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BEST PRACTICE

Incident Site Safety Planning: Personnel Accountability

PURPOSE

Discusses pre-planning initiatives for developing and improving incident site personnel accountability.

SUMMARY

Personnel accountability enhances site safety by providing the Incident Management Team (IMT) with a system to track, account, and control the location, function, and welfare of all emergency personnel operating at an incident. Pre-incident personnel accountability planning enables response organizations to develop, implement, and enforce a personnel accountability system (PAS).

DESCRIPTION

Personnel accountability is an effort to improve the safety of emergency responders by keeping track of their locations and assignments when operating at an incident site. The timely implementation of personnel accountability processes prohibits a “freelance period” when responders act independent of supervision. Personnel accountability also facilitates the quick identification and removal of injured or incapacitated response personnel from hazardous environments.

Personnel accountability should be managed within the Incident Command System (ICS). The Incident Commander (IC) is ultimately responsible for personnel accountability at an incident scene, although the function may be delegated to a designated accountability officer (AO). An accountability sector should be designated during larger incidents. Regardless of an event’s size, personnel at all levels of an incident response should operate within the PAS.

Emergency response organizations must implement and enforce personnel accountability at every incident to which fire and rescue personnel respond. This Best Practice demonstrates how organizations should pre-plan for personnel accountability by discussing:

- The core principals of personnel accountability;
- The semantics of adopting and developing a PAS; and
- The incorporation of personnel accountability during regular training evolutions.

Core Principals of Personnel Accountability

Site safety experts have identified four core principals that influence the success of personnel accountability at any given incident site. These principals should form the basis of an organization’s pre-incident personnel accountability planning. They include:

- **Team integrity:** Personnel accountability is dependent upon teams of responders operating together at an incident site. Response organizations should ensure that team continuity is practiced during all aspects of an incident response, including when teams operate in hazardous areas and when teams are assigned to rehabilitation.
- **Operational discipline:** In order to prevent accountability breakdowns, responders must strictly adhere to the IC's and other Command officer's orders at an incident site. Response organizations should stress operational discipline throughout training in order to ensure that responders do not act independent of the IC during critical moments of an emergency response, such as a "mayday" event.
- **Regular communication:** Personnel must continuously communicate their on-site locations in order for team officers and the IMT to accurately maintain personnel accountability. Response organizations must train personnel to practice proper radio discipline and always remain aware of their general location at an incident site.
- **Immediate implementation:** The first arriving unit at an incident scene must implement personnel accountability procedures. Immediate implementation prevents first arriving personnel from operating outside the PAS and/or IC supervision and should be included in an organization's standard operating procedures (SOPs).

Building a Personnel Accountability System

A successful PAS enables the IMT to know if and when a responder or group of responders become lost, trapped, or injured during the course of an incident response. Response organizations can develop a PAS or improve upon an existing PAS by selecting an accountability tracking system and drafting formal accountability operating procedures.

Accountability Tracking Systems

Personnel accountability is dependent upon emergency response organizations having a standard method of tracking responders at an incident site. This requires organizations to select a tracking system in advance of an incident. It is imperative that organizations choose a tracking system that fits their specific needs and mode of operation. Accordingly, organizations should consider a host of factors before selecting or upgrading their tracking systems. Those factors include, but are not limited to:

- **Cost:** Tracking systems that incorporate advanced technologies often carry a high price tag and can be costly to maintain. Organizations should assess their financial resources before choosing a system.
- **Interoperability:** Tracking systems that employ tags, clips, or magnets may become problematic during mutual-aid events. Organizations that rely heavily on automatic/mutual-aid should develop tracking systems in collaboration with partner agencies or examine what neighboring jurisdictions utilize and implement an interoperable system.
- **Organizational composition:** Organizations should assess which tracking systems best suit their size and employee pool, whether that includes career personnel, volunteers, or a combination of both. For example, organizations that consist primarily of volunteers who arrive at an incident scene separately should avoid unit based accountability approaches, such as passport systems.
- **Staffing availability:** Some tracking systems are more labor intensive than others. Organizations should choose a system that will work with the number of persons generally available at an incident scene.

