

CBRNResponder

CBRNResponder is a single, secure platform for all chemical, biological, radiological, and nuclear (CBRN) incident data sharing and multi-hazard event management.

CBRNResponder integrates with federal assets and incorporates national-level policy

and guidance, providing a one-stop shop for all CBRN planning, preparedness, and operational tools and resources.



History

Following the Fukushima Daiichi Nuclear Power Plant (NPP) Disaster in 2011, the emergency management community recognized that it lacked the means to collect, share, and organize data in real-time to support protective action decision-making. This realization led to the development of a suite of tools:

RadResponder, ChemResponder, and BioResponder. These tools, along with the Interagency Modeling and Atmospheric Assessment Center¹ (IMAAC) Portal, are organized under CBRNResponder, a free-to-use, web-based platform.

Partners

CBRNResponder is sponsored by the FEMA Office of Emerging Threats (OET) and is steered by committees with representation from: Department of Homeland Security (DHS) Science and Technology Directorate (S&T) and FEMA; Environmental Protection Agency (EPA); Department of Energy (DOE) National Nuclear Security Administration (NNSA) and Office of Radiological Security (ORS); Defense Threat Reduction Agency (DTRA); the Combating Terrorism Technical Support Office Technical Support Working Group (CTTSO TSWG); and other state and local partners.

Contact CBRNResponder at support@cbrnresponder.net

For real-world emergencies, call the CBRNResponder 24/7 Emergency Support Hotline: (855) 485-9499

¹ Learn more about IMAAC at: https://www.fema.gov/sites/default/files/documents/fema_imaac_fact-sheet.pdf

Services at a Glance

CBRNResponder supports an array of capabilities through its web-based platform and mobile application. Users can:

- **Coordinate Operations:** This includes the uploading of equipment information, managing of personnel, collecting inventories and observations, assigning personnel and equipment to field teams, tracking of responders and monitoring of dosimetry and hazardous materials (HazMat) data in the field.
- **Upload Products:** Users can upload Geographic Information System (GIS) files, Emergency Response Guide (ERG), Areal Locations of Hazardous Atmospheres (ALOHA), or DTRA products, as well as information about critical infrastructure and weather data. Users also have access to a HazMat incident database where they can view past incidents that other users have elected to share with the community.
- **Utilize IMAAC Portal:** Federal dispersion modeling and hazard prediction products are available on CBRNResponder through the IMAAC Portal. These models and products represent the federal position during actual or potential incidents involving hazardous atmospheric releases.
- **Integrate Data:** Through either the website or mobile applications, users can upload records individually or in bulk. This includes information from surveys, samples, spectra, dosimetry, observations, data sets, field screenings, chemical readings, chemical identifications, and situation reports (SITREPs). Fixed monitoring sensors and integrated application program interface (API) equipment can be set up to deliver data directly into CBRNResponder. The mobile application uploads data in real-time and saves data locally when no internet connection is detected.
- **Assess Data:** The data assessment process can be customized, with the option to add multiple layers of review before approval and limit which data is shared with different response partners.
- **Perform Radiological Simulations:** Users can simulate radiological events and radiation readings over a defined geographical area for use during training and exercises. The conditions of the simulation can be set using a source file or pre-set template (e.g., a complex Radiological Dispersal Device [RDD] scenario or a small NPP scenario).
- **Conduct Indoor Monitoring:** Users can place data points on uploaded floor plans (PDFs image files) at a high fidelity to indicate exactly where readings were taken. Points can be moved between floor plans and users can add information to the event map with drawing tools and other details, such as pictures taken on site.
- **Create a Common Operating Picture (COP):** The platform allows data to be shared in real time and integration of operations between pre-established partners, including: local (e.g., fire, police, and county public health departments), state (e.g., state police, state department of emergency management, etc.), and federal (e.g., DOE Radiological Assistance Program [RAP] teams, EPA, etc.).

CBRNResponder in Action

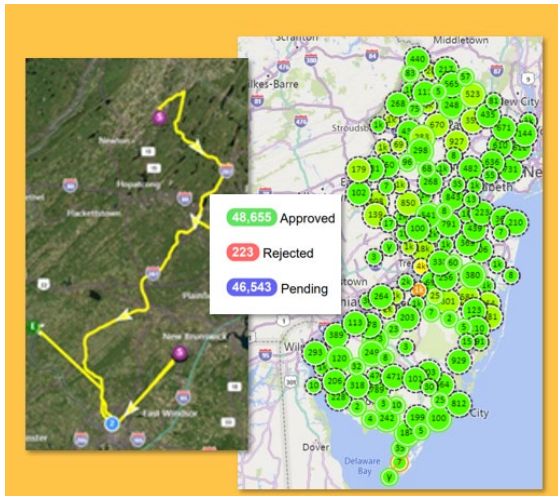


Figure 1. New Jersey Background Monitoring

Beginning in 2021 and continuing in 2023, the New Jersey Background Monitoring effort was undertaken to establish levels of background radiation in the state during National Background Week. Over 95,000 measurements were uploaded across two background weeks in a single event, with ~49,000 approved surveys and 223 rejected surveys. Responder tracking paths were successfully enabled for 21 responders with over 121,000 tracking points, and the field team and equipment API capabilities were utilized.



Figure 2. Colorado State Stadium Monitoring

In a hidden source and search exercise in the Colorado State Stadium, CBRNResponder was used to map the stadium with high granularity, showing it is useful in assessing Preventative Radiological Nuclear Detection Equipment and monitoring special events.

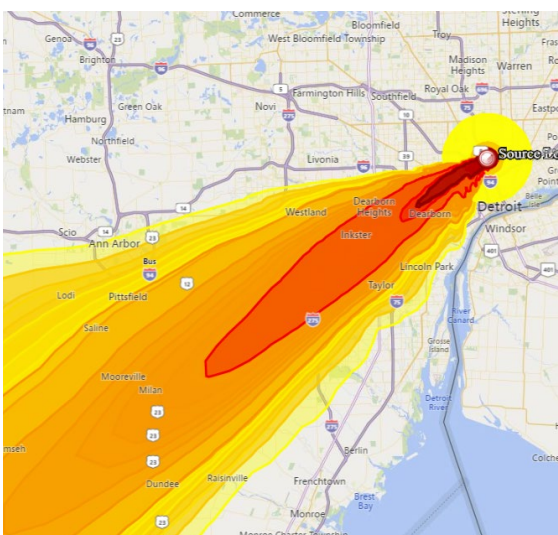


Figure 3. Vibrant Response Exercise Data Sharing

In 2019, over the course of two weeks, RadResponder simulated thousands of radiological survey measurements and responder dose readings to provide a more realistic operational environment for the CBRN Response Enterprise during the U.S. NORTHCOM-led exercise Vibrant Response. For the first time in this exercise series, RadResponder also provided a single COP between state and federal (Department of Defense and others) response assets, sharing raw data as well as products produced by the IMAAC and the Federal Radiological Monitoring and Assessment Center (FRMAC).