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Developing a Post-Incident Analysis Process

for the

South Milwaukee Fire Department

Joseph G. Knitter

South Milwaukee Fire Department, South Milwaukee, Wisconsin

August 2009

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is

set forth, quotation marks so indicate, and that appropriate credit is given where I have used the

language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The problem was that the South Milwaukee Fire Department had no formal post-incident analysis process in place and therefore, had no means to measure their effectiveness during response to incidents. The purpose of this research was to develop a post-incident analysis process for the South Milwaukee Fire Department. An action research methodology was used to develop this process by reviewing available literature, distributing two feedback instruments; one externally to various fire departments throughout the country and another internally to the officers of the South Milwaukee Fire Department, and searching for relevant information on the Internet. During this research, the following questions were answered: (a) What are the essential components of the post-incident analysis process?, (b) What type of incidents should be subject to post-incident analysis?, (c) What level of post-incident analysis should the South Milwaukee Fire Department conduct?, and (d) What roles and responsibilities should be assumed by members of the South Milwaukee Fire Department Command Staff when conducting post-incident analysis?.

The result of this research was the development of a Suggested Operating Guideline that defines a formal post-incident analysis process for the South Milwaukee Fire Department. This Suggested Operating Guideline will be recommended for adoption by the South Milwaukee Fire Department to establish a process to analyze, record, and share the experiences evolving from incident response, training exercises, and other notable occurrences. In addition, these guidelines are being made available to other agencies for their consideration, as well.

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Introduction

According to the United States Fire Administration (USFA), the fire service is always seeking ways to improve its operations and suggests that an effective way of accomplishing this is through a post-incident critique (USFA, 2008b). The problem was that the South Milwaukee Fire Department (SMFD) had no formal post-incident analysis (PIA) process in place and therefore, had no means to measure their effectiveness during response to incidents. The purpose of this research was to develop a formal post-incident analysis process for the SMFD. The end result was the development of a Suggested Operating Guideline (SOG) that defines a formal post-incident analysis process for the SMFD (Appendix A).

An action research methodology was used to develop an SOG that defines a PIA process for the SMFD by reviewing available literature, distributing two feedback instruments; one externally to various fire departments throughout the country and another internally to the officers of the SMFD, and searching for relevant information on the Internet. During this research, the following questions were answered: (a) What are the essential components of the post-incident analysis process?, (b) What type of incidents should be subject to post-incident analysis?, (c) What level of post-incident analysis should the South Milwaukee Fire Department conduct?, and (d) What roles and responsibilities should be assumed by members of the South Milwaukee Fire Department Command Staff when conducting post-incident analysis?.

Background and Significance

The SMFD is considered a combination department in that it has 25 full-time staff members, including the fire chief, and relies upon 12 paid-on-call firefighters to compliment

daily on-duty staffing levels that range from a maximum of eight to a minimum of six (WI DOC, 2009, ¶4). Duty shifts are separated into three platoons comprised of a fire captain, a fire lieutenant and six firefighters that work a 24-hour day, averaging a 56-hour work week following a one-day on, one-day off, one-day on, one-day off, one-day on, four-day off rotation that is often referred to as the California Schedule. All personnel are cross-trained at either the emergency medical technician or paramedic level of emergency medical licensure.

Operating out of one fire station, the SMFD protects approximately 21,256 residents (U.S. Census Bureau, 2000) in a primary response area of nearly 4.8 square miles in south-eastern Milwaukee County, Wisconsin. The SMFD also responds as part of an automatic mutual aid agreement for major incidents such as structure fires to three surrounding communities (Cudahy, Oak Creek and St. Francis) that increases its response area to approximately 42 square miles and 72,000 residents. In addition, all Milwaukee County fire departments have joined the Mutual Aid Box Alarm System (MABAS) which expands the SMFD's mutual aid response area to literally anywhere in southeastern Wisconsin. During 2008, the SMFD responded to a total of 3,047 fire, service & emergency medical service responses which represents a 12% increase over the previous year (SMFD, 2008).

At least for the past two decades, the SMFD has sporadically conducted after-the-fire reviews in which fire suppression personnel were asked to complete a "First-In Report" after fire incidents that the fire chief or incident commander thought were worthy of more detailed reporting. No formal policy exists describing the parameters for requesting the more detailed reporting and, until the development of a standardized form (Appendix B), these reports consisted of a simple written narrative. The incidents these reports were utilized on were solely restricted to fire incidents and more often than not, only those fires that had significance either

due to their nature, a suspicious cause or excessive dollar loss. These after-the-fire reviews served as more of a documented report of the observations of the first responders rather than a critique of the actions of personnel operating at that particular incident. Nonetheless, these reviews were never shared with other personnel in any form of lessons learned format or learning experience.

Since PIAs serve as an important tool for improving firefighter safety and health and as a means for ensuring the quality of services being delivered to the public (USFA, 2008b), the need for such a policy is paramount to the continued success of the SMFD. The great Roman leader, Julius Caesar, is credited with the earliest known version of the proverb, 'Experience is the teacher of all things' (ESC, 2003, ¶3). Yet, without a process to analyze, record, and share these experiences, there will be no way for the SMFD to utilize them as a learning tool. In addition, although the total number of incidents that the SMFD responds to continues to rise, the number of actual fires that fire departments are responding to in the United States, including the SMFD, continues to decline (USFA, 2007). The result of this decline is a reduction in the amount of actual experience realized by firefighting personnel which emphasizes the importance of conducting PIAs as part of the educational process of lesser-experienced personnel.

Two previous incidents that had a significant impact on the City of South Milwaukee immediately come to mind for the author as having little or no attention paid to them post-incident. The first, a leaking 30,000 gallon propane cylinder at a local foundry in May of 1998, resulted in the largest evacuation in Milwaukee County history with over one-fourth of the citizens of the city of South Milwaukee requiring relocation. This incident, which lasted in excess of 36 hours, resulted in numerous citizen complaints because of the evacuation procedures that were employed. To appease the community, the mayor called a town-hall-style

meeting that called upon the author to explain the actions of the fire department as he served as both the initial incident commander and eventual operations section chief.

The lack of a formal PIA process was evident as no formal information gathering, outside of obtaining the simple incident report completed immediately following the incident, was undertaken to prepare for the meeting. During the meeting, it became quite clear that a formal process would have benefitted the author tremendously in representing the SMFD, addressing the concerns of the community and in allowing the SMFD to learn from this event.

The second and more recent incident that comes to mind occurred in June of 2008 when torrential rains fell in Milwaukee County inundating the rivers and streams and causing widespread flooding throughout the city of South Milwaukee. The flooding resulted in a Presidential Disaster Declaration for Milwaukee County and several visits by Federal Emergency Management Agency (FEMA) representatives to South Milwaukee itself. Even though South Milwaukee sustained wide-spread flood damage, no post-incident analysis was conducted and members of the SMFD, including the author who served as incident commander on this incident as well, were left wondering if the actions taken during the initial phases were appropriate and sufficient. A written PIA process would have certainly called for a PIA in response to an incident of this magnitude and hopefully would have answered any questions that emergency response personnel had. Furthermore, it would have addressed the need for complete and accurate documentation in order to fulfill the reporting requirements of the financial reimbursement system of FEMA.

During the *Executive Analysis of Fire Service Operations in Emergency Management* (EAFSOEM) class, each exercise was followed by a post-exercise analysis so that participants could learn both what went right and what went wrong. Although all EAFSOEM class members

participated in these post-exercise analyses, one goal of this research was to define what roles and responsibilities would be assumed by the members of the SMFD Command Staff. This goal was in line with the primary goal of the EAFSOEM course, which was to prepare senior fire officers in the administrative functions necessary to effectively manage the operational component of a fire department (USFA, 2009).

