



# **RADIOLOGICAL MASS CASUALTY INCIDENT HAS ENTERED THE CHAT**

## **March 23, 2022**



**24th California Unified Program  
Annual Training Conference**  
March 22, 23, 24, 29, 30, 31 - 2022

# Announcement - Slido for Q&A & Polls

- Each Live Session will have embedded in the PowerPoint the actual unique QR Code and Slido Meeting Code on this slide for the Moderator to review with the Attendees to connect with Polls (if applicable) and Q&A



# Thank you to all our 2022 **SPONSORS** and **EXHIBITORS**!



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WATER BOARDS**  
State Water Resources Control Board



**A Triumvirate  
Environmental Co.**

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# Announcement – Post Session Zoom Room

- Sometimes, if there are still more questions/conversation happening when the Session needs to conclude, a Zoom Room meeting link will be provided in the Slido Q&A area for continuation of the Session with the Presenter
- If you would like to ask additional questions or have further discussion with the presenter/moderator on this subject, we encourage you to join us there
- If given a choice, please select the breakout room for this session when you arrive in the Post Session 'Zoom Room'



# Announcement – How to earn CEUs

## ➤ Remember, to earn CEUs, you must

- Arrive in the Session within the first 10 minutes of the Live Session
- Click on the “Are you still watching?” pop up (say YES) to show you are engaged
- Attend 90-100% of the actual Session minutes
- Complete your Session Evaluation (after EVERY Session)
- Click on the “Leave Session” button on top left of Session to exit the Session/Close Session
- Complete the overall Conference Survey (1 time) – **Conference Survey to be released on 03-29-2022** at <https://calcupa.org/conference-survey/index.html>
- Check your Course History for CEUs-<https://calcupa.org/course-history/index.html>



# KEY UPDATES/REMINDERS

## Did you know that...

- If you missed a Session you are interested in (or need more Minutes for CEU credit), you can go back to MOST Sessions and watch them in an OnDemand style of viewing?
- On the Agenda, find the Session and click “WATCH NOW”
- Make sure to click on the “Are you still watching” during the video



A screenshot of the CUPA Forum agenda page. On the left is a dark green sidebar with white text listing various session categories like "All Sessions", "Regulators", "Agenda - PDF", "Post Session Zoom Room Link", "Session Evaluation", "Session Evaluation", "Feedback Survey", "CEUs", "Events", and "Watch Now". The main content area shows two sessions. The first session is titled "(C-2/16) BEGINNER" and is scheduled for 8:00 a.m. - 3:00 p.m. on Tuesday, February 16. It has a yellow icon and a "WATCH NOW" button. The second session is titled "(A-2/16) LESSONS L" and is scheduled for 10:00 a.m. - 11:00 a.m. on Tuesday, February 16. It has a green icon and a "WATCH NOW" button. Two large blue arrows point from the "WATCH NOW" buttons to the right. At the bottom of the page is a dark green banner with white text that says "Thank you to our GOLD SPONSORS". To the right of the text are logos for Southern California Edison, Booster, Tanknology, and a recycling symbol.



# AGENDA

1. Radiological scenarios
2. CDPH capabilities & contacts
3. Partner notifications
4. Messaging overview & examples
5. Community Reception Centers
6. FEMA ROSS
7. Resources
8. Q/A



# POLL: Who do you work for?

- State Government
- Local Government as a CUPA/PA
- Industry
- Local Government
- Education
- Other
- Federal Government



# Types of Radiological Emergencies and Incidents



## ACCIDENTAL

- Nuclear Power Plants
- Transportation
- Industry



## INTENTIONAL

- Tactical nuclear weapon
- Radiological Exposure Device (RED)
- Radiological Dispersal Device (RDD)
  - aka “Dirty Bomb”
- Improvised Nuclear Device (IND)



# Nuclear Power Plants

- Release of material
- Impacts surroundings
- Restoration timeline



# Transportation

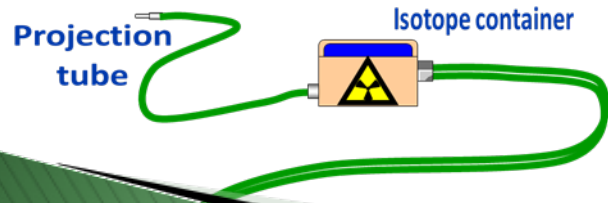
- Radioactive material transported in US every day
- Size of shipments vary
- Risk of collisions
- Factors concerning public safety:
  - Container integrity
  - Response training
  - Messaging and notification





