action Guides

PAGs 101

Promoting radiation safety worldwide.

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Outline

- What is a PAG
- Phases of Emergency Response
  - ✓ Early Phase
  - ✓ Intermediate Phase
  - ✓ Late Phase
- Key Updates

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What is a PAG

- A value against which to compare the projected dose to a defined individual from a release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted
- Guidance for public officials
- Protective Action Guides are called 'PAGs'

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Phases of Response

- Early Phase: The first hours to days until the release has stopped, when protective actions decisions must be made with little to no information
- Intermediate Phase: The weeks to months when more information is available, protective actions are more restrictive, and cleanup planning begins
- Late Phase: No longer an emergency response; activities shift to long term recovery and cleanup

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Early Phase PAGs

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI 5 rem (50 mSv) child thyroid dose
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

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Intermediate Phase PAGs

- Relocate population
  - ≥ 2 rem (20 mSv) first year (projected dose)
  - 0.5 rem (5 mSv) any subsequent year
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food (FDA 1998): Most limiting of
  - 0.5 rem (5 mSv) whole body or
  - 5 rem (50 mSv) to most exposed organ or tissue

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Late Phase

- Actions designed to reduce radiation levels in the environment begin
- Actions are meant to reduce long-term exposures and improve living conditions.
  - ✓ A PAG level, or dose to avoid, is not appropriate for long-term cleanup
  - ✓ Manual describes important aspects of process and participants in decision making on clean-up goals, technology, land use and approaches
- Stakeholder involvement is key

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2013 Revised PAG Manual

- Update to the 1992 PAG Manual
  - ✓ Expanded scope to include RDD, IND
  - ✓ Incorporated updated Potassium Iodide guidance
  - ✓ Refers to updated FDA Food guidance
  - ✓ Includes a new matrix on re-entry decisions
  - ✓ Provides brief cleanup and waste management planning guidance
  - ✓ Incorporates DHS 2008 late phase cleanup guidance
  - ✓ Updates science basis to latest international guides

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Wrap Up

- Questions?
- Comments?
- Suggestions?

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PAG MANUAL WORKSHOP

May 24, 2007

39th Annual National Conference on Radiation Control

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PAG Workshop Elements

I. Introduction
II. PAG Update Summary
III. Early Phase
IV. Intermediate Phase
V. Drinking Water/Food PAGs
VI. Late Phase
VII. Conclusion/Summary

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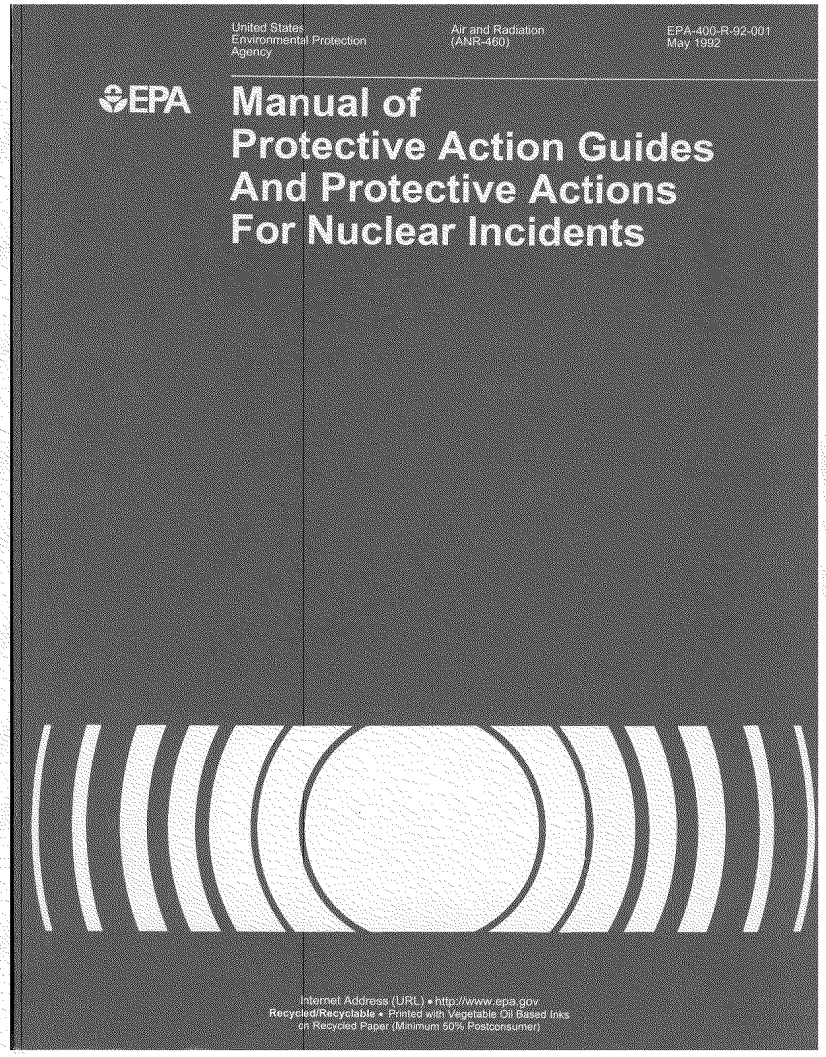
1992 EPA PAG Manual

- Included updates and revisions to previous editions
- Based on Federal Guidance Report 11 methodology (ICRP 26)
- Promised water and Late Phase PAGs



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2007 Draft PAG Manual

- Clarifies the use of 1992 PAGs for incidents other than nuclear power plant accidents
- Lowers projected thyroid dose for KI
- Provides drinking water guidance
- Includes guidance for long-term site restoration
- Updates dosimetry from ICRP 26 to ICRP 60

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What is a Protective Action Guide?

- PAG—A **value** against which to compare the **projected dose** to a defined individual from a release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted.

- **Projected dose** is a dose that can be averted by protective actions.

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Incident Response Phases

- **Early Phase**: Can last from hours to days until the release has stopped
- **Intermediate Phase**: Can last from a week to months
- **Late Phase**: Can last from months to years

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Early Phase

1992

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI 25 rem (250 mSv) thyroid dose (adult)
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

2007

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI threshold 5 rem (50 mSv) thyroid dose (child)
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

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Intermediate Phase

1992

- Relocate population
  - ≥ 2 rem (20 mSv) (projected dose)
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food (FDA 1982)
  - 0.5 rem (50 mSv) annual dose equivalent
- Drinking water
  - Promised

2007

- Relocate population
  - ≥ 2 rem (20 mSv) (projected dose)
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food (FDA 1998): Act based on most limiting of
  - 0.5 rem (5 mSv) whole body or
  - 5 rem (50 mSv) to most exposed organ or tissue
- Drinking water
  - 0.5 rem (5 mSv) first year CEDE

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Hidden—Intermediate Phase

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FDA Food PAGs

1992

- 1982 FDA guidance
- NCRP 39 methodology
- Preventive PAG 0.5 rem whole body and 1.5 rem thyroid
- Emergency PAG 10 times higher, depends on impact
- Dose only, no activity levels provided

2007

- 1998 FDA guidance
- ICRP 56 & NRPB methods
- One set of PAGS
  - 0.5 rem whole body dose or
  - 5 rem to most exposed organ or tissue
- Dose and derived intervention levels (DILs) provided

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Drinking Water PAG

1992

- Promised

2007

- Applicable to drinking water from any source
- EPA Safe Drinking Water Act levels after first year
- Doses will be greatly reduced in subsequent years
- “Bridging language” to explain FDA food PAG (includes water) and EPA water PAG relationship

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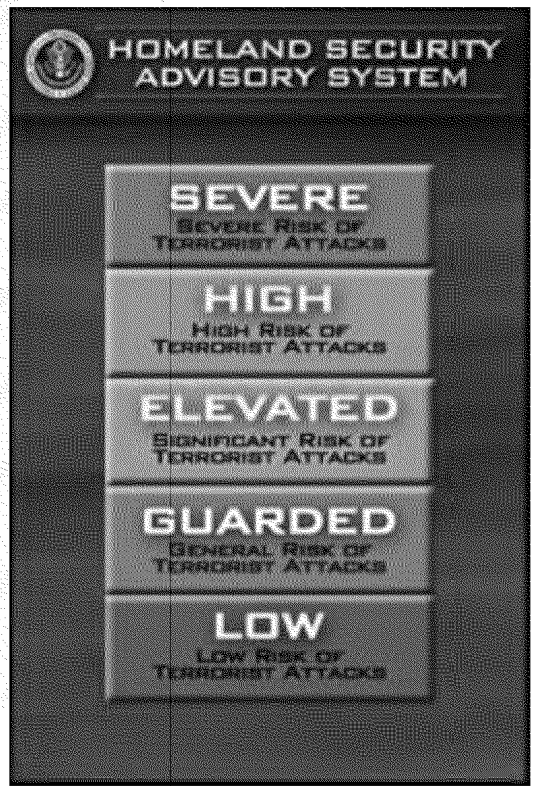
Application to Terrorist Incidents

- Since 9/11, new threat of radiological terrorism
- DHS vetted the PAG Manual (Early and Intermediate PAGs) for application to RDDs or INDs and identified the need for Late Phase, or recovery, guidance
- Application of PAGs to IND events
  - Scope and scale
  - Priority on lifesaving and avoidance of acute effects
  - Short response timeframe
  - Unique fallout decay curve
- Several projects to address the need for unique guidance



