

FIRE AND HAZMAT RESPONSE

BEFORE, DURING AND AFTER



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INTRODUCTION

Every fire or hazmat response requires a rapid response to initially address the incident, a coordinated and efficient effort to properly handle the situation once on-scene and the ability to evaluate the response once the event has been resolved.

Before arriving at the scene, responders need to be prepared for what they will be dealing with. And new information may be coming in at any time which can change the approach on how to handle the incident. This means fire and hazmat teams need to be prepared for anything, especially when every second matters and lives are on the line.

During the incident, speed and efficiency are critical. The command center needs to be set up as soon as possible so the incident can be fully evaluated with additional information. Accurate, real-time data is crucial to ensure all stakeholders have the correct information to make informed decisions

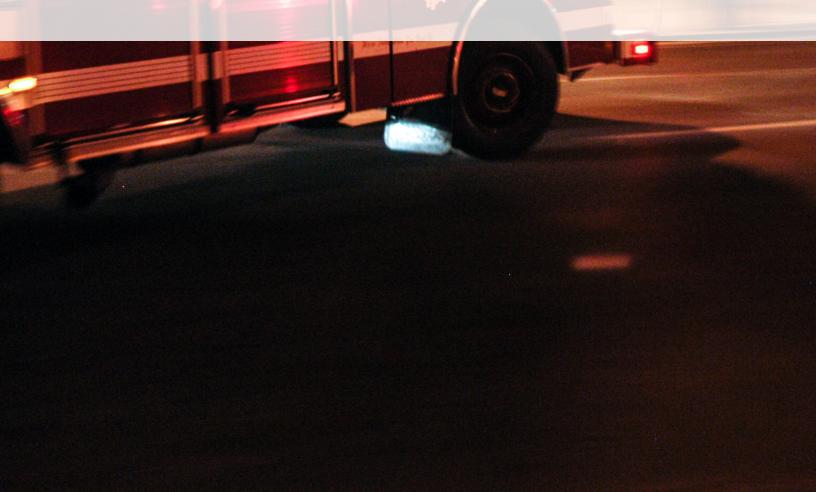
After an incident has been resolved, it needs to be evaluated and analyzed to look for opportunities to improve for the next emergency. Data and visibility of all activity during the incident are critical for retrospective evaluation for improved future response strategies.

Before, during and after – the three critical phases of a fire and hazmat response all require information and the proper equipment to take control of the situation and ensure the responders, any neighboring communities and the environment are safe and protected.





FIRE AND HAZMAT RESPONSE – BEFORE PREPARATION IS MORE THAN KEY, IT'S VITAL





From chemical fires to gas leaks and explosions, emergency responders are the first on the scene and take control of potentially devastating situations. And during those critical moments, preparation is more than key, it's vital. An effective response starts before your team even arrives at the scene--because every second matters when it comes to saving lives and protecting the Hazmat team, the environment, and neighboring communities against potential harm. The following are four key ways to prepare before addressing a hazmat incident:

#1 Keep the right gas monitoring equipment on board

In any fire or hazmat incident, some of the most critical pieces of information will likely come from gas detection devices. Teams on the ground, at the command center, and across multiple agencies will depend on gas monitoring information to make critical, time-sensitive decisions. Data from these devices can help improve response speed and effectiveness to determine the appropriate courses of action—and potentially save lives.

It is critical to have the right devices on hand before you even get to the scene to avoid impeding your team from focusing on more important tasks. For an immediate advantage, choose devices that are built to meet the unique needs of a chemical emergency or hazmat response, including lightning-fast setup and instant connectivity. Not every gas monitor on the market stands up to the test. For example, many gas monitors require complex, time-consuming setup procedures and rely on mesh or Wi-Fi networks, which can make it difficult to connect to a command center if there is any interference from obstacles like buildings, trees, and other topographical features.



#2 Check your battery life

In emergency situations, your team should be focused on human life, not battery life. Most gas monitors only provide 16-20 hours of those crucial gas readings, while fire and hazmat incidents can last at least 24-48 hours. This means you'll likely need to charge your device batteries during an incident, frequently check the remaining battery life to avoid downtime, and carry backup devices for when the batteries inevitably die. Hauling around extra devices adds unnecessary costs and takes up valuable storage space in your hazmat vehicle, and setting timers to check batteries distracts the team from the task at hand.