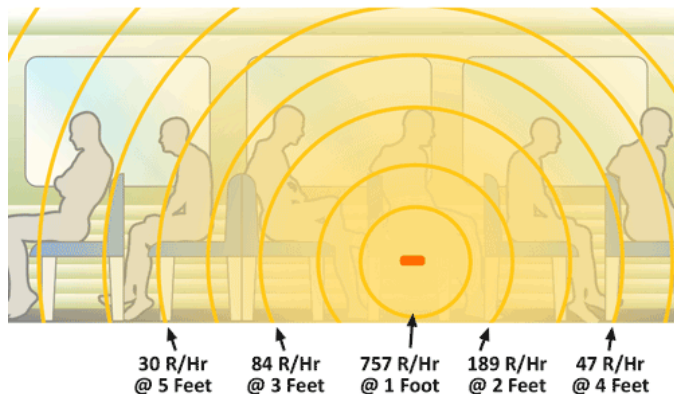
# Industry

- Radiation used in the workplace
- Malfunction in equipment
- Procedures not followed





# Radiation Exposure Device (RED)



- Unshielded radioactive material
- Intended to cause harm without spreading radioactive material
- Higher danger if exposed for a longer amount of time
- A few deaths possible
- Low probability

# Radiological Dispersal Device (RDD)

- Designed to spread radioactive contamination
- Possibility of a few deaths from radiation or radioactive contamination
- Explosion most likely cause of deaths
- Higher probability compared to IND
- 20 minute YouTube video: “First 100 min”



# Improvised Nuclear Device (IND)

- Massive loss of life (~50-100 thousand)
- Large destruction of infrastructure
- Contaminate a significant area
- Surrounding areas will be called on to assist
- Low probability



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# CDPH Rad Capabilities

## REM-TAG: Radiological Emergency Monitoring Technical Advisory Group

Analyze data, develop protective action recommendations, guidance for public and responders, provide some equipment/guidance for a CRC.

## Environmental Management Branch (EMB)

Nuclear Emergency Response Program

## Radiologic Health Branch (RHB)

RAM Licensee source information

## Drinking Water and Radiation Laboratory Branch

Environmental radiation and  
radionuclide measuring



# CDPH Contacts

## CDPH Duty Officer 24/7

(916)-328-3605

[cdphdutyofficer@cdph.ca.gov](mailto:cdphdutyofficer@cdph.ca.gov)

## CA State Warning Center

(916) 845-8911

## CDPH Radiologic Health Branch

John Fassell, Supervising HP cell: (916) 437-8071

Juan Garcia, Associate HP cell: (916) 477-0003





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**POLL: Using a few words and as many entries as you want, what agencies should be notified respond to a radiological incident at the *local/state* level?**



# Local/State Response Partner Notifications

## Local

HAZ-MAT

Fire

Police

Public and Environmental Health

Medical facilities

## State

CHP

Cal OES

Public and Environmental Health

Labs

National Guard: CST, CERFP, HRF



**POLL: Using a few words and as many entries as you want, what agencies should be notified respond to a radiological incident at the *federal* level?**



# Federal Response Partner Notifications

## Monitoring/Sampling:

DOE: RAP, CMHT, AMS

EPA: ASPECT

## Atmospheric Dispersion Modeling:

DHS: IMAAC

DOE: NARAC

## Data and Risk Management:

DHS: FRMAC

CBRNResponder

## Public Protective Actions/Medical:

DOE: REAC/TS

A-Team (EPA, USDA, FDA, CDC, others)



**POLL: How familiar are you with those partners?**

**What percentage of those partners mentioned have you actually exercised with?**





# Who takes over during the recovery phase?

## **Radioactive Waste Management**

Public Works

## **Healthcare facilities**

Treating patients, relocating

## **Mass evacuations**

Community Reception Centers

## **Sheltering**

Local government

Red Cross

## **Environmental Impacts**

Food, water, consumer products



# POLL: What percentage of your exercises include partners for the recovery phase?



# Anyone *else* that should be notified about a radiological emergency?



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# Messaging Overview

- Assess the Crisis
- Identify and assess your audiences
- Determine communication methods
- Develop 3 key messages
- Message Integrity
- Timely responses



# Best practice for messaging

## Simple & Brief

27 words  
9 seconds  
3 key messages

## Careful Development

Right words  
Audience's concerns  
Media's coverage

## Delivery

Empathy first  
Competence  
Optimism





# Use the right representative

- Skilled in Interpersonal Communication
- Knowledgeable about the topic area
- Credible and trustworthy



# Message example 1

Scenario: A transport carrying radioactive material gets into an accident. Responders have verified that the containers integrity is intact and there is no risk of spilling.

Message:

*"There was an accident involving hazardous materials near X&Y streets but there is no risk to the public at this time."*



# POLL: In a few words what issues do you see with this information?

*"There was an accident involving hazardous materials near X&Y streets but there is no risk to the public at this time."*



# Message example 1

*"There was an accident involving hazardous materials near X&Y streets affecting traffic but there is no risk to the public at this time."*

- Does not specify radioactive material: will lose trust.
- Did not mention current control of situation: possible worsening situation.
- No mention of updates to situation or when to expect them: look to other sources for information.



