ROSS Quarterly Call

31 March 2025

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CRCPD

Agenda

- Welcome from FEMA Office of Emerging Threats (OET) Branch Chief and ROSS Program Manager – Jon Gill, PhD and Jeramie Calandro
- Welcome from CRCPD ROSS Program Manager – Bill Irwin, ScD, CHP, FEMA Type 1 ROSS
- ROSS assistance to Radiation Response Volunteer Corps – Adela Salame-Alfie, PhD, FEMA Type 1 ROSS
- Deep Dive Training: The FDA Water Protective Action Guideline (PAG) – Matt McKinley, FEMA Type 1 ROSS
- Cobalt Magnet Initial Review
- Closing Remarks – FEMA OET

FEMA Office of Emerging Threats

Welcome and Opening Remarks

Jon Gill & Jeramie Calandro

Source: GAO. | www.gao.gov

https://www.gao.gov/products/gao-19-164 accessed 2/23/23.

FEMA OET Updates

- Leadership discussion on ROSS Program
  - Internal changes to the ROSS Program
  - Upcoming changes on the horizon
  - VEST and CTOS

- Current Focus
  - Transferring MissionEdge activities to Jeramie Calandro
  - Outlining contingency options

Welcome from CRCPD Homeland Security/Emergency Response Committee 4 (HS/ER-4)

Bill Irwin, ScD, CHP, FEMA Type 1 ROSS, CRCPD ROSS Program Manager

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Questions? william.Irwin@vermont.gov

Welcome to 2025!

- The big deal this quarter is Cobalt Magnet 25.
  - We originally thought we would have 22 ROSS playing. Ten virtually for the CDC and twelve in Michigan and Ontario.
  - The CDC stood tall for our ROSS, and thankfully, three ROSS got their agency to pay for their travel, one ROSS took the fork in the road to join us as a player, and Canada and the CRCPD got two more into Toronto.
- There were also a whole bunch of ROSS playing in their jurisdictional roles in Michigan, Ohio, Indiana, Georgia and Ontario.
- More were working as controllers at the FRMAC and Main Control Cell.
- We are going to have a session devoted to CM25 today. I want to thank all of you who volunteered to work for CM25!

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There is a lot more to share, too, though: Tabletop exercises

- We are excited that the Department of Energy's Office of Radiological Security is funding ROSS travel to their Radiological Security Awareness and Response exercises (RSARex).
  - Karen Flannigan of New Jersey and Aaron Beemer of Iowa went to UPenn RSARex March 24
  - We have two more scheduled for April for the Philadelphia Police and the Illinois State Police
- We continue to have Silent Thunder and CURRIE exercise opportunities as well.
  - Paul Schmidt and Kevin Chambers attended CURRIE Oshkosh last week.
- We are also anxiously awaiting the Virtual Evaluation Scenario Tool which should allow completing dozens of PTB tasks with each

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We continue to await the VEST

- We are also anxiously awaiting the Virtual Evaluation Scenario Tool which should allow completing dozens of PTB tasks with each.
- The IND VEST was first piloted by Lawrence Livermore National Laboratory, the CRCPD and a dozen ROSS in the summer of 2021.
- Hopefully, CTOS will have it out for use in 2025.

2021 VEST Pilot Class: 10kT in DC

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May be exempt from public release under the Freedom of Information Act (5 U.S.C 552), exemption and category:
Exemption #7 – Law Enforcement
Department of Energy review required before public release
Date: 12/21/2020
Name/org: Michael Dillon/LLNL
Guidance: N/A

Partnerships are critical to our success: Another is with the CDC

- The CDC will be training ROSS in a train-the-trainer course this summer for their Public Health Decision-makers Training.
  - After practice teaching with the current contractors, ROSS will teach the course regionally across the country.
- We are in the early planning for ROSS to assist state and local Radiation Emergency Response Corps volunteers
  - Adela will talk more about this next.

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

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Providing you training is a top priority: Deep dive training

- On each quarterly call we will share a deep dive into various subjects
  - Matt McKinley is kicking off this quarter with one on the drinking water protective action guidelines.
  - Angela Leek will train on the CBRNResponder Thresholds created by the CRCPD E-43 Committee in June.
  - I will present on emergency response dosimetry in September.
  - Nancy Stanley will present on population monitoring in December.
- If you would like to give a deep dive training on RASCAL, TurboFRMAC, nuclear power plants, nuclear detonations, RDDs, etc., please contact Matt McKinley and Adela Salame-Alfie.

We are working on a survey to learn what deep dive training you would like.

