Agenda

- Welcome from FEMA Office of Emerging Threats (OET) – Steve Chase
- Updates from CRCPD HS/ER-4 Committee – Bill Irwin
- Kelly Gillette receiving Type 3 and Type 2 Certifications – ROSS Qualification Review Board (QRB)
- Quarterly Problem Set: a LLNL Responder Training Video – Angela Leek
- Closing Remarks – Steve Chase, FEMA OET
FEMA Office of Emerging Threats

Opening Remarks

Steve Chase
FEMA OET Updates

- FEMA CBRN is now the FEMA Office of Emerging Threats (OET).
- Working to plan offerings of initial PER-388 ROSS courses and Virtual Evaluation Scenario Tool continuing education courses for FY 24 and beyond with CTOS and FEMA National Training and Education Division.
- New Position Qualification officially added a Type 4 ROSS as the designation upon completion of initial training and its prerequisites. Bill reviews later in slides.
- Working to release ROSS-prepared university educational curriculum in Connecticut and then other institutions.
- Leveraging the RAND study to develop a ROSS sustainment decision paper.
ROSS Program Updates

Bill Irwin, CRCPD Homeland Security/Emergency Response Committee 4
State ROSS Coordinator/Authority Having Jurisdiction Calls

- Forty-seven State ROSS Coordinators and Authorities Having Jurisdiction attended one of two calls accounting for all but two ROSS States.
- Stimulated a lot of new work, especially to provide states procedural guidance and to plan more initial ROSS training in underserved jurisdictions.
- Working on getting thirtieth state to assign a State ROSS Coordinator.
- It was clear we needed more people in CRCPD HS/ER-4 to help with more work.
Thirty-one states have indicated their interest in having a ROSS Program and identified a State ROSS Coordinator.

SRCs will help:
- Help new people become ROSS
- Trained ROSS get assimilated into the state emergency response and recovery organization, and
- ROSS connect with task evaluators and the state Certifying Official.
HS/ER-4 Subcommittee Organization So Far

- We could use more of you as volunteers to help us out.
- You simply join CRCPD as an associate (part of State Radiation Control Program) or affiliate member (not part of State Radiation Control Program).
- You can start here: https://www.crcpd.org/page/MemberApp.
- Bill Irwin will invite you to meetings. Contact him with specific questions, sub-committee requests or complaints: william.irwin@vermont.gov.
- You can see on the next slides we have lots to do and plenty of need for volunteers.
Assumptions about the HS/ER-4 Subcommittees

- CRCPD HS/ER-4 is at top with State ROSS Task Forces at bottom.
- ROSS Steering Committee is National in Orientation
- State ROSS Task Forces guided by national criteria established by ROSS Steering Committee and aided by CRCPD HS/ER-4
- State ROSS Task Forces have flexibility needed for differences between state, but must comply with National Incident Management System Guideline for the National Qualification System (FEMA 2017) doctrine.
- Uses NIMS/ICS tenets of span of control and chain of command.
Working on new ROSS procedure manual

- Sara Baltozer took over as FEMA OET Contract Support in February 2023.
- She has a lot of great ideas and is creating excellent products for us to use.
- We hope to provide all the ROSS, the State ROSS Coordinators (SRC) and the Authorities Having Jurisdiction (AHJ) copies before the next call.
- We will use the manual for additional training of SRC and AHJ.
The ROSS Position Qualification (FEMA 509) has been revised

- FEMA National Integration Center approved revision of the ROSS Position Qualification (FEMA 509) on 31 March, 2023.
- Note the PTBs here. They do not have the forms or instructions found in the 2019 version. The forms are needed for evaluation records and certification.
Radiological Operations Support Specialist

**ID:** 17-509-1415  
**Status:** Published  
**Version:** 2.0  
**Updated:** 3/31/2023 4:06:33 PM  
**Original Release:** 10/22/2019  
**Last Major Release:** 03/31/2023  
**NQS Position:**  
**Resource Category:** Screening, Search, and Detection  
**Core Capabilities**  
- **Primary:** Situational Assessment  
- **Secondary:**  
- **Supporting:**