Types of Tracking Systems

Response organizations should be aware that several variations of accountability tracking systems are used nationwide. They can be grouped into two general categories: manual systems and technology-assisted systems.

Manual Tracking Systems. Manual tracking systems rely on persons transferring individual identification tags or cards to company boards, “passports,” or some other central location. These systems are reliant on ancillary equipment such as:

- Status/accountability boards;
- Documentation/worksheet forms; and
- Radio communication.

Many organizations augment their accountability systems with visual aids. For example, the Illinois Mutual Aid Box Alarm System’s (MABAS) [Regional PAS Policy and Procedure statement](#) recommends that participating agencies use “helmet shields,” plastic shields that reflects a distinguishing number, mark, or symbol. This shield, when displayed on individuals’ helmets, helps to identify on-site companies and teams more easily. Many organizations color code their helmet IDs to differentiate officers and emergency disciplines.

Manual tracking systems are widely used in the emergency response community because they tend to be low cost and do not require a great deal of training, resources, or maintenance. However, in order to be effective, manual tracking systems must be accompanied by radio communication and accountability operating procedures. If they are not, manual systems are unable to track personnel after they move beyond entry/egress checkpoints into closed structures.

Most career fire departments have adopted some variation of a PASSPORT accountability system. A “passport” is a small board or card on which members assigned to a certain team affix their individual IDs. Passports usually detail what company members are from, their team designation, their assignment, and the time of their arrival, entry, and exit from hazardous areas. Departments generally have primary passports that are used at every incident and back-up/reserve passports used when teams do not operate as a unit or the primary passport is lost. Many organizations also use color coding to differentiate primary and back-up passports.

Technology-Assisted Tracking Systems. Systems that combine manual accountability processes with emerging technology can also be utilized for accountability purposes. A wide range of technologies are currently being considered and/or used for personnel accountability, including:

- **Bar-coding:** Bar-coded ID tags combined with portable scanners and computer software enable the IMT to track who is on site, their training levels, how long they have been on site, and their air supply status. Alarms built in to the system can alert the IMT when an individual or team has been operating too long.

Accountability Identification Tags

Most organizations include an individual’s name, rank, and organizational affiliation on accountability ID tags. Innovative practices include:

- [The NOVA Fire and EMS regional coalition](#) color codes their ID tags to differentiate officers, emergency medical service personnel, fire personnel, and those not certified to enter a hazardous environment.
- [Burlington County, NJ](#) includes medical information on ID tags, including medical allergies, disabilities, or other pertinent medical history.

- **Radio-frequency identification (RFID):** RFID accountability systems, analogous to anti-theft systems used in retail stores, passively register when responders pass a specified point. This is especially useful at large-scale incidents where responders are operating a remote distance from the IC.
- **Global Positioning System (GPS):** GPS technology can accurately track the location and movements of responders within a few feet of their position and display it on a computer screen. Advanced systems can also monitor breathing rates, air supply, and interior temperature.

Technology-assisted systems can process, store, and display a great amount of information regarding the location, welfare, and history of on-site responders. They facilitate more accurate post-incident reports and investigations, as well. However, concerns about their possible failure in extreme environments lead many organizations to either disregard them or augment them with a manual system.

For a more in depth discussion of accountability tracking systems, see The United States Fire Administration manual "[Personnel Accountability System Technology Assessment](#)." The publication provides an introduction to and explanation of the range of technologies that are designed for incident site personnel accountability.

A number of retailers can assist organizations in the development of their accountability tracking system. A partial list of available vendors can be found at the firefighter website www.firefighting.com. Alternatively, many manual tracking systems can be developed in-house at a minimal expense.