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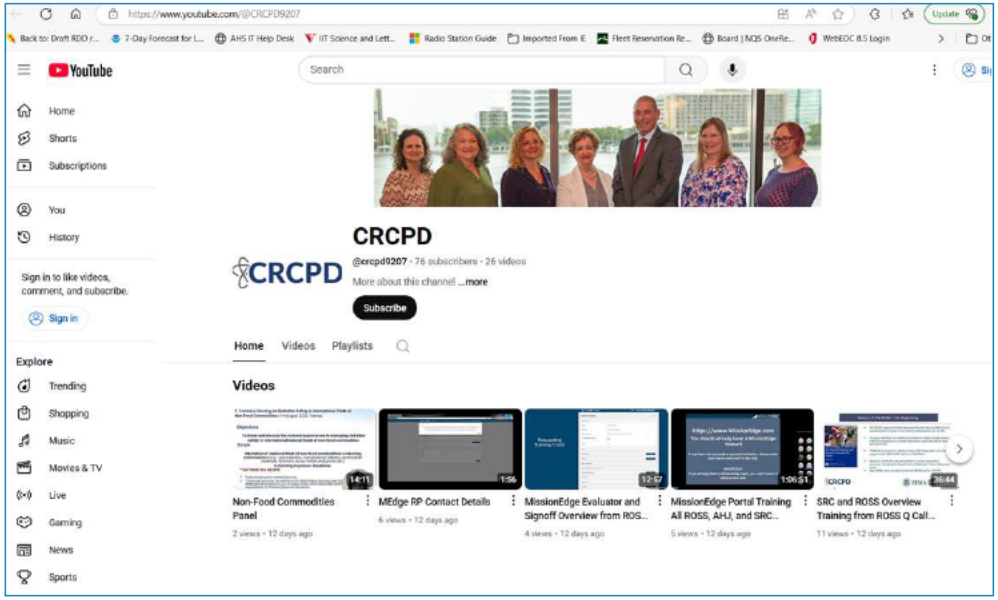
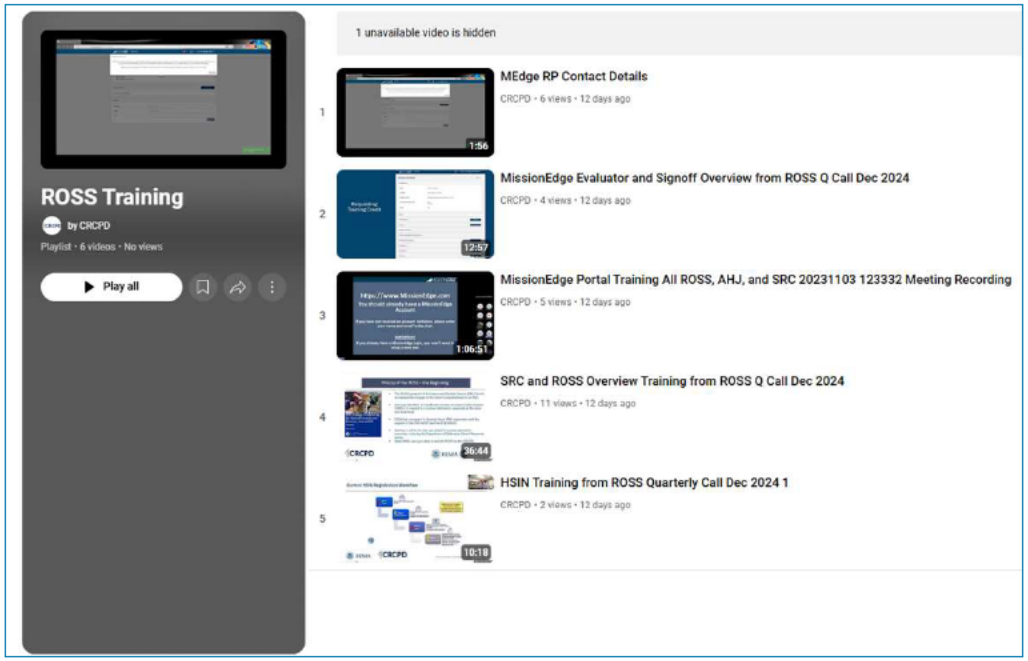
Providing you training is a top priority: YouTube Videos

- Angela Leek and Stephan Brown have populated the CRCPD YouTube Channel with new ROSS orientation and state ROSS Coordinator and AHJ training videos.





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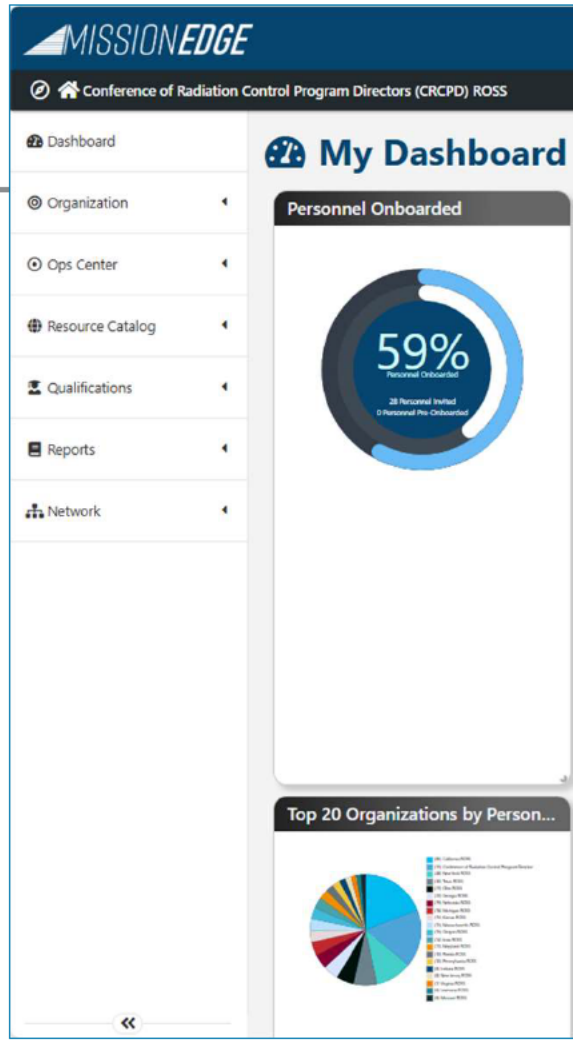
Helping you advance in your PTB is also a top priority

- We have trained about 525 people using the initial ROSS training course.
- This allows someone to become a Type 4 ROSS.
- Some are happy with Type 4, and that is fine.
- Our mission, however, requires at least one Type 1 and multiple Type 2 and 3 ROSS in every state.
- Over the years, we have shown you many ways to obtain historical recognition for past training, experience and exercises.
- We have found a key to successful advancement is developing a personal relationship with your evaluator(s).