**RESOURCE CATEGORY**  
- Screening, Search, and Detection

**RESOURCE KIND**  
- Personnel

**OVERALL FUNCTION**  
The Radiological Operations Support Specialist (ROSS):
1. Provides subject-matter expertise and guidance on questions about radiation, the environment, hazard modeling, data and risk management, public protective actions and other scientific and technical issues to incident response leaders at any level.
2. Gathers, organizes, synthesizes, documents and distributes incident and resource information to improve situational awareness at all levels of incident management.
3. Is able to clearly explain the implications of modeling, measurement and analysis methods, as well as the health risks and hazards that exist during a radiological or nuclear incident.
4. May function as a ROSS Strike Team Leader when serving as a Type 1 or Type 2 ROSS as part of a ROSS Strike Team.

**COMPOSITION AND ORDERING SPECIFICATIONS**  
1. This position can be ordered as a single resource.
2. Requestor specifies any additional qualifications necessary based on incident complexity and needs.
3. Discuss logistics for deploying this position, such as working conditions, length of deployment, security, lodging, transportation, and meals, prior to deployment.

Each type of resource builds on the qualifications of the type below it. For example, Type 1 qualifications include the qualifications in Type 2, plus an increase in capability. Type 1 is the highest qualification level.

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**Introduction**
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<th>COMPONENT</th>
<th>TYPE 1</th>
<th>TYPE 2</th>
<th>TYPE 3</th>
<th>TYPE 4</th>
<th>NOTES</th>
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<td>DESCRIPTION</td>
<td>Same as Type 2, PLUS. 1. Has the capacity to work at the Incident Command Post (ICP) and Emergency Operations Center (EOC) levels and to advise Authority Having Jurisdiction (AHJ) and elected officials. 2. Helps the AHJ integrate federal radiological response assets and capabilities from across the government into the response, as necessary. 3. Coordinates radiological activities and technical data management with other ROSS staff and Federal response assets across the incident. 4. Integrates into a state's EOCs and coordinates with the radiological control authority. 5. Supports radiological response preparedness activities and exercises at the state and local levels. 6. May manage multiple ROSS Strike Team Leaders engaged in a variety of radiological response activities, including human dose and environmental impact projection and assessment, and maintaining a consistent radiological situational awareness. 7. Manages various ROSS Strike Team activities as the AHJ requests, such as: a. Incident response activities. b. Public and emergency worker dose data collection and reduction, for dose management in large populations. c. Management of geographically and temporally extensive environmental sampling. d. Coordination of radiological analysis of samples. e. Radiological safety guidance to emergency support functions engaged in lifesaving. f. Restoration of critical infrastructure. g. Decontamination of people and places. h. Radioactive waste management.</td>
<td>Same as Type 3, PLUS. 1. Creates exposure estimates for a variety of internal and external exposure scenarios. 2. Understands key state and Federal radiological response assets, capabilities, and reporting structures, and integrates them into an effective response. 3. Communicates complex radiological issues to large groups and senior managers, and supports public message development. 4. Helps develop Incident Action Plans (IAPs) that balance complex radiological safety concerns with mission priorities. 5. Works closely with command staff and emergency management teams. 6. Works effectively with other ROSS staff when part of a ROSS Strike Team, or when serving as a ROSS Strike Team Leader, to synthesize large amounts of radiological data from a variety of response and recovery resources to ensure a common radiological operating picture across all affected jurisdictions. 7. May coordinate with state and local decision makers to provide necessary radiological assessments of health and environmental impacts.</td>
<td>Same as Type 4, PLUS. 1. Works as a technical specialist and advises response personnel and AHJ on issues pertaining to radiological and nuclear (rad/nuc) response. 2. Provides radiological incident assessment and resource information through: a. Interpreting and communicating model and measurement results and data products. b. Proficient use of the CBERResponder mobile app and website to collect and share data. 3. Has knowledge of state radiation control programs and other radiological emergency preparedness assets, as well as key Federal radiological response assets. 4. Exchanges technical information with other ROSS staff in the response and advisory organizations to ensure effective communication of protection guidance. 5. When part of a ROSS Strike Team: Reports to a ROSS Strike Team Leader and works within a ROSS Strike Team at an ICP or other incident management center to ensure the use of a common radiological operating picture throughout the response and recovery periods for compatible effective decision-making across all affected jurisdictions. 6. Helps develop command post-level objectives for implementing protective actions and emergency worker protections on a unit-by-unit level. 