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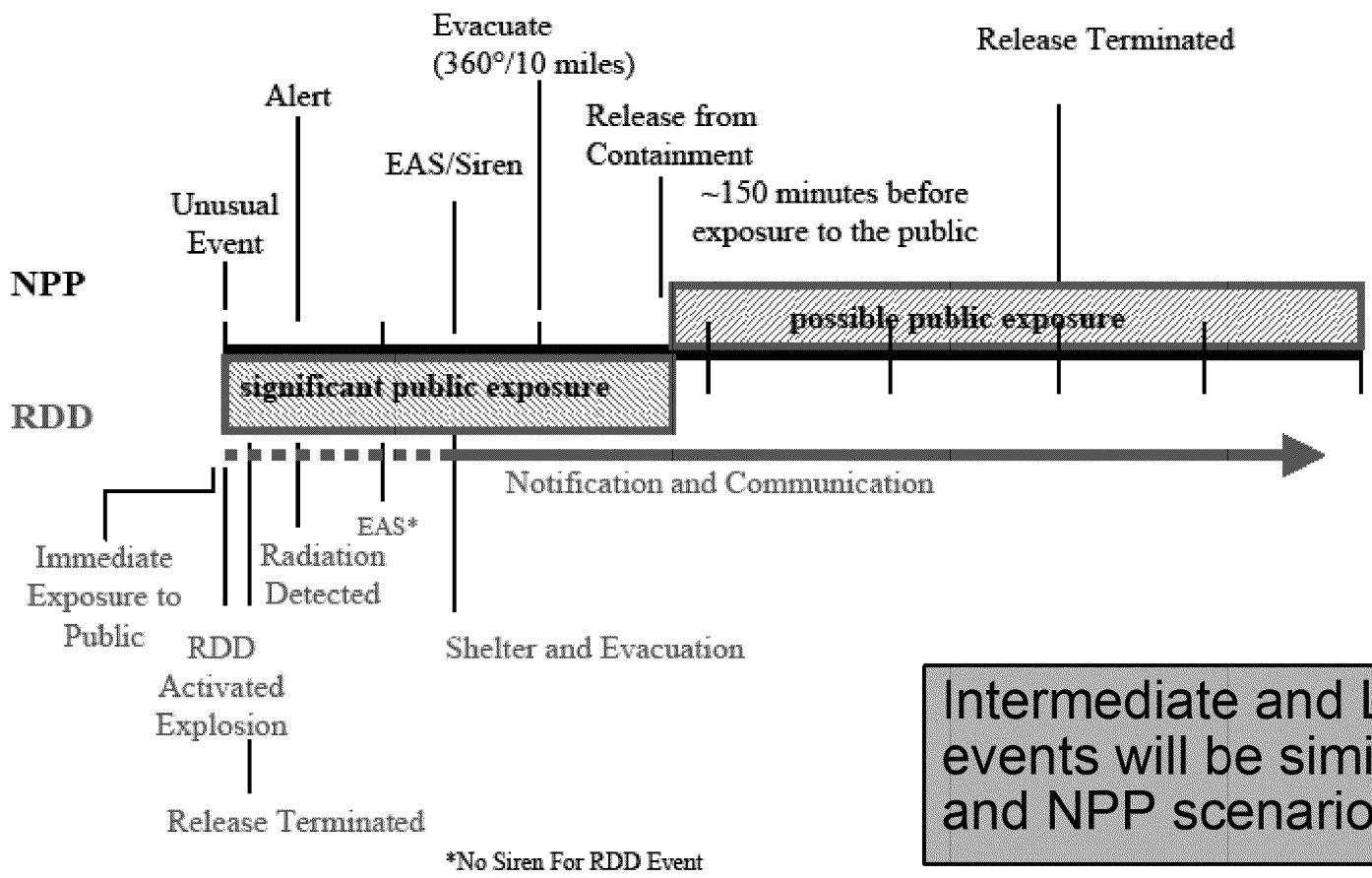
Hidden Slide

Different Scenarios, Different Sequences



Intermediate and Late Phase events will be similar for RDD and NPP scenarios.

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Late Phase Guidance

1992

- Promised

2007

- DHS RDD/IND Consequence Management Workgroup drafted current guidance (January 3, 2006, *Federal Register* notice)
- All radiological events covered (NPP/RDD/IND)
- Optimization

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Early Phase—Introduction

- Detailed description of proposed PAG revisions
  - Exposure pathways
    - Crude calculation example for downwind dose estimate
  - Evacuation and sheltering
    - Discuss KI administration
  - Emergency worker limits
  - DCFs, DRLs
    - Calculation example

Early Phase Initial Responses

- Notification of state and/or local authorities
- Immediate evacuation/sheltering (if necessary) prior to release information or measurements
- Monitoring of releases and exposure rate measurements
- Estimation of dose consequences
- Implementation of protective actions in other areas, if necessary

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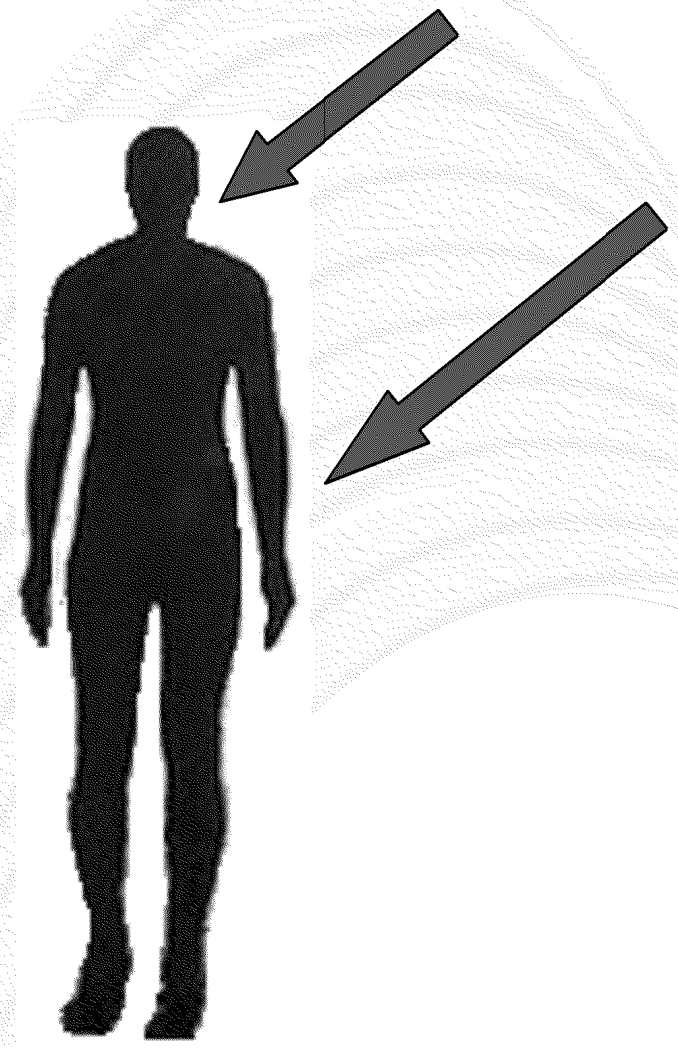
Early Phase Exposure Pathways

- Direct exposure
- Inhalation



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Establish Exposure Patterns

- In the Early Phase, data are not sufficient to accurately project doses
- Project dose using a combination of data and estimates:
  - Initial environmental measurements
  - Source term estimates
  - Previously observed atmospheric transport under similar meteorological conditions

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Simple Exposure Rate Calculation

If a site-specific model is not available, a simple method can be used to calculate the exposure rate at the plume centerline at ground level (1 m height).

$$D2=D1(R1/R2)^y$$

- D1 and D2 are measurements of exposure rates at the centerline of the plume at distances R1 and R2
- y is a constant that depends on atmospheric stability

Stability Class	y
A, B (light winds, sunlight)	2.0
C, D (wind>10 mph)	1.5
E, F (light winds@night)	1.0

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Calculation Example

The RDD exploded at 8:30 am (atmospheric stability Class E, winds of approximately 5 miles per hour). A radiation monitor 100 meters from the blast site recorded fluctuating readings over the first 60 minutes that averaged 500 mR/hr. What would the estimate of exposure rate be at a distance of 2 kilometers (nearest public school) from the blast location?

$R1 = 100\ m$
$R2 = 2000\ m$
$D1 = 500\ mR/hr$
$y = 1$

$$D2 = D1(R1/R2)^y$$

$$D2 = 500(100/2000)^1$$

$$D2 = 25\ mR/hr$$

This information should be analyzed in conjunction with plume source-term projections and airborne radioactivity concentrations to determine if evacuation or shelter-in-place is appropriate.

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Evacuation

- Same as 1992 PAG Manual

  - Primary objective is to avoid exposure by moving away from the path of the plume
  - Can be 100% effective if completed before plume arrival
  - Exposure reduction occurs if evacuation precedes plume passage

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Sheltering

- Use of readily available, nearby structures
- Sheltering decisions should be based on material released and exposure pathway
  - For noble gases, external exposure is the dominant pathway
- Consideration for inhalation pathway
  - Ventilation control
  - Seal cracks and openings
  - Open shelters after plume passage to ventilate

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Potassium Iodide Actions

- FDA recommendations for Early Phase KI administration is a multi-pronged approach:
  - Children 0-18 years: Projected dose to thyroid is 5 rem (50 mSv) or greater
  - Pregnant and lactating women: Projected dose to thyroid is 5 rem (50 mSv) or greater
  - Adults up to 40 years: Projected dose to thyroid is 10 rem (100 mSv) or greater
  - Adults over 40 years: Projected dose to thyroid is over 500 rem (5 Sv) [preventing hypothyroidism]
- EPA proposes a simplified approach:
  - Provide KI to public if 5 rem (50 mSv) child thyroid dose projected
  - This is a supplemental action where evacuation is the primary protection

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Guidance for Emergency Workers

Dose (rem)	Activity	Condition
5	All	None
10	Protecting valuable property	Lower dose not practicable
25	Lifesaving or protection of large populations	Lower dose not practicable
>25	Lifesaving or protection of large populations	Voluntary basis/fully aware of risks

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Dose Conversion Factors

Dose conversion factors (DCFs) are useful for exposure to multiple radionuclides.

$$H = \sum_{1}^{n} DCF_i \times C_i$$

H = Dose
DCF = Dose Conversion Factor for radionuclide i
C = Time-integrated concentration of radionuclide i

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DCP Example

An accident at an industrial facility resulted in the release of radioactive iodine that was dispersed into the atmosphere. A populated area outside of the site boundary experienced the following radionuclide concentrations:

2E-8 μCi/cm^3 Tm-170 DCP = 3.2E+4
4E-9 μCi/cm^3 Cs-134 DCP = 7.6E+4
1E-7 μCi/cm^3 I-131 DCP = 2.7E+4
(DCF in units of rem-cm^3 per h-μCi, Table 2-5 in PAG Manual)

H = (2E-8 x 3.2E+4) + (4E-9 x 7.6E+4) + (1E-7 x 2.7E+4)
= <u>0.004 rem/hr</u>

0.004 rem/hr x 96 hours = <u>0.4 rem</u>

For a four-day exposure period, an evacuation PAG of 1 rem TEDE would not be exceeded.