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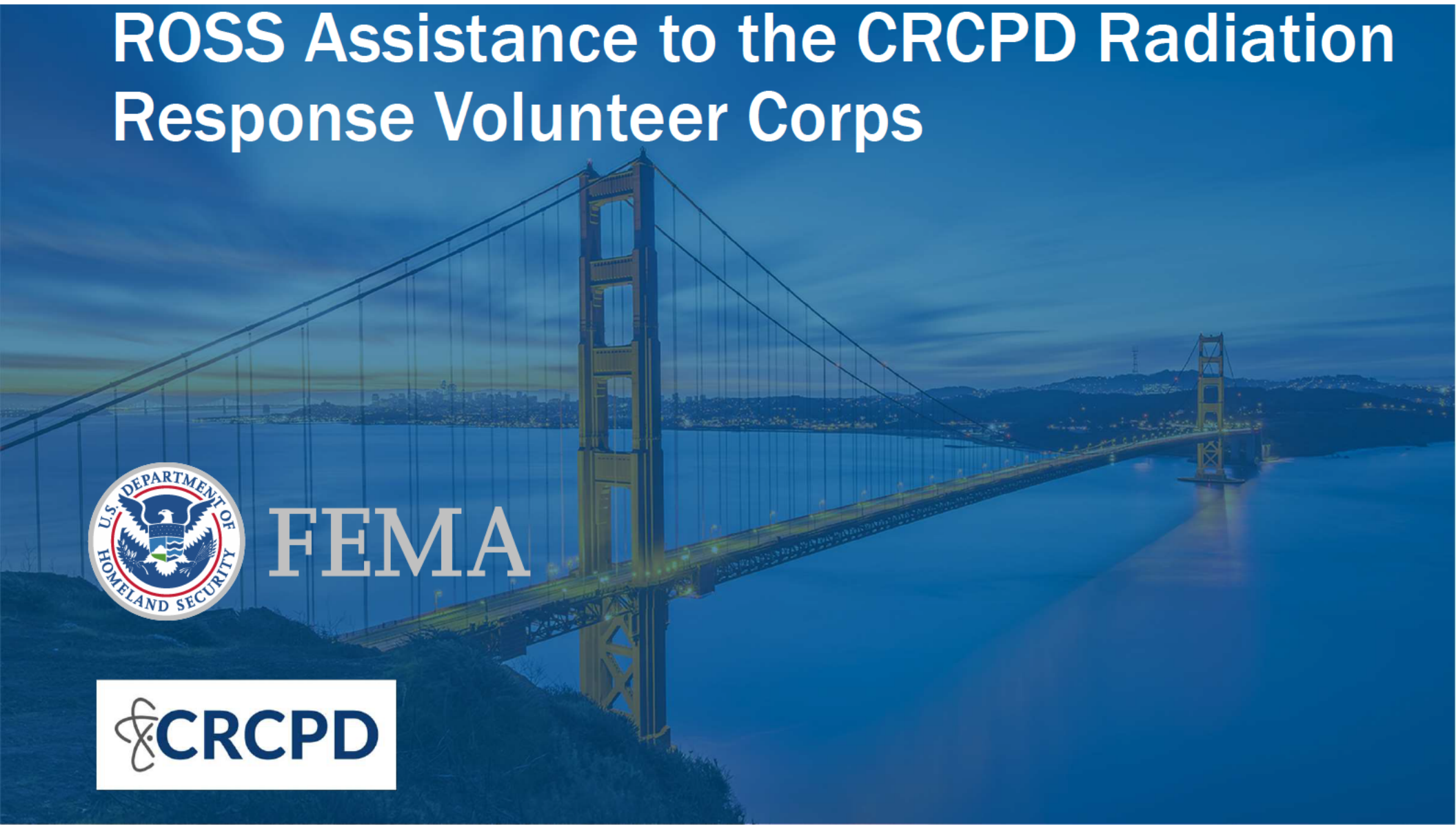
ROSS Assistance to the CRCPD Radiation Response Volunteer Corps



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RADIATION RESPONSE VOLUNTEER CORPS (RRVC)

Brief Update from CRCPD HS-ER 19 Task Force and a Discussion About Partnering with the ROSS

March 31, 2025

Overview – Discussion Topics

- History of RRVC
  - What is it
  - What did we accomplish
- CRCPD HS/ER19 Charges
  - Partnering with ROSS

Brief Overview of RRVC Program

- Started in 2009 with the Volunteer Radiation Professionals Roundtable focused on the development of a radiological volunteer corps that could be activated by local authorities in the event of a large-scale radiological event.
- This roundtable was sponsored by CDC Radiation Studies Branch.
- Participants identified gaps and supported the need for a project that would evaluate the feasibility and sustainability of recruiting, training and using radiation volunteers to enhance radiological preparedness capabilities.
- The project would assess the budgetary requirements, legal liabilities of local, state, and federal entities, and other technical and administrative considerations.

Brief Overview of RRVC Program -2

- Development of a process for identifying, training, and registering volunteers who have knowledge and experience in radiation health and health physics and are willing to be called upon during a radiation emergency to support response activities which require knowledge and experience with health physics.

- Targeted volunteers include individuals currently working in hospitals, universities, nuclear power plants, and in other professions where their area of focus involves radioactive materials, health physics, or radiation health.

- The use of RRVC individuals was *focused on population monitoring and supporting a community reception center in the roles of radiological monitoring, contamination control, decontamination, and other health physics-specific roles not able to be filled by a local public health or emergency management department*.

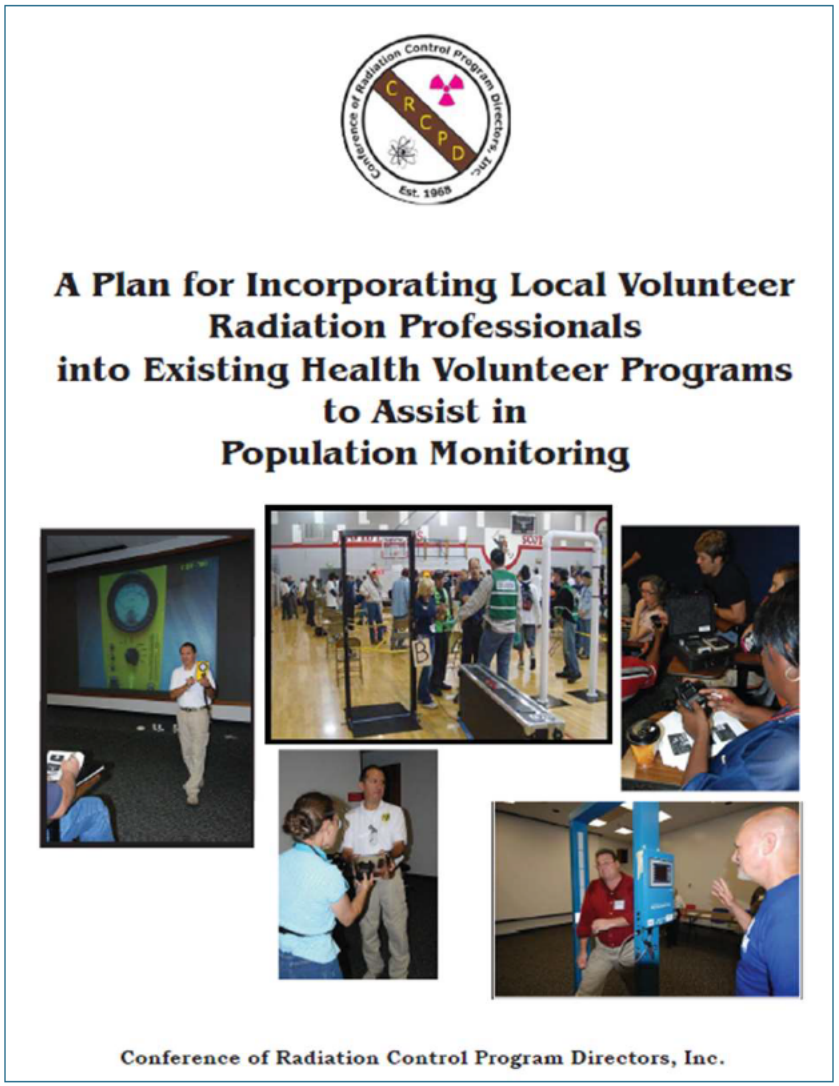
Brief Overview of RRVC Program -3

- Mini-grants offered by CRCPD to states (RFP sent out November 2009)
- Contracts offered to Florida, Kansas, New York City, North Carolina, Ohio, Oregon
- Major accomplishments:
  - ✓ Establishment of a volunteer registry
  - ✓ Development of training program
  - ✓ Offering of training
  - ✓ Some were also able to schedule a drill or exercise