The results of this Applied Research Project (ARP) will lead to closer analysis of SMFD operations which, if the results of the PIA are used as lessons learned and applied, will support the USFA operational objectives of "reducing the loss of life from fire by 15 percent", "reducing by 25 percent the loss of life of the age group 14 years old and below", "reducing by 25 percent the loss of life of the age group 65 years old and above", and "reducing by 25 percent the loss of life of firefighters". In addition, it will allow the SMFD to "appropriately respond in a timely manner to emergent issues" (USFA, 2008a, p. II-2).

<div align="center">Literature Review</div>

Post-incident analyses, also known as post-incident evaluations, post-incident reviews, post-incident critiques, after-action critiques, after-action reviews or debriefings, as well as various other names, should be considered an important tool for improving firefighter safety and health and as a means for ensuring quality services for the public (USFA, 2008b).

The International Fire Service Training Association (IFSTA) differentiates between a PIA, which is defined as a written document that determines the strengths and weaknesses of an organization's response to an emergency and a post-incident critique (PIC), which they define as a meeting of participants that may be required based on the results of the analysis (2008). The USFA admits that the term critique could carry a negative connotation and therefore, a less threatening term such as one of those previously listed may be more appropriate (2008b). For the

purpose of this ARP, the term post incident analysis (PIA) will be used to identify both the written document and any discussion or meeting held to discuss the findings of the PIA.

Ward (2006) adds that the best way to evaluate the effectiveness of procedures is to determine whether following them actually produced the anticipated results. In order to perform this evaluation, he lists a series of sixteen incident review questions (Appendix C). Mission-Centered Solutions (1997) also provided a list of suggested subjects to be included in a PIA (Appendix D). According to Smith (2006), the critique is meant to reconstruct events and assess how the fire department performed. Hinton (2005) concurs when he states that post-incident reviews are performed by matching the actual fire attack with the tactical templates (deployment models that work on various tactical problems) to measure how the department did.

The National Wildfire Coordinating Group (2007) recognizes PIAs as a way to maximize learning from every operation, training event, or task as they represent a powerful tool for team and organizational learning. They further identify PIAs as a way for people to share honest opinions and learn from each other. The USFA concurs and states that fire department leadership must create an environment that promotes trust and encourages personnel to participate in an open and honest manner without fear of personal attacks or retribution (2008b). In contrast, Gayk (2007), asks why we waste our time with critiques when no one provides honest information about their performance on the fireground and goes on to provide reasons he believes people are not honest: fear of personal embarrassment or embarrassing someone else; the appearance of incompetence; fear of being the first to test a new standard operating procedure; and fear of what other people are going to think about you.

Mission-Centered Solutions (MCS) believes that the PIA is the primary tool for incorporating the action's or day's events into the learning cycle of the organization as they

provide a forum for determining the roots of crew performance successes and failures (1997). It is important to remember that the PIA process is intended to identify both strengths and weaknesses of the operations as a way to develop strategies for response to future incidents.

The National Fire Protection Association (NFPA) references the PIA process in many of their standards, specifically NFPA 1006, the Standard for Technical Rescuer Professional Qualifications; NFPA 1021, the Standard for Fire Officer Professional Qualifications; NFPA 1250, the Recommended Practice in Emergency Service Organization Risk Management; NFPA 1500, the Standard on Fire Department Occupational Safety and Health Program; and NFPA 1521, the Standard for Fire Department Safety Officer.

NFPA 1006 (2008a) calls for the requisite skills of a technical rescuer to include the ability to terminate a technical rescue operation while providing for a post event analysis, while NFPA 1021 (2009) places the responsibility of developing and conducting a PIA on a Fire Officer candidate and also requires the knowledge of the elements of a PIA, as well. The importance of the PIA process in risk assessment is detailed in NFPA 1250 (2004), which calls for an emergency service organization (ESO), or fire department, to conduct a risk assessment in order to identify and analyze any risks that the ESO may be subjected to. Once established, the risk assessment should be reviewed and revised as called for by any PIA processes that are conducted (NFPA, 2004).

NFPA 1500 (2007) requires the fire department to establish requirements and standard operating procedures for standardized PIA of significant incidents or those that involve serious injury or death to a firefighter. Although not required by Wisconsin law, NFPA 1500, as well as all other NFPA standards, serve as internationally accepted consensus standards and would very

likely be referenced in any litigation that would arise out of response to emergency incidents so, therefore, should be used as a guideline when developing a formal PIA process.

The involvement of the department safety officer in the PIA process is also required according to NFPA 1500 (2007). This requirement is repeated in NFPA 1521 (2008b) where the health and safety officer is required to develop procedures to ensure that health and safety issues are addressed during the PIA process. NFPA 1521 further details the written report that the health and safety officer is required to provide (2008b).

Besides the required involvement of the health and safety officer by the NFPA, IFSTA (2008) also states that the incident safety officer should be involved in the PIA process along with the incident commander or a designated member of the incident command staff. According to Hinton (2005), the PIA process is easier to conduct relative to how much street credit the officer has and that the officer's credibility is critical in terms of how long the improvement process will take to accomplish.

The component's that make up an effective PIA process are often used to produce a final written report of the specific findings for the respective incident. According to Smith (2006), this report should be comprised of three separate parts, the first being a narrative account describing conditions, problems encountered, life safety considerations and fire department actions. The second part provides information about the vital statistics of the incident such as the date, weather, times, and other pertinent information. The final component of the report should be a lessons-learned section that should be written in a positive way so that the process can be beneficial to everyone as a learning experience.

Hinton (2005) and Ward (2006) both agree that the reviews must be carried out for the sole purpose of reinforcing what works and learning what can be done better so as to serve as an

educational and training tool. Ward goes further by stating that every situation should be viewed as a potential learning experience (2006). Gayk believes that a department has to find a way to let their guard down enough to truly discuss incidents without taking things personally in order to begin getting something out of the process (2007).

The USFA (2008b) and Ward (2006) both suggest that the best time for conducting a critique is immediately following an incident or as soon as convenient. Garvin (2000) and MCS (1997) agree by stating that the PIAs must be conducted as soon after the event as practical, preferably the very same day, in an effort to minimize memory loss and so that the process can be as effective as possible and provide for the best learning experience. The Department of the Army (1993) uses After Action Reviews (AAR) to evaluate their training missions and believes that the leaders of the training missions should plan for an AAR at the end of each critical phase or major training event. While it may not be possible to conduct a review at each critical phase of a minor incident in the emergency services arena, it may be possible to do so in large-scale or longer duration incidents.

In summary, this literature review has shown that post-incident analyses, which are known by varying names, serve as a valuable educational and learning tool as a means to evaluate the effectiveness of the level of service delivery of a department. Both the United States Army and the National Wildfire Coordinating Group suggest the use of an AAR process to evaluate the effectiveness of training exercises, as well. With the exception of Gayk, all of the sources revealed a very positive look at the PIA process and confirmed the need for such a process to assist organizations in measuring the level of service being delivered.

The review also showed the importance of a timely process and suggest that the PIAs be conducted as soon as practical after an incident so as to avoid any loss of details and for a more

accurate and effective review. In addition, many of the NFPA Standards reference PIAs and

detail how a PIA should be conducted and what specific responsibilities members of the

emergency service organizations play in their respective processes. Finally, the list of incident

review questions provided by Ward (2006) and the suggested subjects of MCS (1997) found in

Appendices C and D, respectively, provided guidance in developing the PIA process.

<div align="center">Procedures</div>

Definition of Terms

CBRF	Acronym for Community-Based Residential Facility
Flight for Life	A medical helicopter service operating in Northern Illinois & Wisconsin
Full Assignment	A level of emergency response involving reciprocal mutual aid from neighboring communities.
MABAS	Acronym for Mutual Aid Box Alarm System, a mutual aid organization that has been in existence since the late 1960s.
MVC	Acronym for motor vehicle crash.
PIA	Acronym for post-incident analysis, a process in which an emergency services organization reviews the events surrounding an emergency incident, training session or other significant event to identify areas of strengths, deficiencies and needed areas of improvement.