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Conclusion

Questions or comments on the Early Phase PAGs?

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Break

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Intermediate Phase—Introduction

- Detailed description of proposed PAG revisions
- Exposure pathways
- Relocation and dose reduction
- Dose projection (with calculation examples)
  - External (gamma) exposure
  - Internal exposure (inhalation dose)
- Exposure limits
- Longer term objectives for Intermediate Phase PAGs

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Intermediate Phase

- Period that begins after the source and releases have been brought under control
- Environmental measurements are available as bases for decisions
- May overlap Early and Late Phases
- Exposure pathways are primarily whole body external dose and internal dose from inhalation or ingestion

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Protective Actions

Protective Action Recommendation	PAG (projected dose)	Comments
Relocate the general population	≥ 2 rem (20 mSv) First year	Beta dose to skin may be up to 50 times higher
Apply simple dose reduction techniques	< 2 rem (20 mSv) First year	Reduce doses to as low as practical levels
Longer term objectives	0.5 rem (5 mSv)	In any single year after the first
	≤ 5 rem (50 mSv)	Cumulative dose over 50 years

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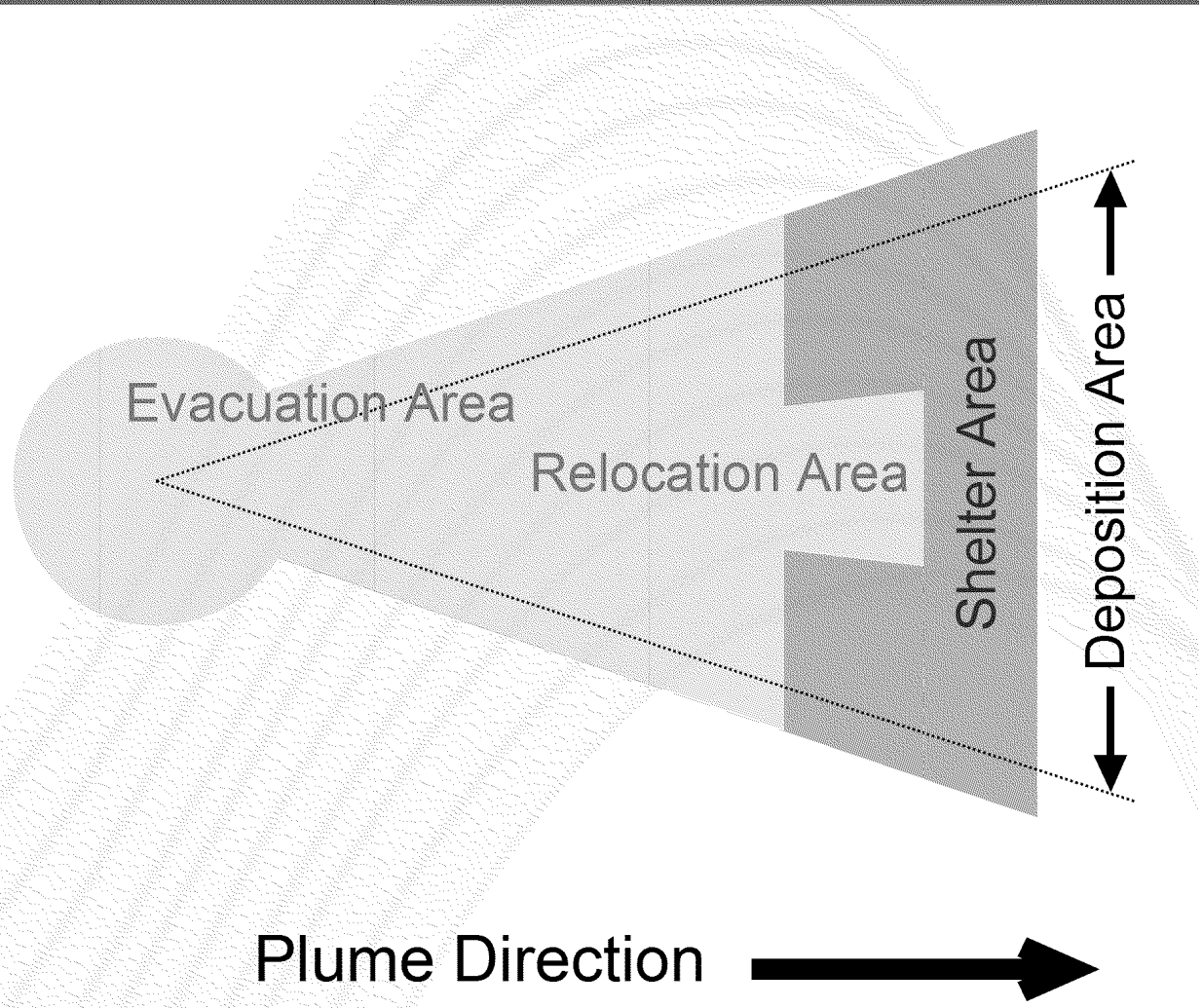
Response Areas

Priorities

- Protect all persons from doses that could cause acute health effects
- Establish a strategy for relocation
- Recommend simple decon techniques and spending as much time indoors as possible



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Sequence of Events

- Identify high dose rate areas
- Relocate population from high dose rate areas
- Allow return of evacuees to noncontaminated areas
- Establish relocation areas
- Establish procedures for reducing exposure of nonrelocated population
- Perform detailed environmental monitoring
- Decontaminate essential facilities and routes
- Begin recovery activities

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Example—Total Dose Due to Deposition

$$TDP_Dp_{E,i,TP} = EDP_{inh,E,TP,i} + ExDP_Dp_{ground,E,i,TP}$$

$TDP_Dp_{E,i,TP}$ = Total Dose Parameter for surface deposition $\left(mrem \cdot m^2 / \mu Ci\right)$

$EDP_{inh,E,i,TP}$ = Effective Dose Parameter for inhalation $\left(mrem \cdot m^2 / \mu Ci\right)$

$ExDP_Dp_{ground,E,i,TP}$ = External Dose Parameter for deposition $\left(mrem \cdot m^2 / \mu Ci\right)$

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External Dose

$$ExDP_Dp_{ground.E.i.TP} = CRP_{i,TP} * ExDF_{ground,E,i}$$

$ExDP_Dp_{ground,E,i,TP}$ = External Dose Parameter for Deposition $\left(mrem \cdot m^2 / \mu Ci\right)$

$CRP_{i,TP}$ = Combined Removal Parameter

$ExDF_{ground,E,i}$ = External Dose Factor for Deposition $\left(mrem \cdot m^2 / \mu Ci\right)$

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Inhalation Dose

$$EDP_{inh,E,i,TP} = CDF_{inh,E,i} * KP_{i,TP}$$

$$EDP_{inh,E,i,TP} = \text{Effective Dose Parameter}\left(mrem \cdot m^2 / \mu Ci\right)$$

$$CDF_{inh,E,i} = \text{Committed Dose Factor}\left(mrem \cdot m^3 / s \cdot \mu Ci\right)$$

$$KP_{i,TP} = \text{Resuspension Parameter}\left(s / m\right)$$

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Example: ^{239}Pu or ^{137}Cs in RDD

What are the total dose parameters for the first year for deposited contamination resulting from the scenarios where an RDD has deposited either ^{239}Pu or ^{137}Cs on a populated area (assume weathering)?

$$TDP_Dp_{E,i,TP} = EDP_{inh,E,TP,i} + ExDP_Dp_{ground,E,i,TP}$$

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Comparison of ^{239}Pu and ^{137}Cs

^{239}Pu

1st year time phase

TDP_Dp =
6.73E-5 mrem per pCi/m^2

<u>Initial Dose Rate</u>

External Exposure Factor =
4.43E-12 mrem/hr per pCi/m^2

^{137}Cs (with ^{137}Ba)

1st year time phase

TDP_Dp =
4.77E-5 mrem per pCi/m^2

<u>Initial Dose Rate</u>

External Exposure Factor =
6.01E-9 mrem/hr per pCi/m^2

Initial dose rate corrected for ground roughness factor

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Total Dose for ^{239}Pu and ^{137}Cs Examples

^{239}Pu

1st year time phase

TDP_Dp =
6.73E-5 mrem per pCi/m^2

Initial Contamination Level =
100 pCi/m^2

Total Dose = 59 mrem

^{137}Cs (with ^{137}Ba)

1st year time phase

TDP_Dp =
4.77E-5 mrem per pCi/m^2

Initial Contamination Level =
100 pCi/m^2

Total Dose = 42 mrem

PAG recommends dose reduction techniques.

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Applying Relocation PAGs

- Creation of a relocation area may result in:
  - Relocation of Early Phase evacuees
  - Relocation of persons not previously evacuated
  - Return of evacuees who reside outside of the relocation area

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Surface Contamination Control

- General guidance
  - Do not allow monitoring and decontamination to delay evacuation
  - If necessary, establish emergency contamination screening stations
  - Establish monitoring and personnel decontamination facilities at evacuation centers
  - Set up monitoring and decontamination stations at exits from the relocation area
  - Establish auxiliary monitoring in low background areas
  - Do not waste effort trying to contain contaminated wash water
- Applies to both Early and Intermediate Phases

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Conclusion

Questions or comments on the Intermediate Phase PAGs?