# Revised Message example 1

*"There was an accident involving the transportation of radioactive materials near X & Y streets. The containers remain intact. Responders are on scene and redirecting traffic. Latest information: <https://tinyurl.com>"*



# Message example 2

Scenario: A radiological dispersal device has exploded in the South of Market district of San Francisco killing five people and injuring 15 people.

Message:

*"There was an RDD in SoMA of SF. Anyone in the immediate area should shelter in place. Others should avoid the area."*



# POLL: In a few words what issues do you see with this information?

*"There was an RDD in SoMA of SF. Anyone in the immediate area should shelter in place. Others should avoid the area."*





# Message example 2

*"There was an RDD in SoMa of SF. Anyone in the immediate area should shelter in place. Others should avoid the area."*

- RDD is unclear to the general public
- SoMa and SF may be unfamiliar terms for tourists
- No mention of where to get more information



# Revised Message example 2

*"An explosion involving radioactive materials occurred in the northeast area of San Francisco. If in the immediate area shelter in place. Medical personnel are responding. Updates will come as available."*

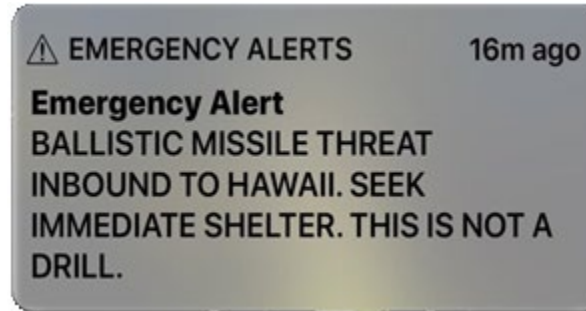


# Preparedness is key

Can predict questions and have answers ready

First hour saves most lives in IND, pre-scripted messages key

Practice and drill



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# Community Reception Center: Purpose

- Divert people with minor/no injuries away from the hospitals
- Identify people who need medical treatment, decontamination, dose assessment
- Register people for long-term health monitoring
- Address concerns of the worried well



# CRC Process Flow Overview

ZONES	STATIONS
Contamination Control Zone	<ul style="list-style-type: none"><li>• Initial Sorting</li><li>• First Aid</li><li>• Contamination Screening</li><li>• Wash/decon</li><li>• <i>(Pet Services if CRC designed to allow pets)</i></li></ul>
Clean Zone	<ul style="list-style-type: none"><li>• Registration</li><li>• Radiation Dose Assessment</li><li>• Discharge</li></ul>



# Who is responsible for CRCs?

- State Government
- Local Government
- Federal Government
- Other





# Poll: Who is responsible for CRCs?



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# Who is responsible for CRCs?

## Local Response for CRCs

State and Federal resources are hours/days away



# CRCs: Considerations for Local Response

- Chief elected official or designee coordinates the overall response and resources
- Must use NIMS, SEMS, and ICS systems to their full advantage



# CRCs: Considerations for Local Response

- Local response with support as needed
- Your CRC for assisting impacted jurisdiction (mutual aid)
- Planning, training, exercising



# CRCs: Considerations for Local Response

- Identify necessary resources
- Multiple locations
- Trained Staff
- Equipment
- Communication plan when typical methods fail
- Traffic control



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# FEMA ROSS

ROSS: Radiological Operations Support Specialist

FEMA certified response asset

SME expertise and guidance

Explain implications of models

Ideally many trained throughout the US

<https://www.crcpd.org/page/ROSS-1>

[FEMA-ROSS@FEMA.DHS.GOV](mailto:FEMA-ROSS@FEMA.DHS.GOV)





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# CDC's CRC SimPLER

- Planning tool, not a response tool
- Evaluate a CRC's capacity, bottlenecks, and additional resources needed
- Scenario walkthroughs

<https://ephtracking.cdc.gov/Applications/simPler/about>



# CDC's CRC SimPLER



## INPUTS

Select CRC, population and resource information below and click "estimate" for throughput calculations. Hover mouse over bolded drop-down labels for more information. For more detailed descriptions of the inputs, click the question icon.