7. Guides radiological aspects of response during the incident by having: a. A working knowledge of radiological protection guidance and best practices, including how best to apply the Environmental Protection Agency (EPA) FNE Manual: Protective Action Guidelines and Planning Guidance for Radiological Incidents, the Department of Homeland Security (DHS) Radiological Dispersal Device (RDD) Response Guidance, FEMA Improvised Nuclear Device Response and Recovery guidance and other rad/nuc emergency response and recovery guidance. b. The ability to obtain updated/additional radiological advice and recommendations from appropriate advisory organizations. 8. Helps responding agencies and agency decision makers use the CBERResponder website to maintain situational awareness of radiological aspects of the incident. 9. Communicates radiological issues to nontechnical audiences and provides first responders with just-in-time training on the CBERResponder mobile app and website, monitoring devices and safety protocols. 10. Effectively integrates into the Incident Command System (ICS) structure.</td>
<td>The National Incident Management System (NIMS): Type 3 ROSS: Has completed initial ROSS training and can work as a technical specialist under the supervision of a Type 3 or higher ROSS. When serving as part of a ROSS Strike Team, a NIMS Type 1 or Type 2 ROSS may also function as a team leader.</td>
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<td>EDUCATION</td>
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| One of the following:  
1. Graduate degree in a radiation-related field  
2. Successful completion of part 1 of the American Academy of Health Physics (AAHP) certification exam  
3. Equivalent experience, as the AHU determines | Same as Type 2, PLUS Completion of the following:  
1. ICS-400: Incident Command System for Command and General Staff—Complex Incidents  
2. LV-200. Federal Radiological Monitoring and Assessment Center (FRMAC) Liaison Skills Lab, or equivalent  
3. PER-905. Advanced Radiological Incident Operations, or equivalent | Same as Type 2, PLUS:  
- Knowledge, Skills, and Abilities: Working knowledge of plume projection/slope assessment modeling and software, such as RASCAL, HotSpot, and RESMAQ, as demonstrated in training or exercises  
- Experience:  
  1. Successful completion of the National Qualification System (NQS) for the National Incident Management System (NIMS) Type 1 Radiological Operations Support Specialist, or equivalent AHU documentation  
  2. Experience in a radiological response and advisory role during national exercises such as Vibrant Response  
  3. Three years of experience as an operational health physicist or radiation safety officer, with emergency response experience and training in the Federal radiological response framework  
  4. Successful development and implementation of at least three additional separate rad/nuc emergency training sessions for first responders or other emergency management personnel |
| One of the following:  
1. Bachelor's degree in science, technology, engineering, mathematics or a radiation-related field, such as health physics, nuclear engineering or radiological science  
2. National Registry of Radiological Protection Technologists (NRRPT) certification  
3. Equivalent experience, as the AHU determines | Same as Type 3, PLUS:  
1. ICS-300: Intermediate Incident Command System for Expanding Incidents  
2. ICS-100: Incident Command System Interface, or equivalent  
3. PER-316: Radiological Incident Assessment, or equivalent  
4. PER-904: Radiological Emergency Response Operations, or equivalent  
5. Training or experience in Turbo FRMAC, or equivalent  
6. Nuclear Regulatory Commission (NRC) Radiological Assessment System for Consequence Analysis (RASCA) course, or equivalent  
7. RESRAD-RDD course, or equivalent | Same as Type 3, PLUS:  
1. Successful completion of the National Qualification System (NQS) for the National Incident Management System (NIMS) Type 2 Radiological Operations Support Specialist, or equivalent AHU documentation  
2. Successful completion of at least two tabletop exercises or other exercises demonstrating the radiological response and advisory role such as the Silent Thunder series, the Isotope Crossroads series, or FEMA's Radiological Emergency Preparedness (REP) exercises  
3. Practical experience working with, and making measurements of, radioactive materials or radiation generating devices  
4. Emergency response experience and training in the Federal radiological response framework |
| One of the following:  
1. Associate degree in a radiation-related field, such as health physics, nuclear engineering or radiological science  
2. NRRPT certification | Completion of the following:  
1. Counterterrorism Operations Support (CTOS) PER-307: Understanding of Improved Nuclear Device Effects and Response Strategies (web-based or instructor-led) or equivalent  
2. PER-325: ICR: CB/CRNResponder Mobile App or equivalent  
3. CB/CRNResponder website version webinars  
4. LV-100: FRMAC Liaison Fundamentals, or equivalent  
5. Radiation protection/emergency response training in accordance with at least one of the following:  
   b. Advanced training to the level equivalent to an American National Standards Institute/American Nuclear Society (ANSI/ANS) 5.1 Radiation Protection Technician  
   c. Hazardous Materials Technician Specialist Employee A with a specialty in radioactive materials and/or weapons of mass destruction, as defined in NPPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents  
   d. Hazardous Materials Specialist III training as defined by the American Federation of State, County, and Municipal Employees (AFSCME) | Experience in a radiological response and advisory role during radiological emergency preparedness exercises for nuclear power plants, community reception centers or other radiological incidents (such as Vigilant Guardian) |