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Drinking Water and Food PAGs

- Relationship of drinking water and food PAGs to Early, Intermediate, and Late Phases
- Drinking water PAGs
  - Projecting doses using DRLs
  - DRLs for multiple radionuclides
- FDA food PAGs
  - Derived Intervention Levels (DILs) (with calculation)

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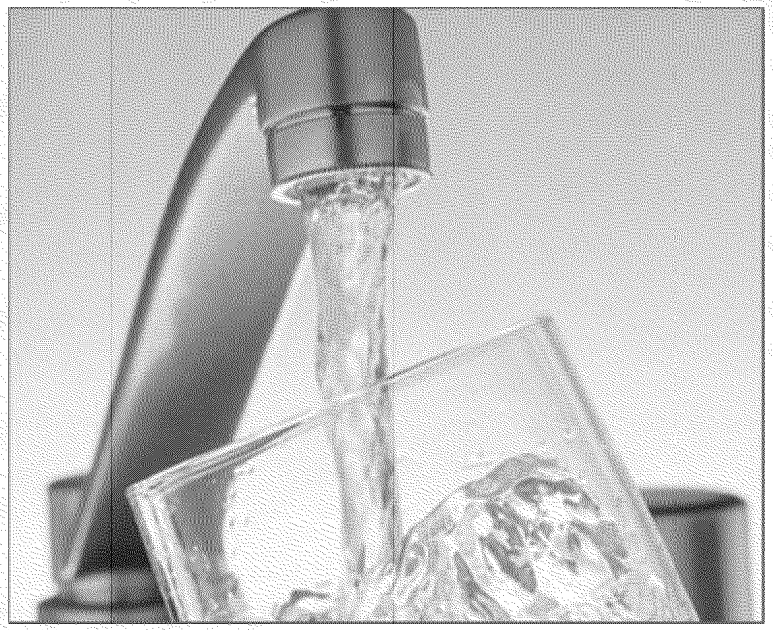
Drinking Water PAG

- Drinking water—0.5 rem (5 mSv) first year committed effective dose equivalent
- Applicable to drinking water from any source
- EPA Safe Drinking Water Standards after first year



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Protective Actions for Water

- Wait for flow-by
- Ration clean water supplies
- Treat contaminated water
- Activate existing connections to neighboring systems
- Establish pipeline connections to closest sources/systems
- Import water in tanker trucks
- Import bottled water

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Projecting Drinking Water Doses

- DRLs are concentrations of radionuclides in water that correspond to a PAG of 0.5 rem in the first year (table of DRLs provided in PAG Manual).

$$F = \sum_{i}^{n} \frac{C_i}{DRL_i}$$

Sum of fractions is used for multiple radionuclides.

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Drinking Water Example

Assume that, as a result of a nuclear power plant accident, a water supply is contaminated as follows:

^{131}I 100,000 pCi/L	DRL	=	406,504 pCi/L
^{137}Cs 12,000 pCi/L	DRL	=	13,850 pCi/L
^{90}Sr 3,500 pCi/L	DRL	=	4,950 pCi/L

$$F = \sum_{i}^{n} \frac{C_i}{DRL_i}$$

$$= (100{,}000 / 406{,}504) + (12{,}000 / 13{,}850) + (3{,}500 / 4{,}950)$$

$$= 0.25 + 0.87 + 0.71$$

$$= 1.83$$

F>1, PAG is exceeded

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Drinking Water PAGs

- Early Phase
  - Public can continue to drink water unless told otherwise
- Intermediate Phase
  - PAG based on optimization of cost and risk and consistency with other guidelines
- Late Phase
  - Protective actions can reduce dose, if actions are warranted after the first year

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Food Dose Projection Resources

- Draft PAG Manual provides radionuclide-specific dose coefficient tables
- Manual provides ICRP values for intake based on age groups
- Manual provides dose coefficient, and DILs reference information from several international organizations

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Projections of Dose from Food

The recommended PAG is either 0.5 rem (5 mSv) committed effective dose equivalent, or 5 rem (50 mSv) committed dose equivalent to individual tissues and organs, whichever is more limiting.

$$DIL = \frac{PAG}{f \times FI \times DC}$$

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Example of Projection of Dose from Food

As the result of an NPP release, ^{90}Sr has been released into a portion of the food supply. What is the DIL for a population that may have to consume contaminated food for 100 days?

$$DIL = \frac{PAG}{f \times FI \times DC}$$

$$= \frac{500mrem}{0.5 \times 300kg \times 1.3E-4mrem/pCi}$$

$$= \frac{500}{2.0E-2}$$

$$= 2.6E4\,pCi/kg$$

If foodborne radionuclide concentrations exceed this value, the PAG is exceeded.

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Drinking Water/Food PAGs

- Drinking water PAG is implemented using EPA's derived response levels (DRLs)
- Food PAG is implemented using FDA's derived intervention levels (DILs)
- DRLs and DILs may vary for the same radionuclide because of how they are derived
- For water intake (via other beverages or food intake), DILs and DRLs can be used together or independently

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Conclusion

Questions or comments on the food or drinking water PAG?

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Break

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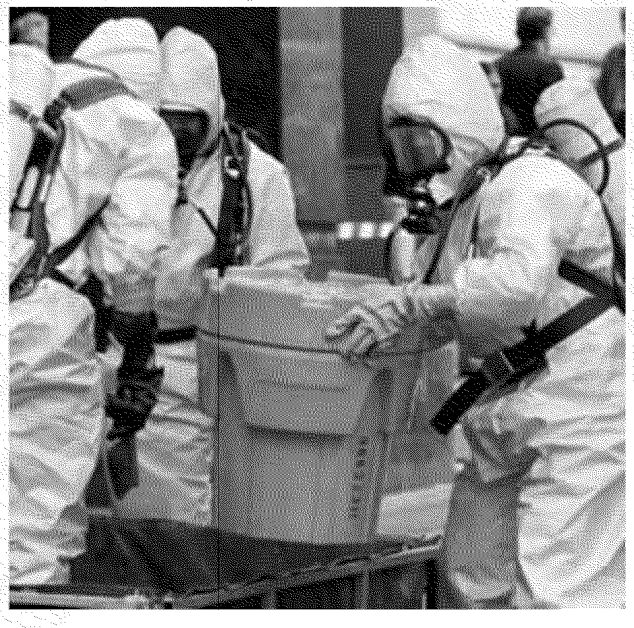
Late Phase

- Cleanup and recovery
- Optimization
  - Descriptions
  - Optimization planning for radiological cleanup
- Resources for demonstrating completion
- Other recovery issues



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Late Phase Goals

- Restoration of incident site to conditions as near as possible to pre-existing—creation of a "new normal"
- Remove contamination
- Eliminate access restrictions
- End food and water controls
- Return population to homes and jobs

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DHS Workgroup

- Addressed recovery and cleanup issues
- Determined that a numeric "cleanup level" was not useful (extreme range of impacts)
- Agreed to optimization approach based loosely on the "Framework for Environmental Health Risk Management" (1997)
- DHS guidance was approved for interim use; EPA and DHS documents will be finalized in parallel

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Optimization Process

- Identify a variety of dose or risk benchmarks identified from state, federal, or other sources
- Use benchmarks as the basis for analyzing various options for remediation
- Establish cleanup goals based on the optimization analysis

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Optimizing for Recovery

- Optimization activities are quantitative and qualitative assessments applied during decision-making
- Optimized exposure levels for recovery may require consideration of net health benefits to the exposed population and society in general
- EPA recommends forming work groups to include:
  - Various technical disciplines
  - Members of the affected population
  - Government agencies
  - Public interest groups

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Factors in the Optimization Process

- Nature of the incident—size, contaminants, location, special consideration items
- Technical feasibility—waste generation and disposal
- Adverse effects of the cleanup activities
- Effectiveness and permanence

- Areas impacted
- Types of contamination
- Other hazards present
- Human health
- Public welfare
- Ecological risks
- Actions already taken
- Projected land use
- Preservation or destruction of significant places
- Technical feasibility
- Wastes generated
- Disposal options
- Applicable resources
- Potential adverse impacts
- Long-term effectiveness
- Timeliness
- Public acceptability
- Economic effects

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Decision-Making Organizations

- Focus on process for reaching consensus: Identify stakeholders in the decision-making process
  - Decision Team
    - Senior federal and state officials
  - Recovery Management Team
    - Senior leadership in the field recovery effort
  - Stakeholder Working Group
    - Federal, state, local business, local nongovernmental representatives, members of the public
  - Technical Working Group
    - Select subject matter experts

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Work Group Expertise Areas

- Health physics and radiation protection
- Environmental fate and transport sciences
- Decontamination technologies
- Radiation measurements
- Site-specific demographics, land uses, and local public works
- Local community needs, wants, and wishes
- Government
- Waste management

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Implementation of Site Restoration Plan

- Develop operational guidelines for specific activities
- Conduct cleanup activities per the plan
- Revisit and revise as conditions dictate

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Recovery Criteria Considerations

- Exposure pathways
  - Direct external exposure (whole body dose)
  - Ingestion
  - Inhalation
- Affected populations include residents and workers
- Reasonable anticipated use of facility or area

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Existing Cleanup Benchmarks

- State environmental departments/programs
  - Usually within risk range of 10^{-4} to 10^{-6}
- NRC Agreement States
  - 25 mrem/yr primary dose constraint (some states are more stringent—down to 10 mrem/yr)
  - 100 mrem/yr allowable exemption
  - ALARA
- NRC and DOE decommissioning programs
  - 25 mrem/yr primary dose constraint
  - 100 mrem/yr allowable exemption
  - ALARA
- EPA Superfund sites
  - risk range of 10^{-4} to 10^{-6}

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Demonstrating Completion

- Several tools are available to assist in determining compliance with specified and agreed-upon cleanup criteria:
  - Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)
  - Methods for Evaluating the Attainment of Cleanup Standards (EPA 230/02-89-042)
  - Soil Screening Guidance for Radionuclides: Technical Background Document (EPA 540-R-00-007)
  - Improving Sampling, Analysis, and Data Management for Site Investigation and Cleanup (EPA 542-F-04-001a)

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Conclusion

Questions or comments on the Late Phase PAG?