RRVC Project – Other Accomplishments

- Increased awareness
- Identified potential volunteers from a pool of radiation professionals
- Identified options for mobilizing volunteers and conducted training to engage them
- Created a library of training materials and sample programs (stored on CRCPD Website)
- Initiated a process for registering volunteers
- Engaged with radiation professional societies and MRCs

Final Report published March 2011



https://crcpd.org/?s=RRVC

CRCPD

A Partnership Dedicated to Radiation Protection

CRCPD

Current Status

- In 2024 CRCPD established Task Force HS-ER19 charged with:
  - Getting an update on the status of RRVCs across the country
  - Based on the status, develop a plan to promote and support new and existing RRVC programs
  - Review and update the content of the CRCPD RRVC page and toolkit and ensure the content is current and relevant
  - Promote tools and training available with RRVCs to continue engagement.

Current Status - 2

- Not listed in the charge…but very important to the Task Force
  - Work with the ROSS program to leverage existing ROSS expertise across the country to support states and localities that want to start or continue having an RRVC program and
  - Provide an opportunity to ROSS to work in their community to help train and exercise with local RRVCs and become a resource to their program
  - Sent a short survey to all the State Radiation Control Program Directors asking if they had an RRVC program or similar
    - 22 States responded. Only 4 of those indicated they have an active RRVC program
    - Subsequently we learned that 2 more states have an active program

Current Status - 3

- Sent a follow-up letter with more details and received additional responses including from states that don't have a program but are interested in having one or learning more about it
- Planned briefing during ROSS March 31 call (today!)
- We will have a more detailed presentation during the ROSS training at NREP on Monday, April 21st, and will query ROSS interest in participating in this program
- Will have a follow-up hybrid meeting at the end of the ROSS training (also on April 21st) with those interested in learning more and/or participating in this program
- Will have a presentation during the CRCPD meeting, and if there is enough interest will request a Special Interest Meeting

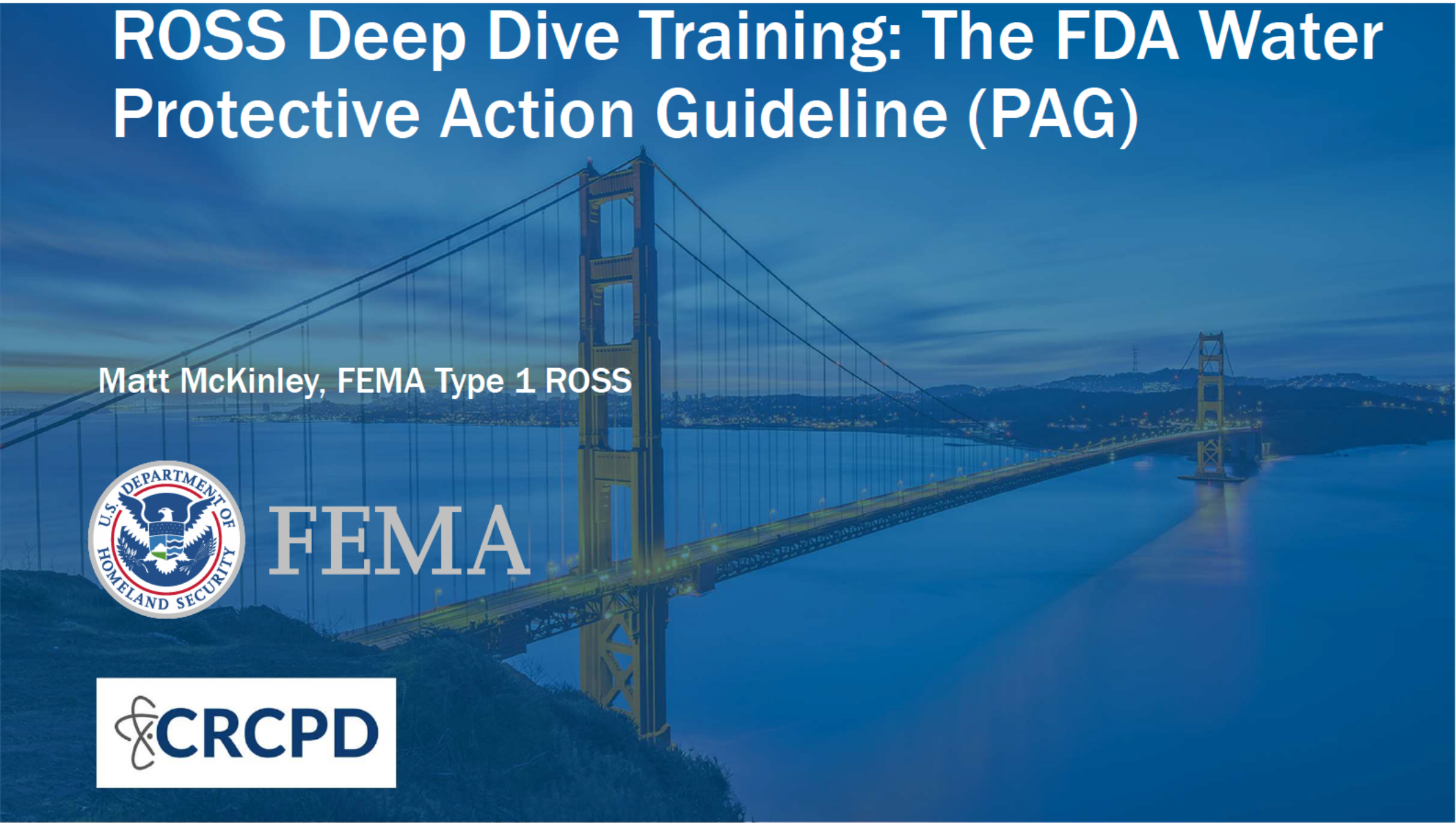
QUESTIONS?