Travel lighter and stop spending precious time checking batteries during an incident by choosing an area monitor with battery life measured in days, not hours. For example, the G7 EXO from Blackline Safety provides 100 days of continuous cloud-connected run time, so your team can stay focused on the immediate response.



#3 Prep your devices en-route

Once the team is dispatched and en-route, turn on devices and get them connected so you are ready to react to the incident as soon as you pull up to the scene. As you receive more information and details about the incident, choose the appropriate sensors to match the gas risks of the scenario--whether responding to a carbon monoxide or natural gas leak, a chemical fire, or a potentially explosive incident.

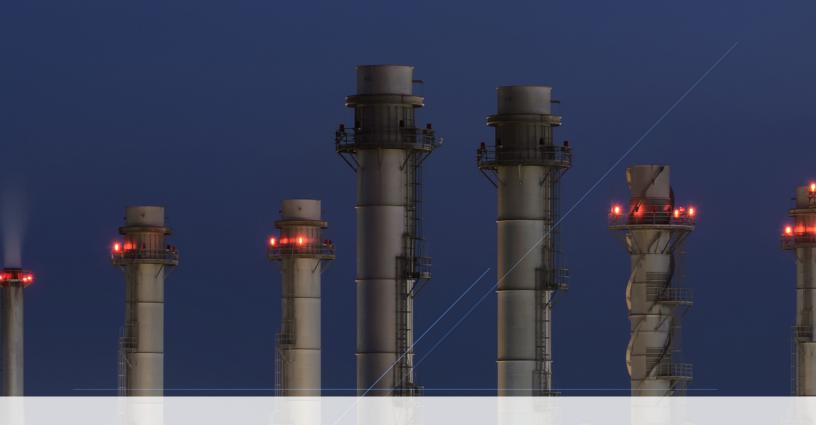
To save valuable prep time, choose an area monitor with pre-calibrated sensor cartridges that can be swapped out inseconds. As new information comes in, your team needs to be able to prepare for the exact gas risks of the scenario. Since the plug-and-play sensor cartridges are interchangeable between the G7 personal gas detectors and the EXO area monitor, you don't need to carry around backup equipment and can pick and choose the cartridge for each device that is right for the incident. With 20 pre-calibrated sensors available, the G7 and G7 EXO ensures your team is ready for any situation before you even arrive.

#4 Be ready to drop and go

When the team arrives at the scene, your gas monitoring devices should be ready to drop and go, so you can quickly evaluate the situation, set the perimeter, and determine the appropriate course of action. Speed of deployment is critical – mere minutes can mean the difference between life and death. Choose area monitors that the team can simply place where needed, without worrying about settings or connectivity. With the G7 EXO area monitor, just drop the device where you want, push the setup wizard, and the device is connected in a few minutes and instantly visible on the Blackline Live portal from anywhere without range limitations.

Preparing for a chemical emergency or hazmat incident begins with choosing the right portable gas detectors and area monitors. Once the team is dispatched, using transit time to ensure equipment is ready as soon as you arrive. Having the right equipment in your arsenal will enable a faster overall response, help the team make informed decisions quickly, and protect the safety of the responders and the local community.





FIRE AND HAZMAT RESPONSE - DURING

HAVE TOTAL COMMAND THROUGHOUT AN INCIDENT





When a response team arrives on the scene of a chemical release emergency or hazmat incident, they must quickly evaluate the situation and execute a targeted approach to mitigate the situation as quickly as possible, as well as protect the surrounding communities and ensure the safety of the first responders on scene. This must be done while maintaining clear communication with the command center and other agencies, potentially from the local, state and national levels as well as government and media. Incorrect, missing, or outdated information can lead to misinformation being communicated, potentially leading to serious and costly consequences.

During a hazmat incident, response teams rely on access to real-time data from both personal gas detection and area monitoring devices to get a good picture of the situation and make swift, effective decisions. Having the right equipment is critical, but equally important is how they use that equipment during the incident, both down-range by the responders and by those at the command center interpreting the data being reported.

Here are the key steps to take once the response team is on the scene:

#1 Waste no time setting up a perimeter

Once the response team is on the ground, they cannot waste time setting a perimeter and deploying area monitors. Devices should always be ready to go, calibrated and charged. Equally important is being able to check connectivity in transit to the scene to allow for a quick drop-and-go deployment.