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2007 PAG Manual Revision

- Not a substantial change from 1992
- Clarifies the use of PAGs for incidents other than nuclear power plant releases
- Provides drinking water guidance
- Introduces guidance for long-term site restoration
- Updates the dosimetry basis from ICRP 26 to ICRP 60

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Commenting on the Revised PAG Manual

- Availability of revised manual
- Public comment period
- Submission of comments
- Specific areas for requested comments

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Note in the Revised PAG Manual

- New values for DCPs and DRLs are based on ICRP 60.
- EPA encourages the use of electronic tools, such as Turbo FRMAC.
- The drinking water PAG considers only ingestion; other uses (e.g., bathing, washing) are considered under the Intermediate Phase.
- The food PAG chapter is a copy of FDA guidance from 1998; comments on this topic may not be addressed until the next FDA revision

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Note in the Revised PAG Manual

- Late Phase guidance is based on a DHS document from 2006 and introduces optimization.
- Note that “relocation area” replaces “restricted zone” throughout the document.
- Additional language is provided to allow users to choose existing cleanup processes and levels or to employ the optimization process for incidents other than RDDs and INDs.
- DHS issued for interim use its document on applying PAGs to RDD and IND incidents in parallel and changes will be incorporated into the PAG Manual.

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Special Areas for Comment

- Can we further reduce the NPP-specific language to streamline the document?
- Should background information in Appendix C (from 1992) on sheltering be retained as part of the PAG basis?

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Special Areas for Comment

- Would a PAG for re-entry into a relocation area be helpful?
- Should the contamination guidance of 2 X background—for example, contamination rate for monitoring and decontamination at public reception centers—be retained?

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Special Areas for Comment

- Please comment on the usefulness of the drinking water PAG and supporting information.
- Please comment on the usefulness of the discussion in the revised manual on how the food and water PAGs work together.
- Should the food PAG be applied when an incident involves contaminated food and drinking water, and the drinking water PAG be applied to incidents involving only water contamination?

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Special Areas for Comment

- How is the new table of existing radiological cleanup benchmarks useful?
- Please comment on the removal of the “5 rem projected over 50 years” PAG, which was potentially confused with Late Phase/recovery guidance.

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Special Areas for Comment

- Appendices C, D, E, and F contain some old data related to the development of the PAGs; if made available online via the 1992 Manual, can they be cut from this version to streamline the document?
- Please comment specifically on the value of Appendices G and H, which support the Late Phase guidance.

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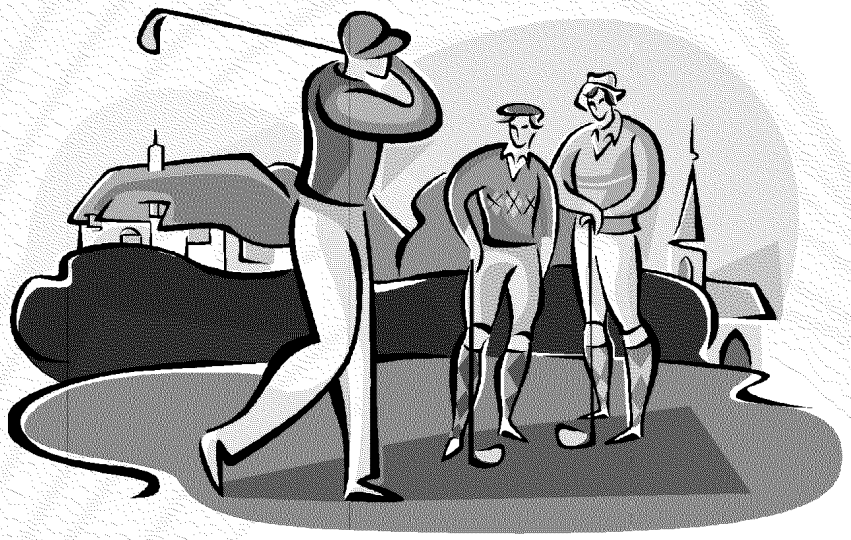
The End

Thank you for your attention!



Enjoy the rest of the day!

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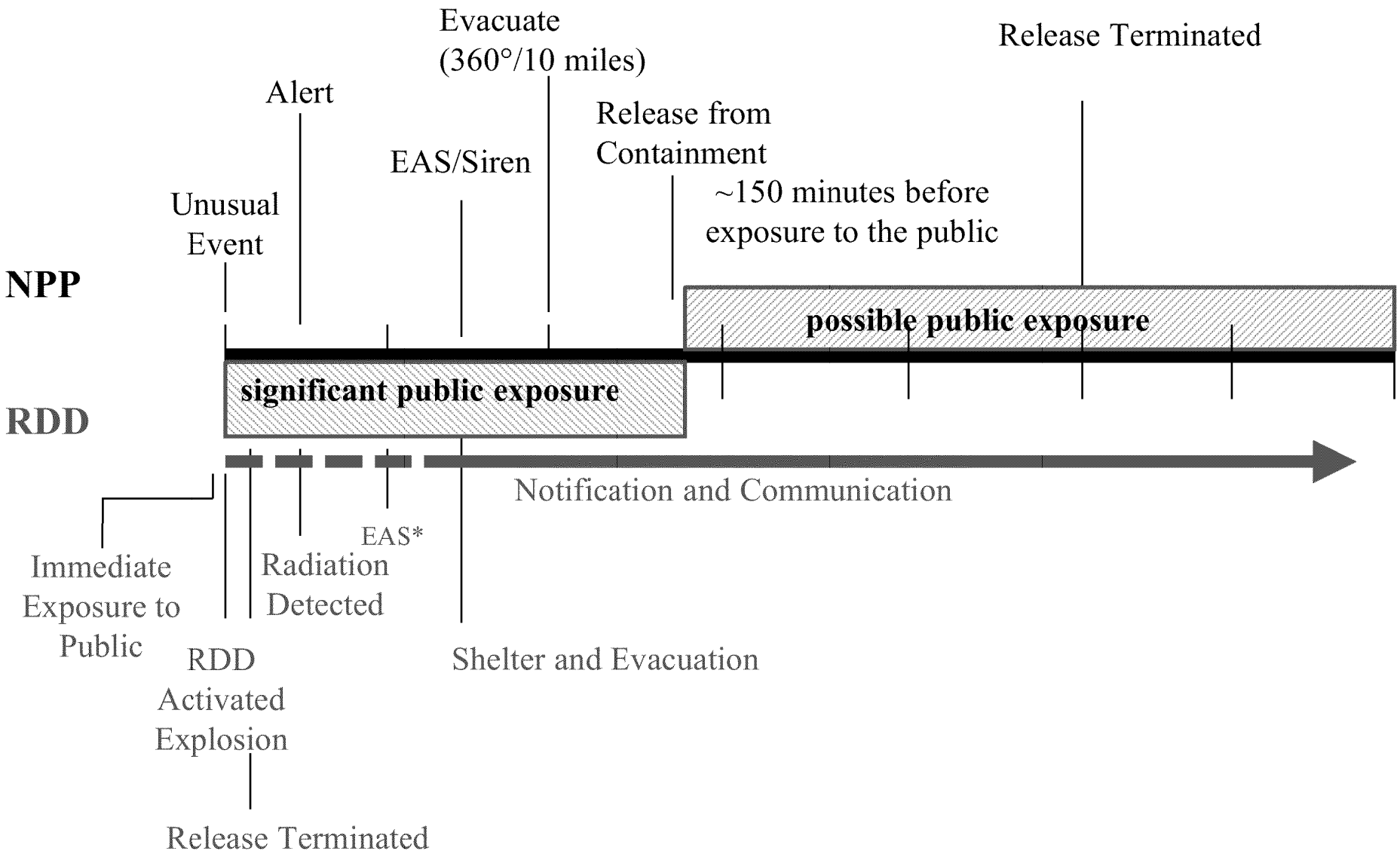

*No Siren For RDD Event

ED_001057_00013110

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Sat 11/22/2014 2:31:28 AM
Subject: Re: PAGs

Like awesomely! Yep :)

Sent from my iPhone

> On Nov 21, 2014, at 7:53 PM, "Perrin, Alan" <Perrin.Alan@epa.gov> wrote:
>
> I hear the DA brief went well; congrats! -adp
> ~~~~~~~~~~~~~
> Alan Perrin, Deputy Director
> Radiation Protection Division
> ofc 202-343-9775
> mbl Ex. 6 - Personal Privacy

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Wed 11/19/2014 1:23:20 PM
Subject: Shall I edit and print? Updated clean version of materials for DA briefing
OW-OAR PAG brief final v2_LC.docx
Background for Deputy Administrator 11_20_14.docx
PAGs 101 11-4-2014.ppt

Alan,

Just checking if there was any feedback from Mike on the briefing materials? Do we know if the material was sent up? I can make the deletion Jon mentions below and print copies for tomorrow's meeting. Thanks!!

S.

From: Edwards, Jonathan
Sent: Friday, November 14, 2014 5:18 PM
To: Flynn, Mike
Cc: Perrin, Alan; Veal, Lee; DeCair, Sara
Subject: FW: Updated clean version of materials for DA briefing

Mike—for your review. Latest versions of PAGs material for the DA briefing. We will update the piece under timeline that says " Joint AA-level briefing for OW and OAR (scheduled for Nov. 5)" since we've already completed that step. Also, I understand that OW sent these materials to the AA today because Ken wanted some time to review them…. --Jon

From: DeCair, Sara
Sent: Friday, November 14, 2014 9:54 AM
To: Perrin, Alan; Veal, Lee; Edwards, Jonathan; Christ, Lisa; Hernandez-Quinones, Samuel
Subject: Updated clean version of materials for DA briefing

Thanks to Lisa for making a few edits to the briefing. Here are all three things to send up for the DA briefing next Thursday.