The procedures enlisted for this ARP consisted of a literature review, the distribution of

two feedback instruments; one externally to various fire departments throughout the country and

another internally to the officers of the SMFD, and a search for relevant information on the

Internet. The external feedback instrument was hosted on the SurveyMonkey.com Website and

distributed via e-mail with an informational letter (Appendix E) to 61 fire departments across the

United States. The departments were randomly selected from a collection of the author's

colleagues with no demographic similarities purposefully chosen for inclusion and are listed in

Appendix F.

A limitation identified when utilizing the SurveyMonkey.com Website in this fashion is that the responses are anonymous which means that there is no modality to confirm which departments responded to the request. This method also resulted in a less-than-desirable return of responses with only 51 of the 61 (84%) departments answering the request. However, the author has considerable confidence that those invited participants who did respond did so in a responsible manner which resulted in the reported findings. A response deadline of 30-days was requested in the e-mail and a reminder e-mail was sent out seven days prior to the deadline to encourage those that had yet to reply to do so. The complete results of the external feedback instrument can be found in Appendix G.

Two limitations were noted in the distribution of the internal feedback instrument, as well. The first was the small number of officers (five) available for response simply based on the overall size of the department. If the author's department was larger, a wider range of responses could be expected. The author, as the sixth officer of the SMFD, did not participate in the feedback instrument so as to not skew the results. Nonetheless, all five of the available officer's of the SMFD were asked to participate and did so. The fire chief was not available during the research period and, therefore, did not participate in the research. The invitation to participate in the feedback instrument was e-mailed to the respective SMFD officers and included the letter included as Appendix H.

The second limitation was a result of the method of distribution of the instrument. In contrast to the on-line feedback instrument provided to the external respondents which limited many of the responses to the selection of provided answers, the internal instrument was provided in paper form. Due to the apparent desire of the respondents to express their thoughts in addition to the provided responses, all of the respondents provided additional commentary that increased

the difficulty of gathering standardized responses and documenting those results. Nonetheless,

valuable information was obtained through the use of both feedback instrument methods.

To answer the first question, What are the essential components of the post-incident

analysis process?, a search of the Internet revealed several fire department PIA policies available

for download. A number of respondents to the external feedback instrument provided copies for

review, as well. In addition, several of the resources encountered in the literature review

provided examples of the essential components within their text. Many of these results were used

to develop the SOG found in Appendix A.

To answer the next question, What type of incidents should be subject to post-incident

analysis?, several examples were discovered during the literature review, as well as within the

PIA policies found on the Internet and those received from the external feedback instrument

respondents. In addition, the officers of the SMFD were asked to respond to this question within

the internal feedback instrument. For the final questions, What level of post-incident analysis

should the South Milwaukee Fire Department conduct?; and What roles and responsibilities

should be assumed by members of the South Milwaukee Fire Department Command Staff when

conducting post-incident analysis?, the officers of SMFD were, once again, asked to respond

during their participation in the internal feedback instrument. The results of this instrument are

summarized in the Results Section of this ARP with the entire results available in Appendix I.

Results

In this research, four questions were asked. In response to the first question, What are the

essential components of the post-incident analysis process?, the list of incident review questions

provided by Ward (2006) and the suggested subjects of MCS (1997) found in Appendices C and

D, respectively, provided guidance in developing the PIA process that can be found in Appendix

A. In addition, a review of the PIA guidelines found through a search of the Internet and

provided by the respondents to the external feedback instrument revealed that most of these

established policies contained the very same components found in most policies: purpose,

objective, scope, definitions, and procedures. These same components are mainstay features of

the current Suggested Operating Guidelines of the SMFD and were incorporated into the SMFD

PIA process, as well.

The considerations for time limits were listed in many of the policies for both the

initiation of the PIA process and the time limit for completion. These times varied from initiation

of the review immediately following the incident to conducting the review on the shift following

the response to as much as a required completion deadline of 30 days post-incident. The results

of the external feedback instrument revealed that the greatest percentage of respondents (38.5 %)

require the PIA process to begin within one week of the incident. The following table depicts the

results of this question from the external feedback instrument. The entire external feedback

instrument results can be found in Appendix G.

Table 1 –External Feedback Instrument Results (Partial)		
How soon after the incident is your Post Incident Analysis / After Action Critique process required to begin?	Response Percent	Response Count
☐ Immediately	5.1%	2
☐ 24-hours	7.7%	3
☐ 48-hours	7.7%	3
☐ 72-hours	15.4%	6
☐ One-week	38.5%	15
☐ Two-weeks	2.6%	1
☐ N/A	23.1%	9

The internal feedback instrument revealed that four of the five (80%) officers of the

SMFD thought the PIA should be required to begin immediately following the incident while the

fifth thought it should begin within 24-hours.

The external and internal feedback instruments and a review of the previously established

policies were used to answer the second question, What type of incidents should be subject to

post-incident analysis?. All of the policies listed criteria for determining which responses PIAs

were recommended for and when they would be required. This question was posed in both of the

feedback instruments, as well, and those results are available in Appendices G and I.

Another result obtained from the external feedback instrument was that 50 of the 51

respondents (98%) reported conducting formal reviews of significant events or incidents.

However, only 24 respondents (47.1%) reported having a written policy defining the steps of the

process and that their formal policy was routinely followed. The responses for the second

question from the external feedback instrument are presented in the following table. The entire

external feedback instrument can be found in Appendix G.

Table 2 – External Feedback Instrument Results (Partial)	Recommended	Required
Single-engine responses (car fire, dumpster fire, etc.)	100.0%	0.0%
First-alarm Assignment Fires	64.7%	35.3%
Multiple (MABAS Box) Alarm fires	32.0%	68.0%
Fire resulting in injuries or fatalities	16.0%	84.0%
Fires in high-risk buildings (abandoned, etc.)	22.7%	77.3%
Fires in target hazard buildings (nursing homes, CBRF's, etc.)	13.0%	87.0%
Fires that exceed a pre-determined dollar loss	35.7%	64.3%
Fires in buildings where fire protection features (sprinklers, alarms, etc.) influenced the outcome (negatively or positively)	28.6%	71.4%
Hazardous materials incidents	33.3%	66.7%
Technical rescues (confined space, lake bank)	23.8%	76.2%
Open water / boat operations	52.9%	47.1%
Incidents with unusual circumstances or unexpected development	40.0%	60.0%
MVC's requiring extrication	62.5%	37.5%
EMS calls of unusual circumstances (breech delivery, etc.)	83.3%	16.7%
Medical helicopter calls	90.0%	10.0%

Table 2 clearly indicates that the respondents feel that the more complex an incident is,

the more they felt the PIA process should be required. For example, responses involving a

single-engine response to a car fire or similar incident or a medical helicopter call, which are

both relatively common responses in today's fire service, were approached with a 100% and 90% recommendation for conducting a PIA, respectively, while not a single respondent thought a PIA should be required for a single-engine response and only 10% thought it should be required for a medical helicopter call.

A review of the policies obtained from the Internet and shared by the respondents to the external feedback instrument revealed very similar findings to the external feedback instrument as most of the policies require a PIA be conducted for incidents such as (a) structure fires, collapse or explosions; (b) complex or unusual accident or extrications; (c) water rescues; (d) hazardous materials responses at any level; (e) disasters, man-made or natural; (f) mass casualty incidents; and (g) at the direction of the fire chief. In addition, the Columbia Fire Department more specifically defines which incidents a PIA must be completed for (2006). Appendix J presents the list as it appears in the Columbia Fire Department PIA policy.

The internal feedback instrument provided insight into which incidents the officers of the SMFD believed should automatically trigger a PIA. Table 3 presents the results from the internal feedback instrument for this question and shows that the officers of the SMFD unanimously believe that fire incidents involving mutual aid (Full Assignment & MABAS Box Alarm fires) should trigger a PIA process as well as those involving injuries or fatalities. In addition, technical rescues were unanimously chosen and hazardous materials incidents and open water / boat operations were selected by four of the five officers. In contrast, not a single SMFD officer thought that a single engine response should trigger a PIA process. The entire results of the internal feedback instrument can be found in Appendix I.