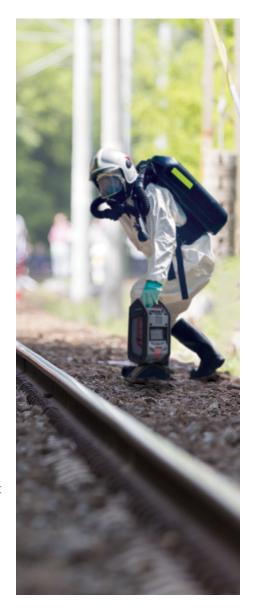
Every responder should be fully trained on what type of gas detectors or area monitors they have and what limitations and capabilities they have to ensure proper deployment. For example, some devices, like the G7 EXO area monitor from Blackline Safety, can connect from anywhere with no range limits using 3G/4G cellular or satellite connectivity for remote areas, while other manufacturer's devices can be limited to a maximum distance of two-miles and other restrictions due to inherent design or man-made constraints, such as wireless signal obstructions.

With G7 EXO, it's simple, just place the device(s) wherever it is needed and push the setup wizard so the Hazmat team can focus on the incident, not the equipment. The device will be connected in a few minutes and is immediately visible on the Blackline Live portal being viewed at the Command Center.

Other gas detectors have range limitations and can experience interference from topographical features like trees, hills, and buildings. For these devices, the response team will need to make sure the devices are connected and in range of the command center before they move on, which can take essential time away from their response mission.

After the perimeter is set up, the hazmat team needs to focus on the task at hand - saving lives and taking control of the incident. Some area gas monitor's battery only last for 16 hours but when the incident could last for days, your team should be focused on human life, not battery life. You probably won't need the full 100-day battery life of G7 EXO but knowing it's there, frees your team up to focus on top priority work rather than needing to replace a battery or swap out equipment during a time when every second counts.

In short, know your devices and how to use them--and factor in the time it will take to deploy the devices correctly and how much maintenance they require once deployed.





#2 Monitor the incident live from the command center

Once the perimeter is set, the response team, together with those in command, will rely on instrument readings to make critical decisions and determine the best course of action, including whether or not to issue shelter-in-place and/or evacuation orders. The area monitors deployed at the scene transmit a continuous stream of real-time data to both the command center and any mobile device as the situation evolves. This gives the response team greater situational awareness to effectively monitor the incident, make time-sensitive safety decisions, and adjust the team's response based on real-time data. For example, real-time data from gas detectors or area monitors can help in avoiding false evacuations while also ensuring that everyone who does need to evacuate can get out quickly and safely.



However, keep in mind that many gas monitors on the market today do not provide a truly "live" experience for all stakeholders, but rather require screenshots to be communicated to other parties at set intervals rather than just supplying a live link so everyone has the most up-to-date information. While some latency may be acceptable in other area monitoring applications, in hazmat scenarios, any delay and lack of information can be detrimental to the safety and effectiveness of the operation. Critical safety decisions depend on knowing what is happening now, not a minute ago.

Data from area monitors must be immediately visible in an intuitive software interface, like Blackline Live, that clearly displays the exact location and status from every device along the incident's perimeter or those worn by First Responders in the hot zone.

#3 Easily communicate to all parties with real-time reporting

Keeping impacted parties informed throughout an incident is critical to ensure a coordinated hazmat response and avoid missing, misunderstood and inaccurate information. However, ensuring clear and effective communication can be extremely time-consuming, taking the incident commander's focus away from the task at hand.

Instead of providing manual updates, having the ability to share the live data, if practical, from your monitoring devices with relevant agencies and jurisdictions can eliminate what might otherwise cause distractions. This would allow all stakeholders to have access to the same shared datasets and insights at the same time. For example, with Blackline Live, the incident commander can easily share access to live reports that continuously and simultaneously update multiple groups regardless of their location. This allows teams that aren't on scene to assist in evaluating the incident and not only saves time for everyone involved, but it may also reduce the risk of sharing incorrect or outdated information that is critical towards informed decision-making.



FIRE AND HAZMAT RESPONSE – AFTER RETROSPECTIVE ANALYTICS AFTER AN INCIDENT



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Throughout a hazmat response, portable gas detectors and area monitors give first responders and command centers the data and visibility they need to make time-sensitive decisions in the moment. In addition, when each team member wears a personal gas monitoring device that also tracks their location in real-time, it creates a complete connected safety ecosystem.

During the incident, these personal monitoring devices can help locate, position, and mobilize resources on the map. The devices automatically detect if a team member has fallen and needs help if they don't acknowledge they are okay, a responder can activate an SOS Alert to notify others that they need backup. In the moment, personal monitoring devices protect the safety of each response team member even if they are separated from the rest of the team.