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Smita Siddhanti[Siddhanti@endyna.com]
From: DeCair, Sara
Sent: Fri 11/14/2014 4:34:47 PM
Subject: RE: Hi from EnDyna

I know, too quiet, right? (Not like me, usually!)

We are briefing up on a new drinking water PAG proposal so we might have the green light to go to OMB (another long quiet spell, often) with it and then go out for public comment.

I'll know more after Nov. 20th so would you want to meet on Nov. 25 or 26? Right before Thanksgiving, I'll be in those two days. Otherwise, after Thanksgiving is good too.

Cheers,

S.

From: Smita Siddhanti [mailto:Siddhanti@endyna.com]
Sent: Friday, November 14, 2014 11:24 AM
To: DeCair, Sara
Subject: Hi from EnDyna

Hi Sara,

Long time.. no hear!

Hope all is well and we will talk soon about moving forward with our assistance on PAGS. Let me know if there is any good time in the next two weeks for me to stop by and meet with you.

Best,

-Smita

Smita Siddhanti, Ph.D.

Program Manager

EnDyna, Inc.

7926 Jones Branch Drive

Suite 620

McLean, VA 22102

Tel: 703 848 8840

Fax: 703 848 9001

www.endyna.com

To: Danielle Murray[dmurray@endyna.com]
From: DeCair, Sara
Sent: Mon 11/10/2014 8:51:21 PM
Subject: Re: Checking-In

Danielle,

You are good to check in! I am fully engaged in internal machinations on a possible additional guideline for drinking water. If we get the green light, it might be ready for OMB review by January, and then we'd hope for a quick review and go to the Federal Register. You all would be on task for compiling comments, on a much smaller scale than last time I think.

Plenty of warning will come first, though, and I will be thrilled if it happens, so we can get this thing done!! Stay tuned, and thanks again for checking in,

Sara

From: Danielle Murray <dmurray@endyna.com>
Sent: Monday, November 10, 2014 2:52 PM
To: DeCair, Sara
Subject: Checking-In

Sara, just checking in on you to ensure all is well with you and PAGS. Let me know if there is anything we can assist with.

Danielle Murray

EnDyna, Inc.
7926 Jones Branch Drive
Suite 620
McLean, VA 22102

dmurray@endyna.com

703-848-8842 ext.103

703-848-9001 (f)

To: Laiche, Thomas P[tlaich@sandia.gov]
From: DeCair, Sara
Sent: Mon 11/10/2014 7:44:47 PM
Subject: Re: Updating EPA PAG Presentation

Hi Tom,

I would only add that the 2013 Manual also provides new guidance on reentry, cleanup and waste management. Those deletions still stand, and we're pretty much done incorporating comments. We're trying to get a drinking water PAG out for comment now, and then will hopefully fold it all up in a final version for next year. Wouldn't that be cool??

Thanks much!

S.

From: Laiche, Thomas P <tlaich@sandia.gov>
Sent: Monday, November 10, 2014 12:35 PM
To: DeCair, Sara
Subject: Updating EPA PAG Presentation

Sara,

Hope all is well in DC.

I'm updating my training presentation regarding the changes to the PAG Manual and wanted to make sure nothing I'm saying contradicts with what's really going on. Below are the major bullets we discuss when referring to the April 2013 manual. Please let me know if I'm misstating anything.

- Applies to all radiological incidents including RDDs and INDs
- Utilizes ICRP 60+ dosimetry model
- References the FRMAC Assessment Manual for calculational methods
- Moved all data tables to the FRMAC Assessment Manual
- References the use of Turbo FRMAC to implement the PAGs
- Incorporates FDA's PAG of 5 rem projected child thyroid dose for administration of stable iodine (KI)
- Removes the 25 rem Adult Thyroid Evacuation PAG
- Removes the 50-year, 5 rem Relocation PAG
- Incorporates FDA's PAGs for food interdiction

I've looked at the Fact Sheet on the EPA's web site and it would seem everything is still correct. I'm

specifically interested in whether the removal of the 25 rem Adult Thyroid Evacuation and the removal of the 5 rem, 50-year Relocation PAGs still stands.

I also mention that the release was April 2013 and that the comment period closed September 2013. However, I would like to update what the current status is. Comment Resolution?

Thanks

Tom

From: DeCair, Sara
Location: WJC North 3412
Importance: Normal
Subject: Accepted: Proposed Drinking Water Protective Action Guides (PAGs) Discussion
Start Date/Time: Thur 11/20/2014 10:00:00 PM
End Date/Time: Thur 11/20/2014 10:45:00 PM

To: Wieder, Jessica[Wieder.Jessica@epa.gov]; Nesky, Anthony[Nesky.Tony@epa.gov]; Lee, Raymond[Lee.Raymond@epa.gov]
From: DeCair, Sara
Sent: Mon 11/10/2014 2:11:07 PM
Subject: Exciting! Green light to get Water PAG FR package together
Messages to consider.docx
PAGs 101 11-4-2014.ppt
OW-OAR PAG brief final.docx
Studies and basis suggestion 10-31-2014.docx

Ex. 5 - Deliberative Process

Sara **Ex. 6 - Personal Privacy**

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Mon 11/10/2014 12:42:19 PM
Subject: Fwd: PAGs Meeting with Deputy Administrator

This is so exciting! I am starting the web mail login process but how should we share this with OW so they are up to speed? I need to call Sam anyway, he never let me know when they'd be done reviewing the edited chapter. They've had it two weeks.

Sent from my iPhone

Begin forwarded message:

From: "Edwards, Jonathan" <Edwards.Jonathan@epa.gov>
Date: November 9, 2014 at 12:38:21 PM EST
To: "Perrin, Alan" <Perrin.Alan@epa.gov>, "Veal, Lee" <Veal.Lee@epa.gov>, "DeCair, Sara" <DeCair.Sara@epa.gov>
Cc: "Gillam, Connie" <Gillam.Connie@epa.gov>, "Stradford, Virginia" <Stradford.Virginia@epa.gov>
Subject: FW: PAGs Meeting with Deputy Administrator

FYI – Emily is getting the invite to Stan's scheduler… things are moving well. --Jon

From: Flynn, Mike
Sent: Friday, November 07, 2014 10:17 AM
To: Atkinson, Emily
Cc: Edwards, Jonathan
Subject: RE: PAGs

Emily,

Thanks for following up on this meeting. This is a joint OAR/OW effort so the meeting should include folks from both offices – suggested invitees are below. And yes it would be very helpful to have this meeting the week of the 17th if at all possible.

OAR:

Janet McCabe

Mike Flynn, Jon Edwards, Lee Veal, Sara DeCair

OW

Ken Kopocis/Mike Shapiro

Peter Grevatt, Eric Burneson, Lisa Christ, Sam Hernandez-Quinones

Thanks, Mike

Mike Flynn, Director

Office of Radiation & Indoor Air

U.S. EPA

202-343-9356

From: Atkinson, Emily
Sent: Friday, November 07, 2014 9:51 AM
To: Flynn, Mike
Cc: Edwards, Jonathan
Subject: RE: PAGs
Importance: High

Hi Mike,

Could you all send me a list of the staff that should be included in this briefing for Stan Meiburg? I would like to get a meeting request down to his office sometime this morning. And my understanding is the briefing needs to happen the week of November 17 – is that right?

Thanks!

Emily

Emily Atkinson
Staff Assistant

Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Flynn, Mike
Sent: Thursday, November 06, 2014 4:25 PM
To: McCabe, Janet
Cc: Atkinson, Emily; Stewart, Lori; Edwards, Jonathan
Subject: RE: PAGs

Sure thing – thanks for moving this forward so quickly.

Mike

Mike Flynn, Director

Office of Radiation & Indoor Air

U.S. EPA

202-343-9356

From: McCabe, Janet
Sent: Thursday, November 06, 2014 3:57 PM
To: Flynn, Mike
Cc: Atkinson, Emily; Stewart, Lori
Subject: FW: PAGs

Gina's good with us moving forward on this and is happy to have Stan handle from the OA perch. Can your folks work on getting a briefing scheduled with him so we can bring him up to speed and get him comfortable with our next steps?

Thanks.

From: Kopocis, Ken
Sent: Thursday, November 06, 2014 2:45 PM
To: McCabe, Janet
Subject: RE: PAGs

Yes. Socializing Stan to issues/actions is something he is very interested in.

From: McCabe, Janet
Sent: Thursday, November 06, 2014 2:31 PM
To: Kopocis, Ken
Subject: RE: PAGs

Great, thanks….

I mentioned this to Gina, and she's fine with Stan being the AO contact for us on this. I think we should get a briefing on his calendar—do you agree?

From: Kopocis, Ken
Sent: Thursday, November 06, 2014 12:20 PM
To: McCabe, Janet
Subject: RE: PAGs

Yes, I confirmed with Mike and we are on board.

Ken

From: McCabe, Janet
Sent: Thursday, November 06, 2014 7:49 AM
To: Kopocis, Ken
Subject: PAGs

Ken--we had a good meeting on the proposed drinking water PAG yesterday, and Mike and Peter said you were on board with the recommendation and recommended path forward. I just wanted to check with you and confirm that. If you agree, I'll plan to give Gina a heads up and a chance to weigh in, since she was so involved with this in her prior life. I will also let Stan know.

thanks!

To: Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]; Jessica Wieder[Wieder.Jessica@epa.gov]
From: DeCair, Sara
Sent: Tue 11/4/2014 8:11:02 PM
Subject: FYI, here are briefing materials...
PAGs 101 11-4-2014.ppt
OW-OAR PAG brief final.docx

Just FYI, these briefing materials are in use this week. Also, the proposed chapter language is over at OW for review, and I hope to ask them tomorrow how they're coming with that.