HS/ER-19 Contacts:

Adela Salame-Alfie (HS/ER-19 Chairperson)
salamealfie8@gmail.com

Tanya Ridgle (HS/ER-19 member)
Tanya.ridgle@cdph.ca.gov
Sherwin Levinson (HS-ER-19 member)
director@mrcgem.com
Kim Steves (HS/ER-19 Resource Individual)
ksteves@crcpd.org

ROSS Deep Dive Training: The FDA Water Protective Action Guideline (PAG)



Matt McKinley, FEMA Type 1 ROSS

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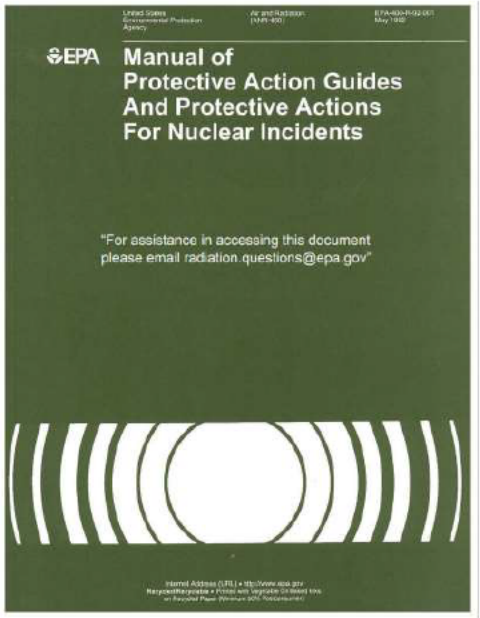
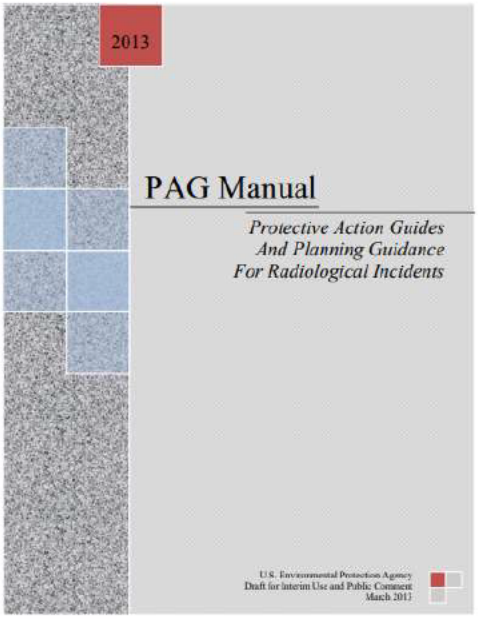
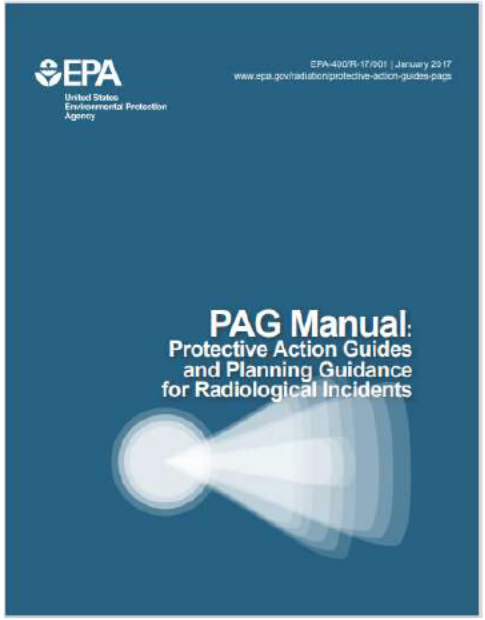
1992



2013



2017



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Contaminant	MCLG[1] (mg/L)[2]	MCL or TT[1] (mg/L)[2]	Potential Health Effects from Long-Term Exposure Above the MCL (unless specified as short-term)	Sources of Contaminant in Drinking Water
Alpha particles	none ---------- zero	15 picocuries per Liter (pCi/L)	Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Beta particles and photon emitters	none ---------- zero	4 millirems per year	Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Radium 226 and Radium 228 (combined)	none ---------- zero	5 pCi/L	Increased risk of cancer	Erosion of natural deposits
Uranium	zero	30 ug/L as of 12/08/03	Increased risk of cancer, kidney toxicity	Erosion of natural deposits

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DRL

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Derived Response Level

Table 4-3. Default Derived Response Levels (DRLs)[61] – Drinking Water Concentrations Corresponding to Specified Doses (mrem) of Select[62] Radionuclides, Assuming One Year of Exposure at Constant Levels[63]

Isotope	DRLs for pregnant women, nursing women and children age 15 and younger – 100 mrem dose	DRLs for the general population – 500 mrem dose
Sr-90/Y-90[64]	1,000 pCi/L	7,400 pCi/L
Cs-137	6,200 pCi/L	17,000 pCi/L
I-131	820 pCi/L	10,000 pCi/L

Questions to be answered - 1

- The drinking water PAGs apply during the _____phase of an incident, which may last for weeks to months but not longer than_____.
- What is the projected dose threshold recommended as the drinking water PAG for the general population (defined as anyone over age 15, excluding pregnant women and nursing women)?
- What is the projected dose threshold recommended as the drinking water PAG for pregnant women, nursing women and children age 15 and under?
- All dose values are expressed as Committed Effective Dose projected over _____based on one year of intake.

Questions to be answered - 2

- Covered under Food (F) or Water (W) PAG?

1. Apples _____
2. Apple Cider _____
3. Tap Water _____
4. Coconut Water _____
5. Bottled Sport Drink _____
6. Sport Drink made from a Powder _____
7. Half and Half _____
8. Milk _____
9. Water added to foods during preparation _____
10. Water intrinsic in food as purchased _____

- Name at least 2 reasons the EPA drinking water PAG and the FDA food PAG should be considered separately.

- Based on the PAG recommendations, what are the options available to water systems to reduce radiation dose to drinking water customers?