Connected safety devices, both personal and area monitors, generate a massive amount of data that can have immense continued value--even after the hazmat response is complete. Hazmat teams can (and should!) use data from these devices to evaluate the effectiveness of their response in retrospect, identify opportunities for improvement, and define data-driven strategies to improve future responses.

The following are 3 things to look for when choosing a connected safety solution that will provide the data and insights:

#1 A complete connected safety solution

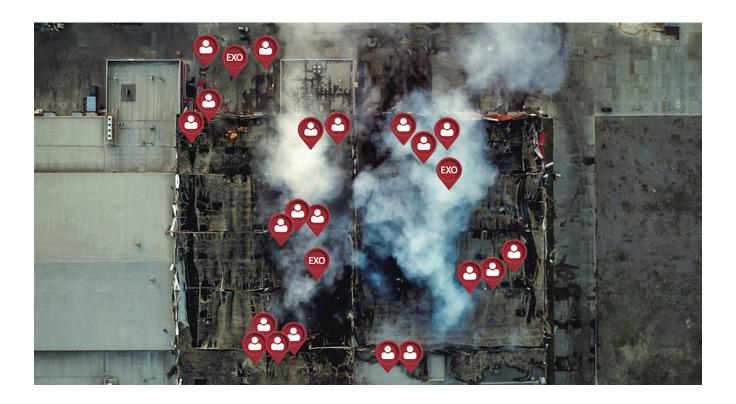
Getting valuable insights out of retrospective analytics starts with collecting the needed data--and the right data--to create a detailed picture of every aspect of the incident and the response. A complete connected safety solution for fire and hazmat response will include a network of area monitors and personal monitoring devices worn by every member of the team.

After the incident, location data from personal devices can be analyzed alongside the gas data from area monitors to visualize the entire response, including team member locations and movements relative to the hazard, in order to identify inefficiencies in the response. For example, team member location data can help the command center better understand where resources were located throughout the incident to understand how to better position and mobilize team members and increase efficiency and response speed for future incidents.



#2 Robust analytics and reporting interface

Gathering data from a connected safety solution is critical, but just having raw data from the connected safety devices isn't enough. In fact, the sheer volume of data generated by these devices can be overwhelming without a powerful analytics platform that can help extract meaningful insights from that data. Look for connected safety devices that are backed by a robust analytics and reporting interface to extract valuable insights that the team can immediately use to improve their responses. This should also include full compliance reporting to confirm all devices are being bump tested and calibrated properly according to a pre-determined maintenance schedule.



#3 Customizable insights

Finally, look for a connected safety solution with a reporting interface that can provide the custom insights and data visualizations to meet your unique needs. For example, at Blackline Safety, we not only provide a complete suite of connected safety devices for fire and hazmat response, we also have a team of data scientists, called Blackline Vision, who are dedicated to creating customized dashboards to help customers get the most out of their data.

While real-time data enables better decision making and a faster response during an incident, retrospective analytics can help hazmat response teams identify areas of improvement and increase the effectiveness of the team's responses to future incidents. The key is to implement a complete safety solution, with connected gas detectors and area monitors, that provides the data, insights, and customization needed to give you the exact insights you need.



CONCLUSION

Fire and hazmat incidents are complicated, dangerous and require a comprehensive strategy to ensure the safety of all involved. This requires being prepared with the proper equipment that can get the job done because you need real-time, accurate information from your gas detection devices. Connected personal gas detectors and area monitors provide invaluable insight, both during and after an incident, so leaders can make quick and informed decisions to protect the response team and the community.

Protect those that protect us.



ABOUT Blackline Safety

Blackline Safety is a global safety technology leader. We provide comprehensive live monitoring and wireless gas detection to help teams working in hazardous environments respond to emergencies in real-time and manage efficient evacuations. Our talented team of designers and engineers create and manufacture everything in-house, from wearable technology and personal gas detectors to cloud-hosted infrastructure and web-based interfaces for the global industry.

We have created the world's first turnkey, work anywhere safety monitoring solution that offers 3G wireless, remote gas detection, a two-way speakerphone and live monitoring to meet the demanding safety challenges of organizations in over 100 countries. Our vision is to become the leading supplier of wireless gas detection products in the world, and to that end, we offer the broadest and most complete portfolio in the industry

EXPLORE FIRE & HAZMAT SOLUTIONS from Blackline Safety