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Telofski, Scott[telofski.scott@epa.gov]
From: DeCair, Sara
Sent: Mon 11/3/2014 10:29:05 PM
Subject: RE: New drinking water PAG chapter for your review

Thanks for providing these comments! I think once OW has a method and assumptions that have been further vetted, we'll ask FRMAC to turn the crank in the future, so we get to set their method for water… if I can ever get it briefed up through everyone important. That is this week's task…

Then we can push/pull on the methods and get them right – OW has a contractor working on this but I'm sure the PAG Subcommittee will have an opinion or two. Stay tuned!

From: Telofski, Scott
Sent: Wednesday, October 29, 2014 10:49 AM
To: DeCair, Sara
Subject: RE: New drinking water PAG chapter for your review

Some thoughts …

From: DeCair, Sara
Sent: Tuesday, October 28, 2014 12:27 PM
To: Hernandez-Quinones, Samuel; Ellis, Jerry; Christ, Lisa; Veal, Lee; Perrin, Alan; Edwards, Jonathan; Nesky, Anthony
Subject: New drinking water PAG chapter for your review

All;

This has been through Tony's editing and Alan's review in our office and is ready for review by our colleagues in Water. I left a few of the comments in for your consideration. Please take your time to evaluate the order and content here, and if you would, provide feedback to me in the form of comments or redline/strikeout. If you let me know when you'll be done with this round of review, I can update my PAGs project plan accordingly. Thank you,

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Fri 10/31/2014 5:44:16 PM
Subject: A couple ideas from the studies and my PAG basis lingo that I've been working on
Studies and basis suggestion 10-31-2014.docx

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Fri 10/31/2014 4:53:38 PM
Subject: Mostly cleaned up briefing
All done.JPG
Joint AAs Briefing 10-31-2014_cleaned up.docx

Ex. 5 - Deliberative Process

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Ex. 6 - Personal Privacy @gmail.com[Ex. 6 - Personal Privacy @gmail.com]
From: DeCair, Sara
Sent: Thur 10/30/2014 5:55:32 PM
Subject: FW: Water PAGs Talking Points

Sara,

Here are some talking points to consider:

Ex. 5 - Deliberative Process

Jessica Wieder

U.S. EPA

Radiation Protection Program

Acting Director, Center for Radiation Information and Outreach

w: 202-343-9201

c: Ex. 6 - Personal Privacy

To: Jessica Wieder[Wieder.Jessica@epa.gov]; Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]
From: DeCair, Sara
Sent: Thur 10/30/2014 2:19:39 PM
Subject: Latest Water PAG briefing and draft Chapter
Joint AAs Briefing 10-30-2014_cleaned up version with cmts.docx
Draft Chapter Drinking Water PAG 10-28-2014.docx

So this briefing just underwent a big edit by OW, but I only have a few spots where I'm nervous on it. Lee, Alan and Jon are reviewing this now and we have a meeting with Mike Flynn tomorrow morning on it.

The draft chapter was edited by Tony, then Alan, and is now back over to OW for review… talk to you at 11, thanks,

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Honnellio, Anthony[Honnellio.Anthony@epa.gov]
From: DeCair, Sara
Sent: Tue 10/28/2014 8:18:34 PM
Subject: RE: Hi Sara, could you send me the latest PPT on the PAGs?
Outreach to FRPCC talking points 9-22-2014.docx

Ex. 5 - Deliberative Process

-----Original Message-----
From: Honnellio, Anthony
Sent: Monday, October 27, 2014 9:26 AM
To: DeCair, Sara
Subject: Hi Sara, could you send me the latest PPT on the PAGs?

Ex. 5 - Deliberative Process

Sent from my iPhone

To: Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]
From: DeCair, Sara
Sent: Mon 10/27/2014 6:49:04 PM
Subject: Alan's big comment: pag draft
Draft Chapter Drinking Water PAG-edited_adp.docx

Ex. 5 - Deliberative Process

Thx,

S.

From: Perrin, Alan
Sent: Friday, October 24, 2014 3:32 PM
To: DeCair, Sara
Subject: pag draft

Ex. 5 - Deliberative Process

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

To: Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]
From: DeCair, Sara
Sent: Fri 10/17/2014 7:47:55 PM
Subject: FW: I think you are my next reviewer...
Draft Chapter Drinking Water PAG-edited.docx

Ex. 5 - Deliberative Process

From: DeCair, Sara
Sent: Friday, October 17, 2014 3:34 PM
To: Perrin, Alan
Subject: I think you are my next reviewer...

Ex. 5 - Deliberative Process

Thank you!

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Fri 10/17/2014 7:33:41 PM
Subject: I think you are my next reviewer...
Draft Chapter Drinking Water PAG-edited.docx

Ex. 5 - Deliberative Process

Thank you!

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Rosenblum, Shelly[Rosenblum.Shelly@epa.gov]
From: DeCair, Sara
Sent: Wed 10/15/2014 8:49:31 PM
Subject: Fw: Using the Rad EP Toolbox
Using the Rad EP Toolbox - R0.pptx

From: Melody Geer Ex. 6 - Personal Privacy
Sent: Thursday, September 25, 2014 6:54 PM
To: Wilds, Edward; Brozowski, George; Mosser, Jennifer; Ralston, Lowell; Aquino, Marcos; Melody Geer; Povetko, Oleg; Ferguson, Rafaela; DeCair, Sara; Rosenblum, Shelly
Cc: dstuenkel@trininc.com
Subject: PPT: Using the Rad EP Toolbox

Team: Attached is the PPT for Using the Rad EP Toolbox. Sara felt that this would be a better use of time for the RERT Liaisons and Advisors than a refresher on the TurboFRMAC reports. David Stuenkel, from TEA, will be assisting Sara in the presentation of this session.

As always, please click through the PPT as a slideshow (so that you can see the animations) and also look at the notes. Please review and send comments ASAP!

Thanks,

Melody Geer

Program Manager, TEA

Ex. 6 - Personal Privacy

mgeer@trininc.com

980-241-2724

To: Tony Nesky (nesky.tony@epa.gov)[nesky.tony@epa.gov]
From: DeCair, Sara
Sent: Thur 9/25/2014 8:57:50 PM
Subject: Your tech edit challenge is upon you!
Draft Chapter Drinking Water PAG 9-16-2014.docx
Joint Briefing Edwards-Burneson 9-25-2014.docx

Ex. 5 - Deliberative Process

I'm going to walk the markup I've made over to you, in case it is helpful…. See you soon!

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Rae, Renelle[Rae.Renelle@epa.gov]
From: DeCair, Sara
Sent: Mon 9/22/2014 8:11:05 PM
Subject: Here is the list of updated refs for PAGs that I have
Literature Review_2.28.2014.xlsx

I'm sorry I took so long to get this to you! It's been on my list... it's not exhaustive but was the contractor's first cut on internet searching for updated versions of things we may refer to in our final version.

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: kweitzel@projectenhancement.com[kweitzel@projectenhancement.com]; Corredor, Carlos[Carlos.Corredor@Hq.Doe.Gov]; 'Favret, Derek'[Derek.Favret@Hq.Doe.Gov]
From: DeCair, Sara
Sent: Thur 9/4/2014 7:44:04 PM
Subject: Comments on Ch. 9
Chapter 9 OGT Manual S cmts.docx

I'll have to get back to you after I learn more about whether we might be able to cite something other than the 4 mrem/year for a low end from Superfund's perspective. I am not overly hopeful, but I'll try!

Meantime, see attached my other comments that I hope are helpful. Cheers, thank you,

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

To: Vanhorne-Sealy, Jama[jama.vanhorne-sealy@usuhs.edu]
From: DeCair, Sara
Sent: Fri 8/29/2014 7:08:54 PM
Subject: RE: Talk about risk numbers fix in IND Guide
IND Guide with Edited Risk Tables and 8-1 footnote by Sara.docx

Jama,

Ex. 5 - Deliberative Process

Sara

From: Vanhorne-Sealy, Jama [mailto:jama.vanhorne-sealy@usuhs.edu]
Sent: Thursday, August 28, 2014 9:12 AM
To: DeCair, Sara
Subject: Re: Talk about risk numbers fix in IND Guide

Sara,

Ex. 5 - Deliberative Process

Let me know if you have any questions.

Thanks again, Jama

MAJ Jama VanHorne-Sealy, MS
Asst Prof, Preventive Medicine & Biometrics
Uniformed Services University of the Health Sciences
Bethesda, MD
Office: 301-295-3390
BB: 240-281-3632

Radiation Health Advisor
Office of Health Affairs
Department of Homeland Security
Office: 202-254-6452
BB: 202-302-2897

On Wed, Aug 27, 2014 at 8:16 AM, DeCair, Sara <DeCair.Sara@epa.gov> wrote:

Ex. 5 - Deliberative Process

From: Vanhorne-Sealy, Jama [mailto:jama.vanhorne-sealy@usuhs.edu]
Sent: Wednesday, August 27, 2014 8:15 AM
To: DeCair, Sara

Subject: Re: Talk about risk numbers fix in IND Guide

Sara,

Ex. 5 - Deliberative Process

Thursdays I am at 301-295-3390.

MAJ Jama VanHorne-Sealy, MS
Asst Prof, Preventive Medicine & Biometrics
Uniformed Services University of the Health Sciences
Bethesda, MD
Office: 301-295-3390
BB: 240-281-3632

Radiation Health Advisor
Office of Health Affairs
Department of Homeland Security
Office: 202-254-6452
BB: 202-302-2897

On Tue, Aug 26, 2014 at 5:28 PM, DeCair, Sara <DeCair.Sara@epa.gov> wrote:

Ex. 5 - Deliberative Process

To: Nelson, Neal[Nelson.Neal@epa.gov]
From: DeCair, Sara
Sent: Fri 8/29/2014 6:26:30 PM
Subject: PAG Manual in Word
PAG Manual clean version 4-2-2013.docx

Thank you for making suggestions!

(You'll notice it's the 'clean version' – no swear words??)

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

1200 Pennsylvania Ave., NW

Washington, D.C.