Note: RDSS may substitute training and five years of experience as a National Fire Protection Association (NFPA) 472: Hazardous Materials Technician Specialist Employee A with a specialty in radioactive materials and/or weapons of mass destruction or equivalent, as the AHU determines.

Not specified.
# Fitness, Currency, Certifications, Notes and References

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<tr>
<th>PHYSICAL/MEDICAL FITNESS</th>
<th>Light</th>
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<th>Light</th>
<th>Light</th>
<th>The NIMS Guideline for the NGOS defines Physical/Medical Fitness levels for NGOS positions.</th>
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| CURRENCY                 | Same as Type 4 | Same as Type 4 | Same as Type 4 | Same as Type 4 | 1. Functions in this position during an operational incident, exercise, drill, simulation, or planned event at least once every two years  
2. Maintains currency in all relevant NIMS, ICS, and hazardous materials (HAZMAT) training  
3. Attends at least eight hours of ROSS refresher training or continuing education every two years  
4. Maintains proficiency in critical tools, including CBRN Responder, the ROSS Toolkit and C2web |
| PROFESSIONAL AND TECHNICAL LICENSES AND CERTIFICATIONS | Successful completion of part 1 of the AARHP exam, or equivalent experience | Not Specified | Not Specified | Not Specified | Not Specified |

**Notes**

Nationally typed resources represent the minimum criteria for the associated component and capability.

**References**

2. FEMA, National Incident Management System (NIMS), October 2017  
3. FEMA NIMS Guideline for the NGOS, November 2017  
4. FEMA, National Response Framework, June 2016  
5. FEMA, Improvised Nuclear Device Response and Recovery: Communicating in the Immediate Aftermath, latest edition adopted (June 2013)  
Counterterrorism Operations Support Training

- CTOS Initial ROSS Classes
  - Sacramento, California course scheduled for October 23-26, 2023.
  - Los Angeles, California course scheduled for December 11-14, 2023.
- Working with points of contact in Massachusetts, Nebraska, Kentucky and Utah for new classes in FY 2024.
- As noted, plan to pilot the nuclear detonation (Nuc Det) and radiological dispersal device (RDD) Virtual Evaluation Scenario Tool (VEST) in FY 2023.
  - Focus on deep dives into response during didactic and completing tasks through multiple practical exercises.

The Qualification Review Board (QRB)

- We have many ROSS who have been working on task completion in their Type 3, 2 and 1 Position Task Books (PTBs).
- The QRB is expecting several to be reviewed between now and the next ROSS Quarterly Call the week of 25 September 2023.
- There are three folks, one for Type 1 and two for Type 3, from Texas already lined up.
- We hope that we can have multiple ROSS certify for advancing type each quarterly call as we go on.
The Qualification Review Board (QRB) Certification for June 2023