Questions to be answered - 3

- What federal resource can deploy monitoring and sampling field teams and provide dose assessment expertise, including the calculation of situation-specific DRLs that are based on information gained during the intermediate phase, including identification of specific isotopes, release patterns, and associated decay functions, to assist states and local communities in responding to an emergency.
- The DRL for the general population (500 mrem dose) for I-131 is 10,000pCi/L, but the DRL for pregnant women, nursing women, and children age 15 and younger (100 mrem dose) is 820 pCi/L, much lower than 1/5 of the adult DRL. Why?
- Provide a brief script describing your recommendation to a decision maker to consider implementing some protective action to reduce or avoid a public dose from the ingestion of radiologically contaminated drinking water. You can be creative and make up any of the conditions necessary for your recommendation as long as they are realistic and plausible. Quality submissions could be used toward completion of task #17 in the ROSS PTB: 17. Demonstrate ability to convey technical information to a nontechnical audience: Given a topic related to the consequences of a rad/nuc incident, describe it in terms a sixth-grader could understand.
- The PAG for relocation of the public is 2 rem (20 mSv) in the first year and 0.5 rem (5 mSv) in any subsequent year. Relocation PAGs are treated separately from food and water ingestion. That is, projection of intermediate phase doses should not include these ingestion pathways. However: Describe an instance where a decision to relocate a population might be heavily influenced by drinking water considerations.


ROSS and Cobalt Magnet 25
DEPARTMENT OF HOMELAND SECURITY
FEMA
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Cobalt Magnet 25 and ROSS

- The final fifteen players were:
  - Jeff Semancik and Ken Yale at the Michigan State EOC in Lansing.
  - Paul Schmidt and Sonia Carpena in the Provincial EOC in Toronto.
  - Nancy Stanley and David Paulu at the Federal Radiological Monitoring Assessment Center (FRMAC).
  - Tanya Ridgle, Cindy Costello, David Skutt, Amy Hass, Dennis Quinn, Debra Robinson, Chase Still, Richard Smith, and Blain Workman supporting CDC remotely.
- Six ROSS volunteered but we could not get them travel funding: Rusty Lorenzen, Wayne Vogel, Toni West, Trae Windham, Mohamed Musa, and Dustin Weiszbrod. Thank you for volunteering!

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Cobalt Magnet 25 and ROSS

- At least 36 ROSS playing in their jurisdictional roles included:
  - Chad Denbrock, David Asselin, Frank Cuccia, Greg Gothard, Jay Paquette, Mitch Hemesath, Nicolas Luciani, T.R. Wentworth, and Jason Smith of Michigan.
  - Eric Denison, Shannon Dettmer, Craig Helm, Steve Helmer, Pete Hill, Pam Hintz, David Lipp, Chloe Mercier, Chris Salz and Jill Slubowski of Ohio.
  - Brenda Tubbs, Courtney Eckstein, Daisy Coffman, Fernando Flore Carlos, Kaci Studer, Kevin Stahl, Alexandra King, and Adam Reef of Indiana.
  - Gerald Gifford of FEMA; Jeff Chapman, Bill Lenczuk, Danette Fennesy and Bill Irwin of DOE; Jim Hardeman, Andrea Pepper, and Sherwin Levinson of the CDC; and Angela Leek of Quantum Rad Solutions.
- Despite the loss of invitational travel funding, ROSS made the most of this incredible opportunity.

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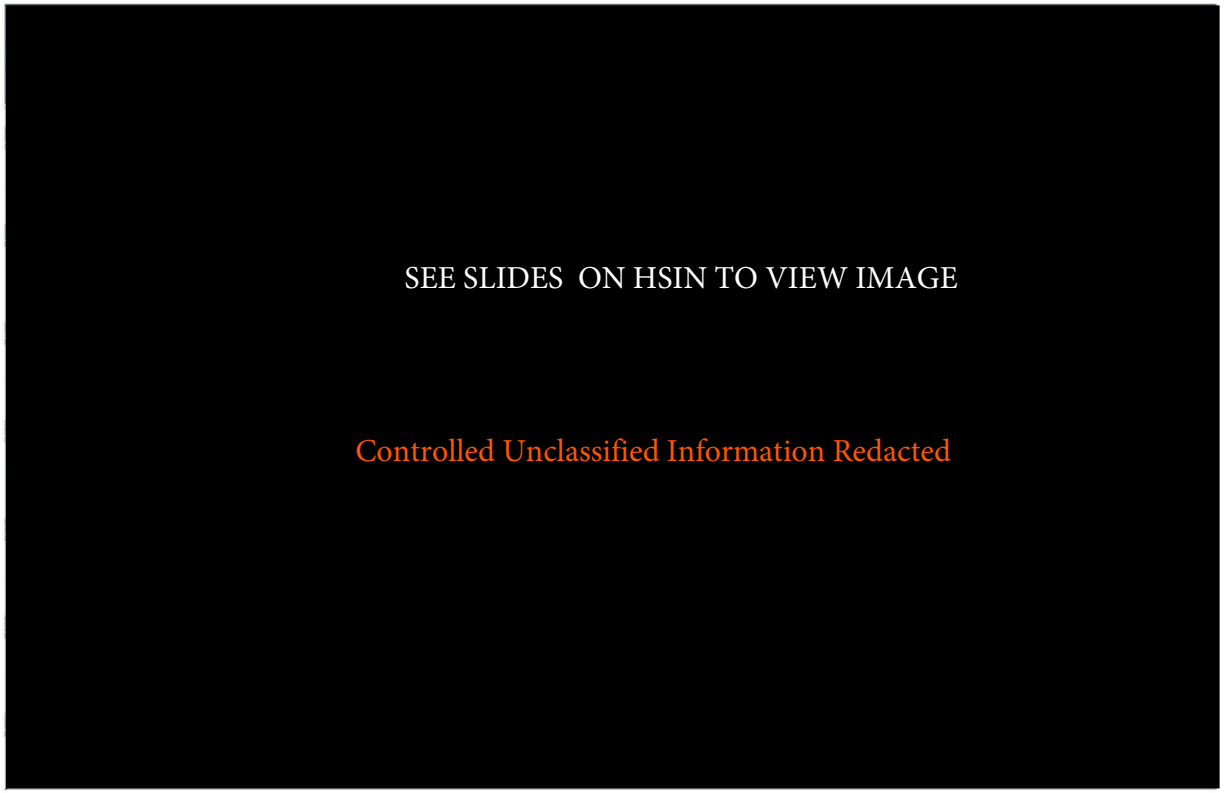
Cobalt Magnet 25 and ROSS

- We will open with a brief review of the scenario using data products from the exercise.
- We will then get some thoughts about the ROSS role from those who played the parts at CM25.
- I have slides for some; others will speak without slides.
- Participants: Paul Schmidt, Nancy Stanley, Jim Hardeman, David Skutt, Danette Fennesy, Bill Lenczuk, Angela Leek