To: Perrin, Alan[Perrin.Alan@epa.gov]
From: DeCair, Sara
Sent: Wed 8/13/2014 8:14:09 PM
Subject: E-Manual
Redline PAG Manual 8-11-2104.docx

I assume you're working on a snazzy cover?

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

1200 Pennsylvania Ave., NW

Washington, D.C.

To: Danielle Murray[dmurray@endyna.com]
From: DeCair, Sara
Sent: Fri 8/8/2014 7:01:13 PM
Subject: 3 (easy!) changes to PAG Manual
Redline PAG Manual 8-6-2014.docx
Language to add on Basis, FRC, 50yr, subpops 8-8-2014.docx
KI Wording for Sara_7.3.14.docx

Ex. 5 - Deliberative Process

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

new office

Room 1416 B in WJC West

1200 Pennsylvania Ave., NW

Washington, D.C.

To: Sincek, Jeffrey[Jeffrey.Sincek@fda.hhs.gov]; Hargrave, Scotty L[Scotty.Hargrave@fda.hhs.gov]; gyf7@cdc.gov[gyf7@cdc.gov]; Smallwood, Karen R[Karen.Smallwood@fda.hhs.gov]; ATeam-CLEVELAND, GORDON[GORDON.S.CLEVELAND@APHIS.USDA.GOV]; ATeam-DENNISON, KEVIN[KEVIN.M.DENNISON@APHIS.USDA.GOV]; Anderson, Jeri L. (CDC/NIOSH/DSHEFS)[jva2@cdc.gov]
From: DeCair, Sara
Sent: Wed 7/23/2014 8:38:21 PM
Subject: VR 14 Exercise: draft A Team summary from yesterday - any suggestions?
7-22-2014 A Team Vibrant Response Daily Log.doc

Just a quick look so I can send this up?

S.

This is an exercise

To: Eugene Jablonowski[Jablonowski.Eugene@epa.gov]
From: DeCair, Sara
Sent: Thur 7/10/2014 2:59:43 PM
Subject: FW: Health and Safety Planning Guide for IND - not yet final
IND Guide June 2014-Edited 26 Jun 2014.docx

Ex. 5 - Deliberative Process

From: Ferris, John
Sent: Thursday, June 26, 2014 5:18 PM
To: Stahle, Susan
Cc: Veal, Lee; DeCair, Sara
Subject: Fw: Health and Safety Planning Guide for IND - Final

Ex. 5 - Deliberative Process

No problem

John
John Ferris, Environmental Engineer
Environmental Protection Agency
(202) 564-1347
Ferris.John@epa.gov

From: Vanhorne-Sealy, Jama <jama.vanhorne-sealy@hq.dhs.gov>
Sent: Thursday, June 26, 2014 4:05:31 PM
To: MacKinney, John A; Koerner, John (John.Koerner@hhs.gov); Ferris, John; Hornsby-Myers, Jennifer (CDC/NIOSH/OD) (ezh7@cdc.gov) (ezh7@cdc.gov)
Cc: Hunt, Richard (Richard_C_Hunt@nss.eop.gov); King, Heather (Heather_C_King@nss.eop.gov); Greene, Jonathan; jama.vanhorne-sealy@usuhs.edu
Subject: RE: Health and Safety Planning Guide for IND - Final

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thank you, Jama

MAJ Jama VanHorne-Sealy

Radiation Health Advisor

Office of Health Affairs

Department of Homeland Security

Office: 202-254-6452

BB: 202-302-9897

From: Vanhorne-Sealy, Jama
Sent: Thursday, June 26, 2014 2:23 PM
To: MacKinney, John A; Koerner, John (John.Koerner@hhs.gov); Ferris, John (Ferris.John@epa.gov) (Ferris.John@epa.gov); Hornsby-Myers, Jennifer (CDC/NIOSH/OD) (ezh7@cdc.gov) (ezh7@cdc.gov)
Cc: Hunt, Richard (Richard_C_Hunt@nss.eop.gov); King, Heather (Heather_C_King@nss.eop.gov); Greene, Jonathan
Subject: RE: Health and Safety Planning Guide for IND - Final

Ex. 5 - Deliberative Process

Thank you, Jama

MAJ Jama VanHorne-Sealy

Radiation Health Advisor

Office of Health Affairs

Department of Homeland Security

Office: 202-254-6452

BB: 202-302-9897

To: Sara DeCai Ex. 6 - Personal Privacy
From: DeCair, Sara
Sent: Tue 7/1/2014 5:37:54 PM
Subject: Fw: Edited -- simplification of KI guide
FINAL EDITS 007_6.27.14.xlsx

From: Danielle Murray <dmurray@endyna.com>
Sent: Saturday, June 28, 2014 8:02:56 AM
To: DeCair, Sara
Subject: RE: Edited -- simplification of KI guide

Ex. 5 - Deliberative Process

Danielle Murray

Operations and HR Analyst

EnDyna, Inc.
7926 Jones Branch Drive
Suite 620
McLean, VA 22102

dmurray@endyna.com

703-848-8842 ext.103

703-848-9001 (f)

From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Thursday, June 26, 2014 8:50 AM
To: Noska, Michael A
Cc: Danielle Murray
Subject: RE: Edited -- simplification of KI guide

Thanks so much, Mike!

Ex. 5 - Deliberative Process

Sara

From: Noska, Michael A [mailto:Michael.Noska@fda.hhs.gov]
Sent: Wednesday, June 25, 2014 6:34 PM
To: DeCair, Sara
Cc: Danielle Murray
Subject: RE: Edited -- simplification of KI guide

Sara,

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Mike

Michael A. Noska, M.S.
Captain, USPHS
Radiation Safety Officer and Senior Advisor for Health Physics
Employee Safety and Environmental Management Staff
Office of the Commissioner/Office of Operations
Food and Drug Administration
301-796-8313 (Office)

240-402-9998 (Rad Safety Office)
301-526-7956 (Cell)

From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Wednesday, June 25, 2014 1:04 PM
To: Noska, Michael A
Cc: Danielle Murray

Subject: Edited -- simplification of KI guide

Mike,

Ex. 5 - Deliberative Process

Thanks!!

Sara

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

From: Noska, Michael A [mailto:Michael.Noska@fda.hhs.gov]
Sent: Friday, May 16, 2014 5:30 PM
To: DeCair, Sara
Subject: RE: Added simplification of KI guide?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Mike

Michael A. Noska, M.S.
Captain, USPHS
Radiation Safety Officer and Senior Advisor for Health Physics
Employee Safety and Environmental Management Staff
Office of the Commissioner/Office of Operations
Food and Drug Administration
301-796-8313 (Office)

240-402-9998 (Rad Safety Office)
301-526-7956 (Cell)

From: DeCair, Sara [mailto:DeCair.Sara@epa.gov]
Sent: Thursday, May 15, 2014 4:38 PM
To: Noska, Michael A
Subject: Added simplification of KI guide?

Mike,

Ex. 5 - Deliberative Process

Thanks!!

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

To: Anoma, Valentine[Anoma.Valentine@epa.gov]; Snead, Kathryn[Snead.Kathryn@epa.gov]
From: DeCair, Sara
Sent: Wed 6/11/2014 7:19:04 PM
Subject: Could you review this cost-benefit Work Assignment?
IGCE OPT PER 3 for Trinity PAG Cost Benefit Prelim Analysis 6-11-2014.xls
WA Cost-Benefit Preliminary Analysis 6-11-2014.doc

Val, Kathryn,

Ex. 5 - Deliberative Process

Sara

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

To: Nanko, Lisa[Nanko.Lisa@epa.gov]
From: DeCair, Sara
Sent: Wed 6/4/2014 7:47:25 PM
Subject: Long training ppt on PAGs
PAGs Workshop 2007.ppt

This was a four-hour workshop at one time, for our state friends to attend. It has speaker notes (out the wazoo!) and might be very handy reading for Peter.

S.

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

To: Forinash, Betsy[Forinash.Betsy@epa.gov]
From: DeCair, Sara
Sent: Mon 6/2/2014 8:28:48 PM
Subject: RE: PAGs talking points for NARR?
Outreach to NARR 6-2-2014.docx

Ex. 5 - Deliberative Process

Sara

From: Forinash, Betsy
Sent: Monday, June 2, 2014 12:46 PM
To: DeCair, Sara
Subject: RE: PAGs talking points for NARR?

Ex. 5 - Deliberative Process

From: DeCair, Sara
Sent: Monday, June 2, 2014 12:46 PM
To: Forinash, Betsy
Subject: Re: PAGs talking points for NARR?

Ex. 5 - Deliberative Process

From: Forinash, Betsy
Sent: Monday, June 2, 2014 12:36:29 PM
To: DeCair, Sara
Subject: PAGs talking points for NARR?

Hey Sara,

Ex. 5 - Deliberative Process

Thanks,

Betsy

To: Danielle Murray[dmurray@endyna.com]
Cc: siddhanti@endyna.com[siddhanti@endyna.com]
From: DeCair, Sara
Sent: Thur 5/29/2014 8:34:07 PM
Subject: Changes to redline Manual needed
Sara update Potassium Iodide Tab 5-18-2014.xlsx
PAG Manual Redline Sara cmts 5-14-2014.docx

Ex. 5 - Deliberative Process

Sara D. DeCair

http://www.epa.gov/radiation/rert/pags.html

202-343-9108

To: Veal, Lee[Veal.Lee@epa.gov]
From: DeCair, Sara
Sent: Wed 5/21/2014 1:59:42 PM
Subject: Re: files to send to OW

Ex. 5 - Deliberative Process

Thank you!
Sara

From: Veal, Lee
Sent: Wednesday, May 21, 2014 8:45:22 AM
To: DeCair, Sara
Subject: files to send to OW

Sara,

Ex. 5 - Deliberative Process

Lee

Lee Ann B. Veal

Director, Center for Radiological Emergency Management

Radiation Protection Division, ORIA, OAR

Office: 202-343-9448

Cell: 202-617-4322

www.epa.gov/radiation