- This quarter, we have one person who has completed certification for Type 3 and Type 2: Kelly Gillette of Iowa.
- In addition to being well known by Angela Leek her past ROSS Mentor, Kelly has been working very closely with many of us on the ROSS continuing education at the 2022 and 2023 NREP and CRCPD conferences.
- Please join me in celebrating the certification of our newest Type 2 ROSS – Kelly Gillette!
Kelly presented yet another way to efficiently document her task completion.
Kelly presented yet another new way to document her task completion
Kelly presented yet another new way to document her task completion

Kelly Galletto Evaluation Record Worksheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Task Description</th>
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<tbody>
<tr>
<td>023</td>
<td>Various</td>
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<td>2022 COOP RD Workshop – Acted as a ROSS Trainer, AZ</td>
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<td>First 100 minutes Guidance</td>
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<td>2022 NREP RD workshop</td>
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<td>Assisted diving work shop</td>
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<td>2023 NREP RoadNet workshop</td>
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<td>Planning, development, and implementation</td>
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<td>024</td>
<td>Various</td>
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<td>Provided hands-on training</td>
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<td>Sioux City Fire</td>
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<td>Field Teams</td>
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<td>Metro Star</td>
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<td>Iowa DES – Motor Vehicle Enforcement</td>
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<td>025</td>
<td>June-July 2022 Community Reception Center Training</td>
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<td></td>
<td>Helped set up equipment</td>
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<td>Provided training to community members</td>
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<td>026</td>
<td>June 2021 Community Reception Center Exercise</td>
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<td>Acted as SME</td>
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<td>Answered question for evaluator</td>
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<td>027</td>
<td>Various</td>
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<td>UNF Rascal Training</td>
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<td>UNF office in Chicago</td>
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<td>Ames, IA</td>
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<td>028</td>
<td>March 2021 RSO Training and Exercise for Central Iowa (U.S. counties, local</td>
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<td>partners)</td>
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<td>First 100 minutes Guidance</td>
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<td>Hot Zone</td>
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<td>Shelter in place</td>
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<td>3D-point monitoring</td>
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<td>029</td>
<td>2022 QEOSM training and exercises</td>
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<td>Hands on training</td>
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Position Task Book: Radiological Operations Support Specialist (Type 3)

RADIOLOGICAL OPERATIONS SUPPORT SPECIALIST (TYPE 3)

1. Competency: Assume position responsibilities

Description: Successfully assume the role of Radiological Operations Support Specialist (ROSS) and initiate position activities at the appropriate times according to the following behaviors.

1a. Behavior: Ensures readiness for assignment

<table>
<thead>
<tr>
<th>TASK</th>
<th>CODE</th>
<th>EVALUATION RECORD</th>
<th>EVALUATOR INITIALS AND DATE</th>
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<tbody>
<tr>
<td>1. Demonstrate a working knowledge of the</td>
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<td>basic functionality of and differences</td>
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<td>among tasks</td>
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<td>makers using Homeland Security Information</td>
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<td>Network (HSIN), WGEOC, and other common</td>
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<td>communications tools</td>
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<td>3. Demonstrate understanding that maps</td>
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<td>atmospheric phase modeling, briefing</td>
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<td>products and technical impacts can cater</td>
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<td>to several scenarios</td>
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<td>4. Demonstrate understanding of FMAAC and</td>
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<td>7. Demonstrate basic ability to engine</td>
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<td>emergency modeling and Atmospheric</td>
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<td>Assessment Center (MAAC), National</td>
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<td>Federal Radiological Monitoring and</td>
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<td>Assessment Center (FRMAC) data products</td>
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<td>8. Demonstrate basic ability to engine</td>
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<td>Federal Radiological Monitoring and</td>
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<td>Assessment Center (FRMAC)</td>
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<td>9. Demonstrate ability to navigate an</td>
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<td>event and use basic functionality:</td>
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<td>downloading data, navigating the map, and</td>
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<td>to the data</td>
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<td>10. Demonstrate ability to provide</td>
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<td>technical guidance and making</td>
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<td>recommendations as alternate decisions</td>
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<td>11. Demonstrate understanding of</td>
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<td>technical guidance and making</td>
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FEMA
Kelly presented yet another new way to document her task completion.
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Let’s celebrate more ROSS advancement every quarter!