Table 3 - Internal Feedback Instrument Results (Partial)	Response (Out of 5)
Single-engine responses (car fire, dumpster fire, etc.)	0
Full Assignment fires	5
MABAS Box Alarm fires	5
Fire resulting in injuries or fatalities	5
Fires in high-risk buildings (abandoned, etc.)	2
Fires in target hazard buildings (nursing homes, CBRF's, etc.)	3
Fires that exceed a pre-determined dollar loss If so, what amount $_100,000_____	2
Fires in buildings where fire protection features (sprinklers, alarms, etc.) influenced the outcome (positively or negatively)	1
Hazardous material incidents	4
Technical rescues (confined space, lake bank)	5
Open water / boat operations	4
Incidents with unusual circumstances or unexpected development	3
MVC's requiring extrication	2
MVC's w/ serious injuries	1
EMS calls of unusual circumstances (breech delivery, etc.)	3
Flight for Life calls	2

Answers for the third question, What level of post-incident analysis should the South

Milwaukee Fire Department conduct?, were taken from the responses of the SMFD officers to

the internal feedback instrument (Appendix H). Four of the five SMFD officers (80%) agreed

that both informal and formal PIAs are necessary. The fifth respondent (20%) opted to be more

specific and stated the following preference: formal for the following incidents: (a) MABAS

Alarms; (b) Fires resulting in injuries/fatalities; (c) Hazardous materials calls; (d) Technical

rescue / confined space rescues; (e) Incidents with unusual outcomes / circumstances, and

informal for all others.

As a reference, several of the policies identified the two most common forms of PIA as

being the informal and formal analysis processes. One policy, from the Phoenix Fire Department,

listed a four-tier process beginning with individual reviews and progressing through company-

level and operations-level reviews and culminating in department-level reviews (2002).

Finally, the fourth question, What roles and responsibilities should be assumed by members of the South Milwaukee Fire Department Command Staff when conducting post-incident analysis?, was answered by several questions in the internal feedback instrument, as well. Four of the five SMFD officers (80%) felt that both the fire chief and the incident commander should be responsible for initiating the PIA process while the fifth respondent (20%) felt that the fire chief should be responsible if it was a formal PIA and the incident commander if it was an informal PIA.

When asked who should oversee the PIA process for the SMFD, three out of five of the respondents (60%) thought that the incident commander should assume that role, while the other two (40%) thought that the fire chief and training officer should be responsible. Other roles that the respondents thought the SMFD officers should be responsible for included receiving calls for areas for improvement, addressing safety issues and providing any re-training that is identified through the PIA process, communicating the positives and negatives of the incident to SMFD personnel and providing for the improvement of operations.

Discussion

The relationship between the results of this study and the findings of the others shows that most departments are conducting some form of PIA process. In fact, 50 of the 51 respondents (98%) to the external feedback instrument reported conducting formal reviews of significant events or incidents which re-affirms the author's position that PIAs play an important role in the operation of a department. However, learning that only 24 respondents (47.1%) reported having a written policy defining the steps of the process and that the same number reported that their formal policy was routinely followed was both surprising and slightly disappointing but gives the author assurance that a formal process is necessary as long as it is

developed to be an important tool for improving firefighter safety and health and as a means for

ensuring the quality of services being delivered to the public (USFA, 2008).

Making sure that the process is followed as written is vital to the continued success of the

process and, as stated by Hinton (2005) and Ward (2006), the reviews must be carried out for the

sole purpose of reinforcing what works and learning what can be done better so as to serve as an

educational and training tool. Ward provides additional guidance by stating that every situation

should be viewed as a potential learning experience (2006).

The authors' interpretation of the study results coming from the feedback instruments for

this ARP were, for the most part, found to be consistent with the findings discovered in the

established policies, especially those that provided detailed descriptions as to which incidents

PIAs were conducted for. The results of the internal feedback instrument were also consistent

with those derived from the external instrument. For example, four of the five SMFD officers

(80%) felt that both the fire chief and the incident commander should be responsible for

initiating the PIA process while the fifth respondent (20%) felt that the fire chief should be

responsible if it was a formal PIA and the incident commander if it was an informal PIA. These

results are consistent with those of the external feedback instrument from which 64.1% of the

respondents answered that the incident commander was responsible for initiating the PIA

process. According to Hinton (2005), the PIA process is easier to conduct relative to how much

street credit the officer has so it would make good sense to the have the incident commander

conduct the PIA as they hopefully have the respect of the people they lead.

Another example of this consistency would be the fact that not a single SMFD officer,

nor any respondent to the external feedback instrument, thought that a single engine response

should require or trigger a PIA. It appears from the results of both the external and internal

feedback instruments that the respondents and SMFD officers agree that the more significant or complex an incident is, the more they felt that a PIA process should be required.

The implications of the results of this study for the SMFD are great. The mere fact that a PIA process has been developed and will be introduced for adoption means that the SMFD is on the right track to be able to analyze, record, and share the experiences taken from major incidents and other events, allowing the SMFD to utilize them as a learning tool. It is also important to remember that, as stated by Mission-Centered Solutions (MCS), the PIA is the primary tool for incorporating the action's or day's events into the learning cycle of the organization as they provide a forum for determining the roots of crew performance successes and failures (1997).

Recommendations

Since the problem was that the SMFD had no formal post-incident analysis process in place and therefore, had no means to measure their effectiveness during response to incidents, the goal of this project was to research and develop a post-incident analysis process for the SMFD. As a result of this research, a process was developed (Appendix A). The end product, in the form of the Suggested Operating Guideline found in Appendix A, will be introduced to the fire chief and officers of the SMFD with the recommendation that it be adopted for use as a means to measure the effectiveness of the departments' response to incidents, training sessions and other significant events. Since the response to the external feedback instrument revealed that less than half of the respondents who actually conducted PIAs had a formal, written policy, the process will also be made available to other interested departments as its development is the result of other proven processes across the country.

To evaluate the effectiveness of the PIA process, the author, who also serves as the department safety officer, will coordinate a review process with the department training officer.

Because the PIA process cannot be initiated until after an incident or event occurs that requires

such a review to be conducted, determining a timeline for evaluation is nearly impossible.

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Appendix A

SOUTH MILWAUKEE FIRE DEPARTMENT
Suggested Operating Guideline

Topic:	Post-Incident Analysis (PIA)
Guideline Number / Filename:	SMFD SOG # XXX
Issue Date:	November, 2009
Last Revision:	N/A
Supercedes:	N/A

Purpose

The purpose of this document is to establish a guideline for conducting Post Incident Analysis. The intent of this guideline is to improve emergency operations by identifying strengths & weaknesses, which will result in safer, more efficient operations.

Scope

This policy shall apply to all members of the South Milwaukee Fire Department.

Definitions

Informal Post Incident Analysis – An informal review of operations, usually at the shift or department level, conducted to identify and communicate operational deficiencies and areas in need of improvement. Usually initiated by the company officer, Incident Commander or Fire Chief on scene, prior to departing. Informal and brief. No documentation of the PIA required. Also known as a "Tailboard Talk".

Formal Post Incident Analysis – A formal, structured review of operations, usually at the shift, department, or multi-jurisdictional level, conducted to identify and communicate operational strengths and/or deficiencies. Utilized for critiquing large-scale or complex incidents that involved a large response of fire department resources and/or several outside agencies or incidents that were unusual or tactically significant. Normally, the first-arriving officer will be selected to prepare and conduct the critique in cooperation with the Training Officer. All PIA materials and documents will be forwarded to the Training Officer and Fire Chief for review prior to publishing. The Training Officer will be responsible for coordinating the date and location of department-wide review and notifying outside agencies of any such meetings.

