CITY OF SAN ANTONIO

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December 17, 2019

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SUBJECT: Audit Report of San Antonio Fire Department Personal Protective Equipment

Mayor and Council Members:

We are pleased to send you the final report of the Audit of San Antonio Fire Department Personal Protective Equipment. This audit began in January 2019 and concluded with an exit meeting with department management in September 2019. Management's verbatim response is included in Appendix B of the report. The San Antonio Fire Department management and staff should be commended for their cooperation and assistance during this audit.

The Office of the City Auditor is available to discuss this report with you individually at your convenience.

Respectfully Submitted,

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
City of San Antonio

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CITY OF SAN ANTONIO

OFFICE OF THE CITY AUDITOR

Audit of San Antonio Fire Department

Personal Protective Equipment

Project No. AU19-014

December 17, 2019

Kevin W. Barthold, CPA, CIA, CISA
City Auditor

Executive Summary

As part of our annual Audit Plan approved by City Council, we conducted an audit of the San Antonio Fire Department (SAFD), specifically personal protective equipment (PPE). The audit objective, conclusions, and recommendations follow:

Determine if the inventory of SAFD PPE is adequately managed and properly accounted for.

SAFD has processes in place to manage PPE gear. The PPE gear stored in the Quartermaster inventory room was accurate and the room was properly secured. Helmets were inspected annually as required. Oversight of the Municipal Emergency Services (MES) contract was adequate to verify charges for new bunker gear (firefighter pants and coat) were accurate, insurance requirements were met, and MES technicians were properly certified. Also, the SAFD has processes in place to inspect PPE gear.

However, tracking and accounting for PPE gear needs improvement. The SAFD does not accurately track PPE gear assigned to firefighters. We noted Gear Cleaning Solutions (GCS) made repairs to certain PPE bunker coats and pants without prior SAFD approval. Finally, the SAFD is not consistently tracking safety inspections for firefighter masks and Self-Contained Breathing Apparatus (SCBA) air cylinders.

We recommend that the SAFD Fire Chief:

- Implement a system to accurately track PPE gear.
- Require GCS to request approval for repairs on PPE gear older than 62 months prior to making such repairs as contractually required. In addition, monitor and review GCS invoices on a monthly basis to verify propriety of PPE repairs and related charges.
- Implement a system to accurately track masks and SCBA cylinders in order to facilitate related inspections and testing in compliance with National Fire Protection Association (NFPA) standards.

SAFD Management agreed with the audit findings and has developed positive action plans to address them. Management's verbatim response is in Appendix B on page 9.

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Background

The Fire Chief's Office oversees the San Antonio Fire Department (SAFD) and has a staff of over 1,800 uniformed and civilian employees. The SAFD mission is "to provide the highest level of professional service to the public by protecting lives, property, and the environment while providing life safety community education." The SAFD consists of 53 fire stations and provides service to over 1.4 million citizens and visitors with a response area that covers over 490 square miles. To maintain uniformed firefighter safety, SAFD recently created the Safety Division.

The purpose of the Safety Division is to provide for the safety of all uniformed personnel. Three Captains serve as Incident Safety Officers (ISOs). These Captains provide a 24-hour safety resource for on-duty personnel and supervise a group of Lieutenants who serve as Acting ISOs on their shift. The Captains are certified to ISO requirements stipulated in the National Fire Protection Association (NFPA) 1521 - Standard for Fire Department Safety Officer Professional Qualifications. For each fire shift, several Lieutenants take on the responsibility of serving as Acting Incident Safety Officer during their shift. As necessary, they will work in place of their Captain and/or maintain safety oversight during more hazardous emergency responses or training evaluations.

Within the Safety Division, the Fire Quartermaster Office is tasked with researching, maintaining, and tracking all components of the personal protective equipment (PPE) ensemble for each of the approximately 1,300 active firefighters in the fire division. Two fire officers manage this program in compliance with the Texas Commission on Fire Protection, NFPA standards, and Directives from the Fire Chief. PPE is the last line of defense between a firefighter and Immediate Danger of Life and Health (IDLH) conditions. The Fire Quartermaster Office performs the daily tasks of inspection and record keeping. Firefighter PPE includes the coats, pants, hoods, gloves, helmets, boots, and the Self-Contained Breathing Apparatus (SCBA) worn by firefighters.