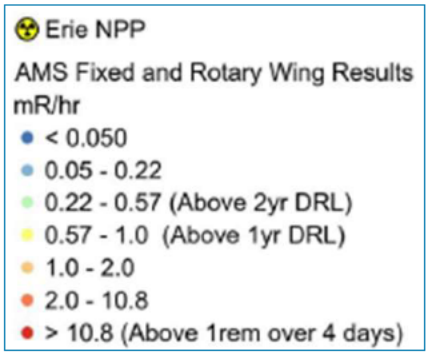
Cobalt Magnet 25: The Scenario

- Erie Nuclear Power Plant southwest of Detroit Michigan with Indiana, Ohio and Ontario all within 50-mile ingestion pathway Emergency Planning Zone.
- First release occurred on Monday 17 March from 1008 to 1305 EDT due to structural failure of spent fuel pool.
- Second release occurred from 2030 EDT on 17 March to 0600 EDT on 18 March due to failure of initial spent fuel pool repair.



Cobalt Magnet 25: Aerial Measuring System was a great success

- Fixed wing arrived on 17 March and flew about 1,000' above ground level (AGL).
- Rotary wing arrived later and flew at about 150' AGL.
- All flew on 18, 19 and 20 March.



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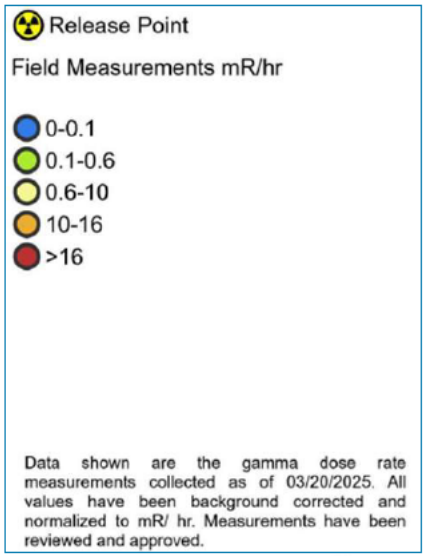
Cobalt Magnet 25: Gamma Measurement Results as of 1530 on 20 March

- Can see this includes measurements in Ontario, Canada, as well as Indiana and Ohio.



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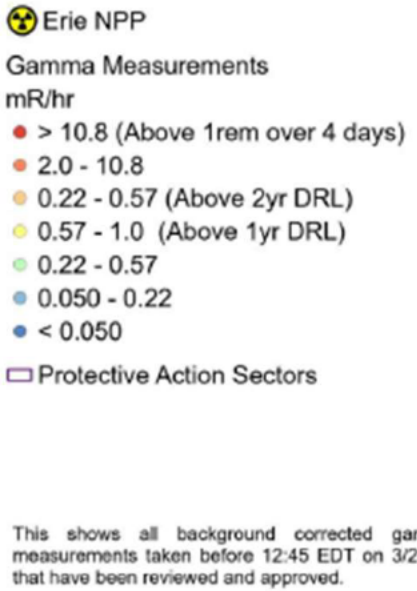
Cobalt Magnet 25: Gamma Measurement Results as of 1530 on 20 March

- Pure Michigan



This shows all background corrected gamma measurements taken before 12:45 EDT on 3/20/25 that have been reviewed and approved.

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Cobalt Magnet 25: Alpha, Beta, Gamma Monitoring Status as of 1430 on 20 March

- Michigan, Indiana, Ohio

Release Point

Measurement Type

- Alpha
- Beta
- Beta-Gamma
- Gamma
- AMS Flight Data
- Personel Locations

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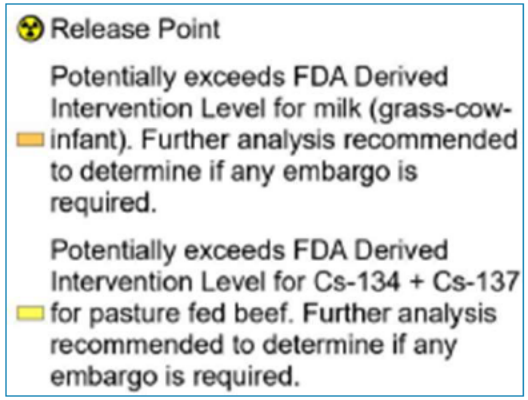
Cobalt Magnet 25: Predicted Areas of Concern for Dairy and Beef

- This came out on 18 March 2025.
- It was noticed at the State EOC but not discussed as to its ramifications at the FRMAC.



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Cobalt Magnet 25 and ROSS: Let's hear from the players

- I have slides from some of the fifteen players, but this time is open for any of the players of controllers who participated to share their experiences.
- Slides are from Jeff Semancik, Paul Schmidt, Nancy Stanley and Jim Hardeman.
  - Jim was one of the ROSS brought into the CDC from Georgia to augment the CDC staff in person.
- Other players and controllers on the call today include Angela Leek, Sonia Carpena, and David Skutt.

Jeff's CM25

- Most rewarding experiences at SEOC
  - State health physicist stating that he now sees the value in having a ROSS, in particular at the EOC, he felt it was great having someone with state director experience to work with. It was good to see by day 3, we were part of team and helping to reduce burden on State HP without taking over for him.
    - EOC Director started to reach out to us by name for help is specific areas
    - DPH director thanking me for organizing Ingestion pathway committee
  - When the CDC remote ROSS were able to complete assigned work well before anyone at the SEOC or FRMAC expected it:
    - Assessment of all state field data
    - Water PAG calculations
  - FRMAC scientist also stating that he now sees the benefit of ROSS after working with us at SEOC.
    - Watching Ken Yale use his knowledge of MI to help ensure samples taken from right places.