Policy

A Post Incident Analysis (PIA) may range from an informal discussion and exchange of information between shift personnel to a well coordinated, structured analysis involving many personnel, jurisdictions or response agencies.

Appendix A (con't)

In general, a PIA should be considered a training function designed to improve the effectiveness of emergency operations, not an attempt to find fault. A systematic review of scene activities can (1) contribute to the morale of the department by reinforcing positive aspects of the operation; (2) serve as a learning experience for the entire department; and (3) identify areas were change is needed.

In order to add credibility to the basic intention of this program, it is important that the analysis of those incidents where all or most operations went smoothly be conducted as consistently as those where mistakes may have been identified.

When to conduct a Post Incident Analysis (PIA)
An informal Post Incident Analysis will be conducted:
1. For all fires beyond the incipient stage, including vehicle fires.
2. For any unusual occurrences such as a delayed response, inappropriate responder actions, uncooperative bystanders / victims, etc.
3. For any unusual incidents, such as difficult EMS incidents, operation at crime scenes, operations involving outside agencies, etc.
4. Any time deemed necessary by the Incident Commander.

A Formal Post Incident Analysis will be conducted:
1. For all incidents involving serious injury or death of response personnel.
2. For all incidents involving serious injury or death of a civilian as determined by the Incident Commander, Shift Commander or Fire Chief.
3. For all working fires (Full Assignment or MABAS Box Alarms).
4. For all multi-jurisdictional responses to serious incidents.
5. For all special operation incidents (Haz-Mat, technical rescue, major MVC's, entrapments).
6. For incidents involving hazardous events, such as building collapse or violence.
7. Motor vehicle crashes involving response apparatus.
8. Any incident deemed appropriate by the Incident Commander, Shift Officer and/or Fire Chief.

Whenever possible, a PIA shall be conducted as soon after the incident as practical. For multi-jurisdictional responses, logistical considerations may require delays in conducting the Post Incident Analysis.

Who should conduct and participate in the Post Incident Analysis (PIA)
The Incident Commander or other individual designated by the Incident Commander, Shift Officer or Fire Chief will initiate the PIA and act as the PIA Leader. The PIA Leader is responsible for securing copies of supplemental reports and dispatch information necessary to conduct the PIA.

Appendix A (con't)

If possible, all response personnel involved in the incident should participate in the PIA process. It is recognized that some personnel involved in the incident may be unavailable to participate in the process, however every attempt should be made to include as many personnel as possible.

The Department Safety Officer will be charged with the responsibility of reviewing the PIA for all matters relating to safety, including operational safety and rehabilitation of personnel, and make recommendations, if any, for improving in these areas.

Format and Conduct of the Post Incident Analysis (PIA).
Ground rules for Post Incident Analysis:
1. Accusatory remarks or suppositions cannot be tolerated in a PIA. The PIA leader will terminate such discussions.
2. All discussions will be based on fact, not supposition.
3. It is not the intent of the PIA to "second guess" the incident evolution. The PIA Leader shall terminate such discussions.
4. All participating individuals will be given ample time to provide input into the discussion. However, only one person shall speak at a time.
5. No participant will speak until recognized by the PIA Leader.

Post Incident Analysis, whether formal or informal, will be conducted as follows:
1. Opening statement by the PIA Leader as to the purpose of the PIA and the ground rules for the conduct of the PIA. The person conducting the PIA should begin the session by emphasizing that the purpose of the PIA is not to find fault, but to obtain facts.
2. An overview of the incident presented by the PIA Leader, beginning with the receipt of the alarm and ending with "returning to quarters".
3. Participative discussion (beginning with the first arriving officer or person in charge) detailing individual observations, how the observations were interpreted, and what actions were taken in response to those interpretations, and the result of those actions.
4. The PIA Leader should summarize what went right, what went wrong, and what recommendations or activities should be initiated to improve future operations.

The PIA Leader shall take notes or designate a "scribe" for later documentation of information gathered during the PIA. The *Post Incident Analysis Outline* (Appendix A) should be used as a reference when conducting a PIA.

Documentation of the Post Incident Analysis (PIA)
The *Post Incident Analysis Report* (Appendix B) shall be completed by the PIA Leader following the conclusion of the Post Incident Analysis.

The Post Incident Analysis Report form shall be forwarded to the Fire Chief for review and determination / implementation of corrective actions.

Appendix A (con't)

Suggested Operating Guideline

Post-Incident Analysis Outline

Receiving the Alarm
1. Was the initial information received accurate?
2. Were response actions consistent with the information initially received?
3. Was the alarm information communicated to all response personnel?

Alarm Response
1. Were any unusual traffic or response problems identified?
2. Was apparatus operated in a responsible and safe manner?
3. Were any apparatus maintenance problems identified during the response?
4. Did warning devices function properly?
5. Was apparatus placement appropriate for the incident?
6. Did personal vehicles obstruct ingress / egress?

Command Procedures
1. Did the first arriving unit(s) transmit an adequate size-up and initial report?
2. Was initial Command established and the Incident Command System implemented (proper location, properly identified, stationary)?
3. Were the appropriate resources established as needed?
4. Were Operational Divisions / Groups established as needed?
5. Were orders clearly communicated to those expected to carry them out?
6. Were incident benchmarks identified and clearly communicated to Command?
7. Were Command vests utilized?

Safety
1. Was an Incident Safety Officer (ISO) designated?
2. Did *all* personnel exposed to hazards use appropriate PPE?
3. Did *all* personnel exposed to respiratory hazards use SCBA?
4. Was the Personnel Accountability System implemented and followed by on-scene personnel?
5. Were any unsafe actions noted?
6. Were Companies assigned to standby and did they function as intended?
7. Was a Rapid Intervention Team established and did it function as intended?
8. Were unusual hazards communicated to Command and operation personnel?
9. Was there any "free-lancing"?
10. Were all utilities controlled in a timely manner?

Procedures & Pre-Plans
1. Was a pre-plan in place for the incident? If so, was it referenced?
2. Did responding personnel follow applicable "site specific" procedures?

Appendix A (con't)

Communications
1. Did communications equipment function properly?
2. Were on-scene communications clear & concise?
3. Were face-to-face communications used whenever possible in lieu of radio communications?
4. Were any communication problems noted between on-scene personnel and Division 107 Dispatch if it was a MABAS level alarm?
5. Were tactical (fireground) channels utilized as necessary?

Incident Operations – Fire
1. Was an adequate water supply established in a timely manner?
2. Were hose lines deployed effectively? Appropriate size, location, number?
3. Was ventilation initiated in a timely manner?
4. Was forcible entry performed in a timely / efficient manner?
5. Were ladders deployed effectively?
6. Were appropriate search procedures employed?
7. Were thermal imagers deployed efficiently?
8. Was an aggressive fire attack initiated in a timely manner?
9. Were any equipment problems noted?
10. Was the proper equipment available to responders?
11. Were the needs of the victim addressed (Red Cross, etc.)?
12. Were the needs of the responders addressed (Rehab)?
13. Were the extinguishing agents applied effectively?
14. Were salvage & overhaul operations initiated in a timely manner?

Incident Operations – Other than fire
1. Were adequate equipment & personnel resources available?
2. Were critical safety issues specific to the incident addressed?
3. Were control zones established as needed?
4. Were inter-agency efforts well coordinated?
5. Were command & control efforts effective for the incident?
6. Were the needs of the victim(s) addressed?
7. Were the needs of the responders addressed (Rehab)?

Multi-jurisdictional / agency incidents
1. Were communications between jurisdictions / agencies adequate?
2. Were MABAS procedures followed?
3. Were efforts adequately coordinated between jurisdictions / agencies?
4. Was a Staging area established?
5. Were all appropriate individuals / agencies notified (Fire Chief, EPA, State Fire Marshal, etc.)?