Select the time your CRC will be open each day:



**Operational Shift Length (Hours per shift)**

8

Select information about the population arriving at your CRC:



**Estimated Arriving Population During Shift**

2500

**Percent of Population Assumed Contaminated**

1

Enable Arrival Distribution Options ☐

**Arrival Distribution**

uniform

Select the number of resources used at your CRC:



Minimum  
Staff

**Number of Portal Monitors**

2

1

**Number of Handheld Detectors (Prior to Decon)**

4

4

**Number of Individual Showers**

4

8

**Number of Handheld Detectors (Post Decon)**

4

4

**Number of Registration Lanes**

10

10

**Total**

27

Estimate

Unified Program  
g Conference

29, 30, 31 - 2022

# CRC Shift Summary Outputs

**Average Hourly Throughput (Individuals)** 112

**Total Throughput at Shift End (Individuals)** 893

**Average Time Spent at CRC (hh:mm)** 02:35

**Extended Time Past Shift (hh:mm)** 14:40



## INPUTS

Shift Length: 8  
Number Arriving: 2500  
Contamination %: 1  
Arrival Rate: uniform

Portals: 2  
Detectors Pre: 4  
Showers: 4  
Detectors Post: 4  
Reg Lanes: 10

## Shift Averages for Each Station

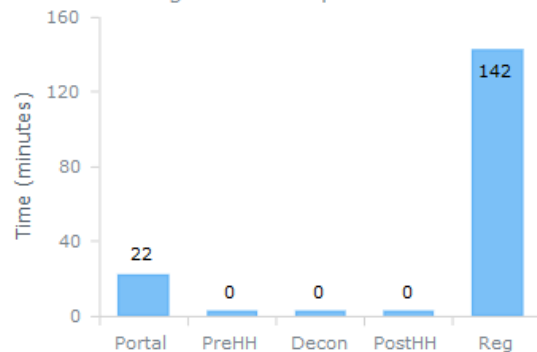
### STATION ABBREVIATIONS

Portal = Portal (Initial Contamination Screening)

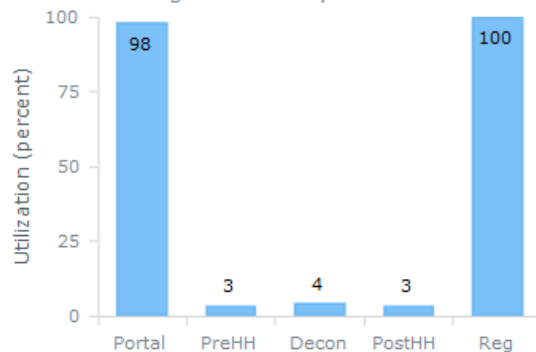
PreHH = Pre Decontamination Handheld Screening  
Decon = Decontamination (Shower)

PostHH = Post Decontamination Handheld Screening  
Reg = Registration

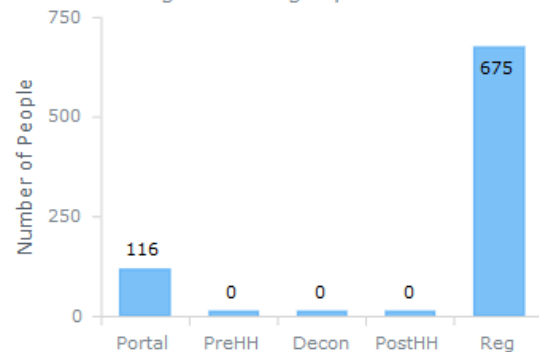
Average Wait Time per Station ?



Average Utilization per Station ?



Average Line Length per Station ?



# CDC Population Monitoring & CRC site

- **Point of Dispensing to Community Reception Centers Planning Toolkit (POD to CRC)**
- Guidance, training, and planning Resources
- CRC Drill and Exercise Toolkit
- Simulation Tools
- Videos, documents, virtual training

<https://www.cdc.gov/nceh/radiation/emergencies/populationmonitoring.htm>



# CTOS Center for Radiological Nuclear Training

- Counterterrorism Operations Support (CTOS)
- Resident courses at Nevada National Security Site
- Mobile training can be scheduled if minimum number of students will attend.
- Prepares responders in preventing or responding to terrorist use of radiological/nuclear weapons
- All CTOS courses are offered at **NO COST** to state, local, and tribal first responders

<http://www.ctosnnsa.org/>



# More Information

- CRC Guide: CDC's Population Monitoring in Radiation Emergencies
- CDC Website for infographics with radiation facts, info about different types of incidents
- Homeland Security's National Response related plans





# CDPH Rad Capabilities

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Nuclear Emergency Response Program

## Radiologic Health Branch (RHB)

RAM Licensee source information

## Drinking Water and Radiation Laboratory Branch

Environmental radiation and  
radionuclide measuring



# KEY TAKE AWAYS

- Accidental exposures and RDD incidents are the most likely
- Know your partners and prepare
- Proper messaging/spokesperson
- CRC should be set up as soon as possible for MCIs
- CDPH CEH Assistance
  - Response: REM-TAG, detection equipment that can be borrowed
  - Preparedness: training, exercises, guidance





# Any Questions?

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# BREAK TIME!