ROSS in Canada

- Canada requested ROSS for the exercise
- First time ROSS functioned outside of the US
- First exercise for Canada beyond the emergency phase of a nuclear plant REP exercise
- Sonia Carpena (AZ) and Paul Schmidt (WI) embedded in the Science Section, part of Provincial EOC (PEOC) in Toronto
- PEOC staff were welcoming, hospitable, friendly and open to input
- Canada goal was to learn about ingestion phase response to inform planning

ROSS Functions in Canada

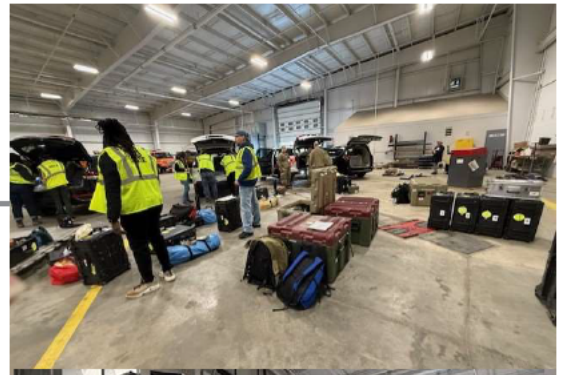
- Provided visual description of Erie NPP (BWR) reactor design
- Facilitated info sharing between CDC and Canada
- Provided multiple RASCAL dose projections with info converted to SI units
- Facilitated use of Mission Ops for sample tracking and operational info
- Attended and contributed to Science Section staff meetings
- Reviewed ETN media content for answers to Canada questions
- Contributing members of Rescindment Working Group, tasked with reviewing and recommending release of protective actions

“Being deployed for an exercise as a ROSS is interesting, frustrating, educational, exhausting, and weirdly a lot of fun.”

- N. Stanley

Forward FRMAC Nancy Stanley and David Paulu

- Field ops; hotline; sample receipt
- Tasked with assisting/mentoring the facility lead (MI staff), who was brand new in the position
- Being immersed in FRMAC "flow" & ops was a good refresher for me
- Reconnected with many colleagues
- Made numerous new contacts
- Took away many things that will help NJ for its IPX in 2026
- It was extremely rewarding to be welcomed & integrated into the operation as a rad SME
- I had numerous opportunities to introduce & explain the ROSS program to many interested players
- By the end of the week, I felt *much* more confident in my ability to contribute as a ROSS



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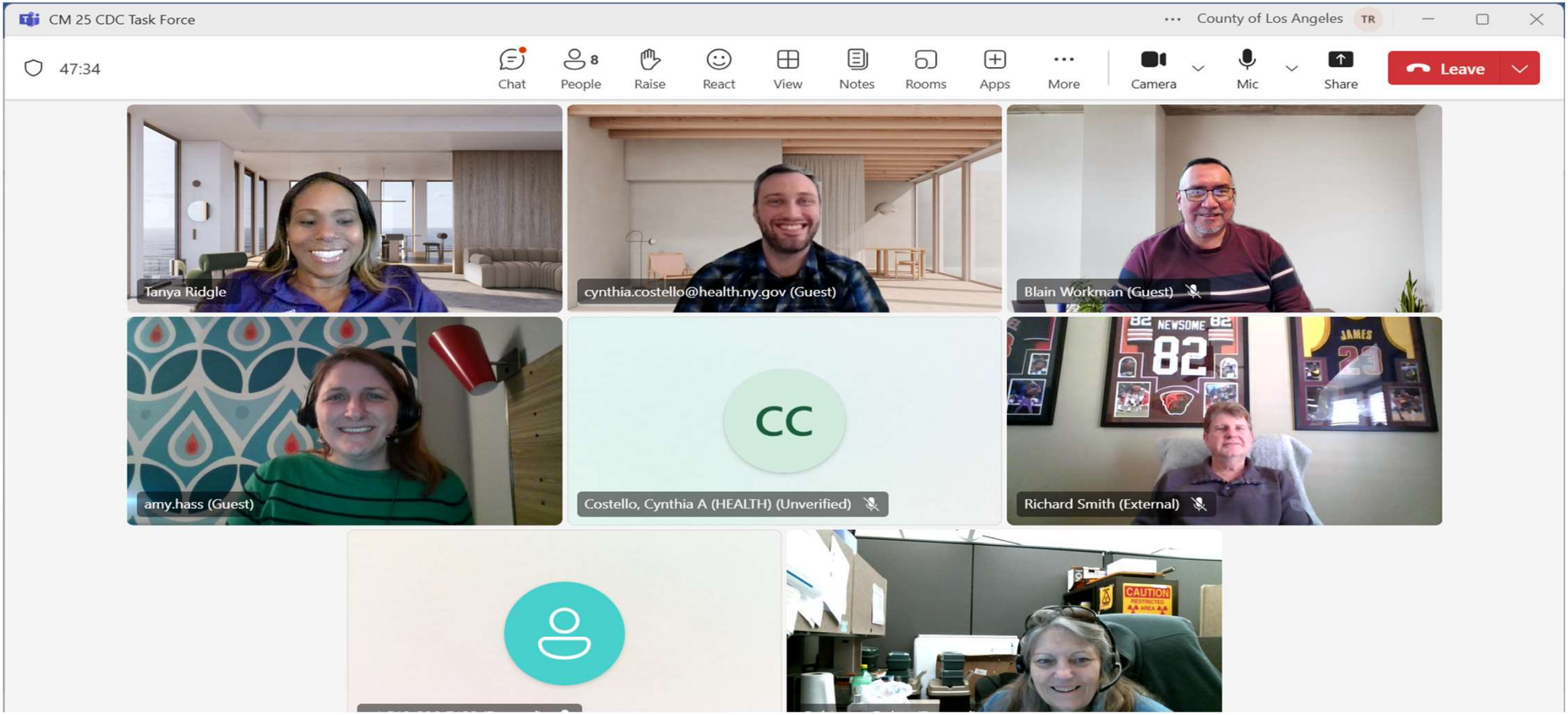
CDC Health Physics Cell (Atlanta, GA)

Jim Hardeman (1), Andrea Pepper (4), Sherwin Levinson (4)

- Represent Health Physics Cell at CDC Leadership IM briefs
- Brief CDC IM Leadership re: the nature of spent fuel pool accidents
- Brief CDC IM Leadership on initial IMAAC data product (smoke plot)
- Respond to requests for information (RFIs) from the FEMA Nuclear/Radiological Incident Task Force (NRITF)
- Provide radiological expertise to several internal CDC task forces (e.g. JIC, medical countermeasures, epidemiology)
- Coordinate with other ROSS around the US and in Canada

CM 25 CDC ROSS STRIKE TEAM



Closing Remarks

Jon Gill, PhD, FEMA Office of Emerging Threats

Jeramie Calandro, FEMA Office of Emerging Threats

FEMA

Jonathan Gill

Jonathan.gill@fema.dhs.gov

ROSS Program Manager

Chief, Risk Management Branch

Office of Emerging Threats

ROSS Program Questions:

Contact FEMA-ROSS@FEMA.DHS.GOV