Appendix A (con't)

Suggested Operating Guideline

Post-Incident Analysis Report

Incident Location:	Shift:	Incident Date:
Incident Type:	Incident CMDR.	
PIA Leader:	Date of PIA:	

Describe any identified operational issues:

Describe any identified recommendations:

Describe any identified personnel who exceed expectations:

Appendix B

SMFD "First-In Report"

ALARM NUMBER:_____   DATE OF ALARM: _____

ADDRESS OF INCIDENT: _____

NAME: _____

RANK: _____

IF YOU ANSWER "YES" TO ANY OF THE FOLLOWING QUESTIONS, PLEASE PROVIDE DETAILS EITHER IN THE SPACE NEXT TO THE QUESTION OR ON THE BACK OF THIS FORM, REFERENCING THE RESPECTIVE QUESTION NUMBER. WHEN DESCRIBING LOCATIONS, A SKETCH IS MOST HELPFUL. ATTACH ADDITIONAL SHEETS, IF NECESSARY.

	Yes	No	Exterior Observations
A1			Was smoke showing when you arrived?
A2			Was fire showing when you arrived?
A3*			Did you see any suspicious persons / activity?
A4*			Did you see any suspicious I familiar person(s) or vehicle(s) leaving the area as you arrived?
A5			Did obstacles seem to be placed so as to slow building access, entry or system hook-Up?
A6			Did you notice any footprints, containers, or other evidence outside of the building?
	Yes	No	Building Entry
B1			Were any exterior doors ajar or unlocked when you arrived?
B2			Were any windows open or broken when you arrived?
B3			Could you see in the bldg. through doors I windows?
B4			Did you enter with a key? If Yes, who provided the key for your Use?
B5			Did you use any forcible entry?
B6			Did you see anyone else enter with a key or use forcible entry?
	Yes	No	Interior Information
C1			Did you smell any unusual odors?
C2			Did obstacles seem to be placed in your way?
C3			Did you observe unusual flame colors?
C4			Did you notice any unusual smoke colors?
C5			Did you see separate and unrelated fires?
C6			Did you notice the absence of typical bldg. contents (furniture, clothing, etc.)?
C7			Did you notice any containers indicative of flammable I combustibles liquids?
C8			Did you shut off any circuit breakers or remove fuses?
C9			Did you shutoff the natural gas supply to the bldg. or any appliance?
C10			Did you unplug, shutoff or move any appliances in the room of fire origin?
C11			Did you move any items such as furniture in the room of fire origin?
C12			Did you see anyone perform any of the operations described in C6 — CII?
	Yes	No	Fire Alarm / System Information
D1			Was the fire alarm sounding when you arrived?
D2			Could you hear a smoke detector sounding (in the area where the fire occurred)?
D3			Did you silence the fire alarm systems / smoke detectors?
D4			Did you see anyone silence the fire alarm system / smoke detectors?
D5			Did you disable any portion of the fire protection system?
D6			Did you see anyone disable any portion of the fire protection system?

Appendix B (con't)

	Gender:	Age:	Race:		Height:		Weight:		Facial Hair:		Glasses:
A3*											
	Build:		Hair Style:				Clothing (Color / Type)				
A4*	Year:		Make:		Model:				Color:		
	Lic #:				Body:				Direction of travel:		

	Narrative

If you have any questions concerning this report, contact the Incident Commander in charge of the incident. Complete reports should be forwarded to the Incident Commander of Fire Chief.

Signature of Person Completing this report. _____   Date: _____

Appendix C

Incident Review Questions
Fire officer: Principles and practice
Michael Ward, Author

1. Did the pre-incident plan provide accurate and useful information?

2. Are there factors that could have or should have been addressed by fire prevention before the incident?

3. Were the appropriate units dispatched based on procedures and the information that was received?

4. Were the units dispatched in a timely manner?

5. Was the appropriate information obtained and transmitted to the responding units?

6. What was the situation on arrival?

7. What was the initial strategy as determined by the initial incident commander?

8. How did the strategy change during the incident?

9. How was the incident command structure developed?

10. Were there adequate resources for the situation?

11. How were the resources allocated and assigned?

12. Were standard operating procedures followed?

13. Do any standard operating procedures need to be changed?

14. What unusual circumstances were encountered, and how were they addressed?

15. Is additional training needed?

16. Did all support systems function effectively?

Appendix D

Mission-Centered Solutions
Suggested Subjects for Discussion in an PIA

- Technical performance
- Techniques used
- Planning
- Communication of directions, events, changes
- Perception of events
- Communication
- Environmental problems
- Stress impacts
- Fatigue impacts
- Questions and answers
- Adapting
- Equipment performance
- Lessons learned
- Procedures adherence
- Environmental attributes or changes
- Coordination
- Attitude impacts
- Safety concerns
- Roles and Responsibilities
- Environmental indicators
- Organizational issues or cultural problems as they impact the team

Appendix E

External Feedback Instrument Letter

Dear Fire Service Colleague:

As you may know, I am currently enrolled in the National Fire Academy's Executive Fire Officer Program. Following each course of this four-year commitment, I am required to complete an applied research project that addresses a current topic affecting the South Milwaukee Fire Department. The topic I have chosen for the *Executive Analysis of Fire Service Operations in Emergency Management* (EAFSOEM) course is "Developing a Post Incident Analysis Process for the South Milwaukee Fire Department".

To gather information regarding incident reviews or analyses, I have created a short feedback instrument. I realize that your time is very valuable, so I have attempted to make the instrument as short and easy as possible. If you are not familiar with your department's incident review efforts, I ask that you please forward this e-mail to the appropriate person in your department. Also, if you have a written SOP, SOG, Directive, or some other form of policy covering after incident reviews, I would greatly appreciate it if you could share a copy. If possible, it can be e-mailed to me at: knitter@ci.south-milwaukee.wi.us. Thank you.

The feedback instrument can be accessed at http://www.surveymonkey.com/s.aspx?sm=x7LCWWa19BtDZI196uZWeQ_3d_3d

If you were unable to "click" on the link above for access, please cut and paste the link into your Web browser.

You will notice that the feedback instrument contains "check-boxes" that will allow you to complete it in a relatively short amount of time. Although the results of this instrument will be used in the completion of my research project, your identity will be kept completely confidential.

I would like to thank you in advance for completing this feedback instrument and helping me complete my research project. If you have any questions, please do not hesitate to e-mail me. My goal is to have all of the instruments completed no later than **June 8, 2009.** Your cooperation in helping me achieve this is greatly appreciated.

Thank you, once again, for assisting me in my research efforts.

Sincerely,

JOSEPH KNITTER
Fire Captain
South Milwaukee Fire Department

Appendix F

External Feedback Instrument Recipients

The following departments of varying demographics were asked to complete the feedback instrument. In most cases, the feedback instrument link was sent to the Fire Chief, another Chief Fire Officer or the Training Officer who was requested to either complete the instrument themselves or pass it on to the most appropriate person for completion. It is my belief that the response to the feedback instrument was provided by the appropriate person in an honest and objective manner.