- We know we have many other people in the pipeline.
- We know it takes time and effort to document this, but it is a national certification requirement.
- Please wrap up your documentation with your evaluator(s) and Authority Having Jurisdiction.
- If you have any questions, let’s hear them now.
- The QRB is available to answer questions after this meeting, too.
- Please reach us through me, william.Irwin@vermont.gov.
ROSS Competency Maintenance

Angela Leek, CRCPD Homeland Security/Emergency Response Committee 4
ROSS Quarterly Problem Set – June 2023

<table>
<thead>
<tr>
<th>ROSS Quarterly Problem Set</th>
<th>June 2023</th>
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<tbody>
<tr>
<td>Answers Due By:</td>
<td>8/31/2023</td>
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</table>

Submit Answers and Supporting Attachments to:

- Your State ROSS Task Force Leader or
  - Angela Leek – angelaleek@summitet.com
  - Bill Irwin – william.irwin@vermont.gov
  - Matt McKinley – mattheww.mckinley@ky.gov

Questions about problem:

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Task Sign Off Potential

Successful completion of this quarterly problem allows you to request signoff

ROSS Position Task Book (PTB)

Task #1, 9, 18, 19, 21, 24

Expected Answer Format

Two one- to two-minute briefings presented in person, via live teleconference or recorded in a video and sent to the reviewing ROSS.

Problem Set Instructions

1. Watch the eight Modeling Products – Web-based training videos at [https://responder.llnl.gov/training](https://responder.llnl.gov/training)

- Web Based Training
  - Modeling Concepts
    - Course Introduction (2 min)
    - An overview of the course objectives and outline.
    - 1. Modeling Concepts (14 min)
    - Learn about the basic elements of atmospheric dispersion models, including model input parameters and assumptions, release characteristics, meteorological conditions, and atmospheric stability.
    - 2. Types of Atmospheric Dispersion Models (14 min)
    - Learn about five types of atmospheric dispersion models: the Gaussian plume model, the Gaussian puff model, the disk-tower fallout model, the Lagrangian particle model, and the computational fluid dynamics model.
    - 3. Dose Calculation Models (26 min)
    - Learn about radiation dose concepts, dose pathways, and model parameters affecting dose calculations.
    - 4. Model Verification, Validation, and Accuracy (7 min)
    - Learn about verification and validation of dispersion models and causes of uncertainty in dispersion and dose models.
    - 5. Protective Action Guides and Response Levels (11 min)
    - Learn about protective action guides used in the US and how response levels are derived to convert them to values that can be directly measured in an incident.
    - 6. Use of Measurements with Models (8 min)
    - Walk through an example of using field measurements to adjust model input parameters in the model-measurement cycle.
    - 7. Model Products (27 min)
    - Learn about the different types of products that may be developed in a response.
    - 8. Comparison of Different Models (16 min)
    - Review two examples where different models are used for the same scenario, and learn about the causes of differences in the products developed.
2. Access practice data products on radresponder.net under:
ROSS Organization – Documents – Q3 Products_June2023
3. Review the data products available, and select those appropriate to use for a 5-to-10-minute briefing to address the following situation:

It is T+3 hours after a nuclear detonation in Anywhere City, USA. The dose assessment team at the Emergency Operation Center has been asked to provide an overview of the standard maps and products that have just been delivered by the IMAAC. The public has currently been advised to shelter in place and workers are planning rescue missions into the affected area. In addition to providing an overview of where the products came from and what situational awareness gained from the available products, decision-makers and mission planners have the following questions that need to be addressed in your presentation and verbal briefing:

1. What products should we be using or not using at this time
   a. (T+3h and planning for T+12h)

2. Where should emergency workers focus their rescue operations?
   a. Are there any areas they should avoid?
   b. How does timing affect their mission priorities?

3. Should we evacuate the public in a radius around the detonation site now (T+3 hrs)?
   a. If not, why?
   b. When would be the optimal time to consider evacuating people from specific areas?
   c. If yes, what radius distance and where should the people go?

REMEMBER – you can reach out to other ROSS for questions and assistance
Closing Remarks
Steve Chase, FEMA Office of Emerging Threats

Any Questions:
Contact FEMA-ROSS@FEMA.DHS.GOV