Accountability Operating Procedures

Response organizations should adopt accountability operating procedures in addition to their accountability tracking system. Pre-planned operating procedures help to ensure that personnel accountability is implemented quickly and maintained throughout an incident. Accountability operating procedures should discuss the purpose of the accountability tracking system, as well as its implementation, associated equipment, and expansion during larger incidents. Accountability operating procedures should also address individuals' specific responsibilities within the accountability tracking system and the following fundamental elements:

- **Accountability Officer:** Operating procedures should address the creation of an AO, detail qualifications needed for the position, and summarize the AO's duties. An AO's duties may consist of tracking and documenting on-scene personnel's location, duties, and time in/out of hazardous areas.
- **Documentation:** Operating procedures should emphasize the importance of personnel accountability documentation. Some organizations accomplish documentation via "accountability reports" that list the names of the IMT, the number of on-scene teams, and the frequency of PAR surveys during an incident. Proper documentation benefits the post-incident analysis process and can safeguard organizations from legal issues in the event of a responder fatality.
- **Personnel Accountability Reports:** Personnel Accountability Reports or "PARs" are periodic communication prompts that account for all members operating at a scene, not just those in hazardous areas. They confirm the location, cohesion, and disposition of all teams. Accountability operating procedures should define at what

The [Township of Rochester, PA Volunteer Fire Department](#) has adopted a standardized "[accountability sheet](#)" AOs use during an incident. The sheet has space to document the date/time accountability was started, when PARs are conducted, the location and assignment of active teams, and the type of air packs used by team members.

intervals PARs will be conducted during an incident, although incident conditions may dictate the exact length between PARs. Additionally, many organization's accountability procedures require PARs in the event of the following:

- A switch from offensive to defensive response operations;
- The occurrence of a sudden hazardous event, such as flashover, backdraft, or collapse;
- When tactical benchmarks are reached; and
- When the IC feels it is necessary.

In the event of a lost, trapped, missing, or downed responder, completing a PAR will be difficult due to increased radio traffic. To counteract this phenomenon, some response organizations have adopted a "Reverse PAR" or "No PAR" approach that can be used during mayday incidents. Only teams that are missing a member report to the IC during a Reverse PAR. This approach prevents excess radio traffic during rescue operations, while still providing the IMT with knowledge of missing personnel.

- **Scene Control:** Operating procedures should stress the importance of scene control measures, primarily staging and restricted entry procedures. Such procedures mitigate many of the primary barriers to obtaining and maintaining personnel accountability, including self-dispatch and responders operating independent of the IC.
- **Team Concept:** Operating procedures should mandate that responders work in teams during all stages of an emergency response. This will involve a discussion of what constitutes a team and how it is formed, assigned, and deployed at an incident site.

Well-defined staging procedures facilitated personnel accountability during the response to the [Rhode Island Station Club Fire](#). Emergency medical service units were staged in a restaurant parking lot near the club and dispatched to the scene as needed. This prevented emergency vehicles from cluttering areas near the club, thereby reducing confusion regarding on-scene resources.

Accountability Kits. Many organization's SOPs mandate the creation and deployment of "accountability kits" or "make-up kits." Kits generally consist of accountability related equipment such as replacement identification tags, status boards, and markers, as well as a bag or case large enough to transport such materials. These kits provide organizations with a means to replace individuals' lost or damaged accountability equipment during an incident. They also facilitate the inclusion of mutual-aid personnel or volunteers into an organization's tracking system. Accountability kits are often carried in the IC's vehicle or larger emergency apparatuses.

Available Resources. There are a number of available resources emergency planners can use to develop or update their organization's accountability procedures. Contacting area response organizations, state or local training academies, and the National Fire Academy can help organizations create or refine their procedures. Additionally, planners should take note that NFPA 1500, Fire Department Occupational Safety and Health Program, and NFPA 1561, Fire Department Incident Management System, mandate certain guidelines regarding personnel accountability during emergency operations. All jurisdictions' accountability operating procedures should meet those standards, along with all other standards that apply to their geographic location.