1.	Anchorage Fire Department	Anchorage, AK
2.	Appleton Fire Department	Appleton, WI
3.	Ashtabula Fire Department	Ashtabula, OH
4.	Aurora Fire Department	Aurora, CO
5.	Castle Rock Fire & Rescue	Castle Rock, CO
6.	Central Kitsap Fire & Rescue	Silverdale, WA
7.	Clay Fire Territory	St. Joseph Co., IN
8.	Columbus Fire Department	Columbus, OH
9.	Cudahy Fire Department	Cudahy, WI
10.	Cunningham Fire District	Denver, CO
11.	Duxbury Fire Department	Duxbury, MA
12.	Elgin Fire Department	Elgin, IL
13.	Fairbanks Fire Department	Fairbanks, AK
14.	Fostoria City Fire & EMS	Fostoria, OH
15.	Franklin Fire Department	Franklin, WI
16.	Grayslake Fire Protection District	Grayslake, IL
17.	Green Bay Fire Department	Green Bay, WI
18.	Greendale Fire Department	Greendale, WI
19.	Greenfield Fire Department	Greenfield, WI
20.	Hales Corners Fire Department	Hales Corners, WI
21.	Hanover Park Fire Department	Hanover Park, IL
22.	Howell Area Fire Department	Howell, MI
23.	Joplin Fire Department	Joplin, MO
24.	Kansas City Fire Department	Kansas City, MO
25.	Kenosha Fire Department	Kenosha, WI
26.	Laguna Beach Fire Department	Laguna Beach, CA
27.	Lincolnshire-Riverwoods FPD	Lincolnshire, IL
28.	Littleton Fire Rescue	Littleton, CO
29.	Mequon Fire Department	Mequon, WI
30.	Meridian Fire Department	Meridian, ID
31.	Milford Fire Department	Milford, NH
32.	Millbrae Fire Department	Millbrae, CA
33.	Mitchell International Fire Department	Milwaukee, WI
34.	Newberry Fire Department	Newberry, SC
35.	New Berlin Fire Department	New Berlin, WI
36.	Niagara Falls Fire Department	Niagara Falls, NY

Appendix F (con't)

External Feedback Instrument Recipients

37.	North Charleston Fire Department	North Charleston, SC
38.	North Shore Fire Department	Brown Deer, WI
39.	Oak Creek Fire Department	Oak Creek, WI
40.	Orange County Fire Authority	Irvine, CA
41.	Peoria Fire Department	Peoria, AZ
42.	Pleasantview Fire Protection District	La Grange Highlands, IL
43.	Renton Fire Department	Renton, WA
44.	Richmond Fire and EMS	Richmond, VA
45.	Rocky Mount Fire Department	Rocky Mount, NC
46.	Saint Francis Fire Department	Saint Francis, WI
47.	Sandusky Fire Department	Sandusky, OH
48.	South Shore Fire & Rescue	Sturtevant, WI
49.	Spokane Valley Fire Department	Spokane, WA
50.	Stafford County Fire & Rescue	Stafford, VA
51.	Town of Brookfield Fire Department	Town of Brookfield, WI
52.	Tualatin Valley Fire & Rescue	Aloha, OR
53.	Tulsa Fire Department	Tulsa, OK
54.	Virginia Beach Fire Department	Virginia Beach, VA
55.	Wauwatosa Fire Department	Wauwatosa, WI
56.	Westfield Fire Department	Westfield, IN
57.	West Allis Fire Department	West Allis, WI
58.	West Bend Fire Department	West Bend, WI
59.	West Hartford Fire Department	West Hartford, CT
60.	Whitman Fire & Rescue	Whitman, MA
61.	Wichita Fire Department	Wichita, KS

Appendix G

External Feedback Instrument / Results

1.	Does your department conduct formal reviews of significant events or incidents such as Post Incident Analyses (PIA) or After Action Critiques (AAC)?		
		Response Percent	Response Count
	☐ Yes	100.0%	50
	☐ No	0.0%	1
		Answered Question	51
		Skipped Question	0

2.	If you answered no, thank you for your response and participation in this research instrument. You may choose "Exit this Survey" at the top, right hand corner of the page. If yes, does your department have a written policy defining the steps of your process?		
		Response Percent	Response Count
	☐ Yes	51.2%	24
	☐ No	48.8%	27
		Answered Question	51
		Skipped Question	0

3.	What is the "official" title of your department's review process?	
	☐ Post-Incident Analysis (PIA) - 65.9% (27)	☐ After Action Review (AAR) - 22.0% (9)
	☐ Post-Incident Review (PIR) - 2.4% (1)	☐ After Action Critique (AAC) - 9.8% (4)
	☐ Other (Please specify):	
	Formal Critique Fire Critique Post-Incident Debriefing	
	Post-Incident Critique No Official Title	
	Answered Question	41
	Skipped Question	10

If you answered no to the previous question, thank you for your response and participating in this research instrument. You may choose "Exit this Survey" at the top, right hand corner of the page.

Appendix G (con't)

4.	If yes, please answer the following questions concerning your process. Is your formal policy routinely followed?		
		Response Percent	Response Count
	☐ Yes	61.5%	24
	☐ No	38.5%	15
		Answered Question	39
		Skipped Question	12

5.	Are there specific incident types provided in the process where PIA / AAC activities are required?		
		Response Percent	Response Count
	☐ Yes	64.1%	25
	☐ No	35.9%	15
		Answered Question	39
		Skipped Question	12

6.	If you answered yes to question #5, for what type of incidents is your process recommended / required? Please select the appropriate response from the following options:	
	Recommended	Required
Single-engine responses (car fire, dumpster fire, etc.)	100.0% (8)	0.0% (0)
First-alarm Assignment Fires	64.7% (11)	35.3% (6)
Multiple (MABAS Box) Alarm fires	32.0% (8)	68.0% (17)
Fire resulting in injuries or fatalities	16.0% (4)	84.0% (21)
Fires in high-risk buildings (abandoned, etc.)	22.7% (5)	77.3% (17)
Fires in target hazard buildings (nursing homes, CBRF's, etc.)	13.0% (3)	87.0% (20)
Fires that exceed a pre-determined dollar loss	35.7% (5)	64.3% (9)
Fires in buildings where fire protection features (sprinklers, alarms, etc.) influenced the outcome (negatively or positively)	28.6% (4)	71.4% (10)
Hazardous materials incidents	33.3% (7)	66.7% (14)
Technical rescues (confined space, lake bank)	23.8% (5)	76.2% (16)
Open water / boat operations	52.9% (9)	47.1% (8)
Incidents with unusual circumstances or unexpected development	40.0% (8)	60.0% (12)
MVC's requiring extrication	62.5% (10)	37.5% (6)
EMS calls of unusual circumstances (breech delivery, etc.)	83.3% (10)	16.7% (2)
Medical helicopter calls	90.0% (9)	10.0% (1)

Appendix G (con't)

Other (please specify):		
1) Battalion Chiefs conduct routine "Tail Board" critiques on routine to moderate incident responses. 2) The incident commander has the authority to request a PIA for any incident they deem fit. 3) Code 99 (pulseless patient)		
	Answered Question	26
	Skipped Question	25

7.	Who is responsible for initiating the request to conduct a PIA or AAC? (Select all that apply)	Response Percent	Response Count
☐	Fire Chief	30.8%	12
☐	Training Officer	33.3%	13
☐	Safety Officer	23.1%	9
☐	Incident Commander	64.1%	25
☐	Chief Officer (Ass't / Deputy / Battalion)	48.7%	19
☐	Company Officer (Captain / Lieutenant)	23.1%	9
☐	Line Personnel	15.4%	6
☐	Other (Please specify): 1) If someone is affected and asks for a review, chances are more personnel are affected. 2) Anyone can request an AAR, IC is responsible. 3) Chief of Fire Training Division		
		Answered Question	39
		Skipped Question	12

8.	Who is responsible for overseeing the PIA or AAC process? (Select all that apply)	Response Percent	Response Count
☐	Fire Chief	17.9%	7
☐	Training Officer	30.8%	12
☐	Safety Officer	15.4%	6
☐	Incident Commander	41.0%	18
☐	Chief Officer (Ass't / Deputy / Battalion)	51.3%	20
☐	Company Officer (Captain / Lieutenant)	15.4%	6
☐	Line Personnel	5.1%	2
☐	Other (Please specify): 1) It depends on the complexity of the incident. 2) Someone other than the Incident Commander.		
		Answered Question	39
		Skipped Question	12

Appendix G (con't)

9.	How soon after the incident is your PIA / AAC process required to begin?	Response Percent	Response Count
☐	Immediately	5.1%	2
☐	24-hours	7.7%	3
☐	48-hours	7.7%	3
☐	72-hours	15.4%	6
☐	One-week	38.5%	15
☐	Two-weeks	2.6%	1
☐	N/A	23.1%	9
☐	Other (Please specify: 1) As soon as time allows, preferably as soon as possible. 2) Within the first 24 hours. 3) The policy suggests as soon as practical. 4) Not specified, but within one week is a rule of thumb. 5) No later than three weeks after the incident. 6) When full crew is available. 7) Next shift or that day of the incident is early. 8) As soon as possible.		
		Answered Question	39
		Skipped Question	12

Thank you for participating in this research instrument. The results will be compiled and included in an Applied Research Project submitted to the National Fire Academy as a requirement of the Executive Fire Officer Program.