A number of jurisdictions have posted their accountability SOPs online, including [Charlottesville, VA](#) and [Phoenix, AZ](#). The state of [New Jersey](#) has posted its statewide guidelines on the web, as well.

Including the PAS in Training

Personnel accountability must be reinforced during response organizations' regular training. Organizations should include their PAS during training evolutions in order to:

- Build an awareness of problems that result from not maintaining on-site personnel accountability;
- Familiarize personnel with personnel accountability SOPs and the equipment used to track personnel at an incident site; and
- Teach command officers, team officers, and other responders their respective roles and responsibilities within the PAS.

Response organizations can improve their overall personnel accountability proficiency by emphasizing the abovementioned "core principals of personnel accountability" during training sessions. In addition, the following personnel accountability issues should also be incorporated into training evolutions:

- **Radio discipline:** Training personnel to effectively communicate their identity and position during an incident allows the IMT to accurately track incident site movement. Training should also emphasize the importance of not congesting communication channels with unnecessary chatter.
- **Self-awareness:** Training should reinforce the importance of personnel remaining cognizant of their general location during an incident. This allows personnel to better communicate their whereabouts in the event of a mayday.
- **Staging:** Training officers to successfully stage incoming personnel and personnel to strictly adhere to those staging protocols prevents accountability problems inherent to apparatus congestion and responder self-assignment at an incident site.

"Train-the-trainer" courses are available to improve the efficacy of a response organization's accountability training efforts. Response organizations should contact local fire academies, their states' fire marshal office, and/or their states' training office to find out what is available in their area. A listing for each state's fire marshal office and training office can be found at the United States Fire Administration's [State Points of Contact database](#).

The [ABBET-RIT organization](#) offers a four-hour course dedicated to personnel accountability. The course is available to all disciplines and is NFPA 1561 compliant.

Accountability Failures during Recent Large Scale Incidents

Difficulties at large-scale incidents have brought personnel accountability to the forefront of emergency response discussions. After-action reports from the September 11, 2001 attacks and the 2003 Rhode Island Station Club Fire highlight several steps jurisdictions should take to improve personnel accountability at large-scale incident sites, including:

- **Develop common accountability systems and procedures:** Regional or statewide accountability plans mitigate interoperable issues between jurisdictions, ensuring that mutual-aid partners can "plug-in" to the accountability system at any incident. Shared accountability systems and SOPs enable accountability to be maintained at the Command level.

The [NOVA Fire and EMS regional coalition](#) and [ABBET-RIT organization](#) are two examples of regional efforts to standardize accountability systems and procedures.

For more on perimeters and the logistics of establishing perimeters, see the *Lessons Learned Information Sharing Best Practices*: "[Incident Site Security: Outer Perimeters](#)" and "[Incident Site Security: Inner Perimeters](#)."

- **Enforce staging and perimeter procedures:** These procedures prevent individuals and units from self-dispatching and operating independently of the IC. It also prevents responders and the public from entering dangerous areas without the proper personal protective equipment and supervision.
- **Upgrade existing PAS:** New technologies can resolve problems encountered during 9/11 and provide the IMT, other emergency managers, and rescue teams with more and better information at incident sites. These include thermal imaging technology, card-swipe or bar-code systems, identification-tag reader systems, and GPS.

RESOURCES

Standards and Regulations

NFPA 1500 Standard on Fire Department Occupational Safety and Health Program

- Details health and safety standards for fire companies including requirements for protective clothing and equipment, emergency operations, and medical and physical requirements.

NFPA 1521 Standard for Fire Department Safety Officer

- Provides minimum requirements for the assignment, duties, and responsibilities of fire department incident and health safety officers.

NFPA 1561 Standard on Fire Department Emergency Management Systems

- Provides broad guidelines based on ICS concepts for what should be included in any emergency management system; the appendix gives examples of successful systems currently in use.

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