Appendix H

Internal Feedback Instrument Recipients / Letter

Captain
Captain
Lieutenant
Lieutenant
Lieutenant

Gentlemen:

My next Applied Research Project for the EFO Program is going to be on developing a Post-Incident Analysis (PIA) Process for our department. This process, which may evolve into an SOG, will spell out what kind of incidents would call for a PIA, what level of PIA we would use, how soon it would be conducted post-incident, who can call for a PIA to take place, what the responsibilities of our Command Staff would be during a PIA and what the PIA would consist of.

In the past, we occasionally would have first-in firefighters fill out our "First-in Report" for fires that were of significance either due to their nature, a suspicious cause or excessive dollar loss. As you know, no set policy exists describing the parameters for requesting the more detailed reporting as they were normally conducted upon the direction of the Chief.

The purpose of the PIA is to serve as a tool to improve our operations, for improving firefighter safety and health and for ensuring that the public is receiving quality services (USFA).

I would like very much for your responses to the following questions of my feedback instrument. This information will become part of my independent research for the report.

Thanks.

Joe

Appendix I

Internal Feedback Instrument / Results

1.	From the following, which type of incidents do you believe should automatically trigger a PIA?	Response Count (of 5)
☐	Single-engine responses (car fire, dumpster fire, etc.)	
☐	Full Assignment fires	5
☐	MABAS Box Alarm fires	5
☐	Fire resulting in injuries or fatalities	5
☐	Fires in high-risk buildings (abandoned, etc.)	2
☐	Fires in target hazard buildings (nursing homes, CBRF's, etc.)	3
☐	Fires that exceed a pre-determined dollar loss If so, what amount $_100,000_____	2
☐	Fires in buildings where fire protection features (sprinklers, alarms, etc.) influenced the outcome (positively or negatively)	1
☐	Hazardous material incidents	4
☐	Technical rescues (confined space, lake bank)	5
☐	Open water / boat operations	4
☐	Incidents with unusual circumstances or unexpected development	3
☐	MVC's requiring extrication	2
☐	MVC's w/ serious injuries	1
☐	EMS calls of unusual circumstances (breech delivery, etc.)	3
☐	Flight for Life calls	2
☐	Other - Special requests from the IC or Training / Safety Officer - A building fire in which 2 or more rooms are severely damaged by fire, or where unusual extinguishing problems existed - Incidents resulting in injury to firefighters serious enough to necessitate transport to a medical facility (Emergency, training other) - Close call incidents where a firefighter could have been seriously injured - Mass casualty incident involving 4 or more seriously ill / injured victims - Large scale wildland fires involving 3 or more units - Mock incident participation (large scale) - Emergency preparedness incident EG: Natural, Man-made - Events that tax the departments ability .Full assignment MABAS Box Major Storm mode, Multiple fires - Any incident that an issue can be conveyed to all members of the shift or dept. – good or bad. - Mass casualty incidents (Life Safety Card)	

Appendix I (con't)

2.	What level of PIA should SMFD conduct?	
☐	INFORMAL **Individual / Company--Conducted within the individual shift or operation by the company officer. May include other personnel, as necessary. Usually initiated by the company officer, Incident Commander or Fire Chief on scene, prior to departing. Informal and brief. No documentation of the PIA required. Also known as a "Tailboard Talk".**	4
☐	FORMAL **Department Level--Utilized for critiquing large-scale or complex incidents that involved a large response of fire department resources and/or several outside agencies or incidents that were unusual or tactically significant. Normally, the first-arriving officer will be selected to prepare and conduct the critique in cooperation with the Training Officer. All PIA materials and documents will be forwarded to the Training Officer and Fire Chief for review prior to publishing. The Training Officer will be responsible for coordinating the date and location of department-wide review and notifying outside agencies of any such meetings.**	4

☐	Other
	• Formal for all the following incidents:
	    ○ MABAS Alarms
	    ○ Fires resulting in injuries/fatalities
	    ○ Hazardous materials calls
	    ○ Technical rescue / confined space rescues
	    ○ Incidents with unusual outcomes / circumstances
	• Informal for all others
	• A mix of both, as needed, depending on the level, significance, or severity (scale) of the incident.
	• Mostly informal – but a need for formal for a major event (disaster, 5th Box Alarm, etc.)	

3.	Who should be responsible for initiating the PIA?	
☐	Fire Chief	3
☐	Training Officer	1
☐	Safety Officer	1
☐	Incident Commander	3
☐	Shift Officer (Captain / Lieutenant)	1
☐	Line Personnel	1
☐	Other (Please specify) • Fire Chief - Depending on level of incident - if formal • Depending on the level of the PIA, other participating agencies (Full Assignment, MABAS, DNR, Emergency Management, etc.) • Incident Commander – if informal • Incident Commander or higher depending on the level or scale.	

Appendix I (con't)

4.	Who should be responsible for overseeing the PIA?	
☐	Fire Chief	2
☐	Training Officer	2
☐	Safety Officer	1
☐	Incident Commander	3
☐	Shift Officer (Captain / Lieutenant)	
☐	Line Personnel	
☐	Other (Please specify)	

5.	What other roles should SMFD Officers be responsible for ?	
☐	Reviewing calls for areas of improvement (constructive improvement) **We have people who criticize everything. This makes it difficult to implement any productive QA or PIA program	
☐	Addressing safety issues	
☐	Any re-training needed	
☐	Communicating positives / negatives of incident	
☐	Improvement of operations	

6.	How soon after the incident should the PIA process be required to begin?	
☐	Immediately - Depending on incident - If formal	4
☐	24-hours (w/ exceptions to circumstances)	1
☐	48-hours	
☐	72-hours	
☐	One-week	
☐	Two-weeks	

☐	Other (Please specify)
	- A check off sheet with an established Time-Line / schedule would be helpful. Example:
	   ☐ Immediately – Determine level of PIA
	   ☐ Immediately - Contact _____
	   ☐ With in 24 hours. All pertinent reports submitted (NIFRS)
	   ☐ With in 24 hours. First in reports submitted
	   ☐ When completed Fire investigators reports
	- Start process immediately, plan to accomplish goal within one week as far as communications go; training may take longer.
	- Formal depending on the incident and it's complexity or size (1 or 2 weeks)	

Appendix J

Columbia Fire Department Standard Operating Guideline (OPS-033)
Post Incident Analysis

1.   A building fire in which 3 or more rooms are severely damaged by fire, or where unusual extinguishing problems existed;
2.   Any incident that an unusual event occurs (e.g.: explosion, collapse);
3.   Any fire resulting in a fatality;
4.   Any fire resulting in injury to firefighters serious enough to necessitate transport to a medical facility;
5.   Any close call incident where firefighter could have been injured;
6.   Any Hazardous Materials incident that involves multi-company involvement;
7.   Any mass casualty incident involving 4 or more victims;
8.   At the Incident Commander's discretion, or at the direction of a senior officer;
9.   Large scale wildland fires involving 3 or more units;
10.   Specialty Rescue operations that involves multi-company involvement;
11.   Special events that require CFD involvement (e.g.: Presidential visits, parades);
12.   Mock incident participation;
13.   Any emergency preparedness incident (e.g.: Natural, Man-made);
14.   Events that tax the department's ability. (e.g.: Storm mode, Multiple fires);