In addition to the Safety Division, SAFD's Logistics and Services Division assists with the tracking of certain elements of the PPE ensemble including the maintenance, inspection, testing and repair of helmets, SCBA gear, and firefighter masks. See the diagram on the following page for the full firefighter PPE ensemble. As shown in the diagram, the cost for the full firefighter PPE ensemble exceeds $11,000.

Cost of firefighter PPE Gear	
Helmet	$300
Hood	$112
Mask	$250
SCBA (Scott)	
Air pack	*$6,600
Regulator	*$1,250
Fire Dex Coat	$1,375
Veridian Gloves	$112
Fire Dex Pants	$926
Honeywell boots	$325
Total =	$11,250

*SCBA air pack and regulator are assigned to Fire Station Engines (fire trucks)

Audit Scope and Methodology

The audit scope was October 2017 through May 2019 and included SAFD personal protective equipment (PPE) including bunker coat, bunker pants, boots, gloves, helmets, and hoods. We also reviewed SCBA and mask tracking and testing.

We interviewed staff from the SAFD Safety Division and obtained an understanding of the controls in place over the management of PPE inventory. We interviewed staff from the SAFD Service and Logistics Division and obtained an understanding of inventory controls over the management of helmets, SCBA harnesses, air cylinders, and masks. We interviewed Gear Cleaning Solutions (GCS) Inc. staff to obtain an understanding of processes related to the cleaning, inspection and repair of PPE gear. Finally, we interviewed Municipal Emergency Services (MES) staff to obtain an understanding of the process for ordering and receiving bunker coats and bunker pants.

We reviewed the SAFD process for tracking the assignment of PPE gear to firefighters. In addition, we reviewed the security of PPE gear stored in the Quartermaster inventory room. Finally, we reviewed bunker coats and bunker pants assigned to firefighters according to SAFD's 'master-list' to determine if they were expired; 10 years after the date of manufacture.

We reviewed GCS compliance with the City contract. Specifically, we reviewed a random sample of 25 GCS invoices to determine if they were adequately supported, approved, and accurately recorded in SAP. We reviewed GCS staff certifications to verify that all staff were properly certified to perform repairs and cleaning. Finally, we reviewed GCS monthly report information included with invoices and certificates of insurance to determine compliance with contract terms.

We also reviewed MES compliance with the City contract. We reviewed MES invoices to determine if they were charging the contacted price for new Fire-Dex bunker coats and pants. In addition, we reviewed staff certifications and insurance certificates to determine if they complied with contract terms.

Finally, we reviewed SAFD Services Division records related to the testing of helmets, SCBA gear, and firefighter masks to determine if tests were performed timely.

Testing criteria included NFPA standards, SAFD standard operating procedures, and City contracts with GCS and MES.

We relied on computer-processed data in the City's SAP system to validate GCS and MES invoicing and payment amounts. Our reliance was based on performing direct tests on the data rather than evaluating the system's general and application

controls. Our direct testing included reviewing detailed invoices and workflow approval. We do not believe that the absence of testing SAP general and application controls had an effect on the results of our audit.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Results and Recommendations

A. Personal Protective Equipment Tracking

The SAFD does not accurately track PPE gear assigned to firefighters.

PPE inventory management and tracking is essential for ensuring that all firefighter gear complies with NFPA guidelines, proper safety inspections are conducted, and the gear is safe. According to the NFPA 1851 standard, the SAFD is required to compile and maintain records on its firefighting protective ensemble elements to include tracking: a) person to whom element is issued, b) manufacturer and model name, c) serial number and, d) month and year of manufacture. Tracking PPE is important so that the SAFD can identify PPE that is expired or about to expire so that it can be replaced for safety purposes.

We physically observed PPE gear assigned to a sample of 40 firefighters located at four different fire stations (10 firefighters at each location) to determine if SAFD's spreadsheet used for tracking PPE by firefighter and serial number was accurate. Overall, we determined that SAFD's spreadsheet used for tracking PPE gear was accurate only 38% of the time. Specifically, we determined that 19 out of 72 (26%) bunker coat and pant elements were tracked accurately. In addition, we observed 60 out of 135 (44%) hood, glove, helmet and boot elements were tracked accurately.

This occurred because SAFD staff did not have processes in place to accurately track and monitor PPE gear. Lacking an adequate tracking process, the SAFD is at risk of not identifying expired and potentially unsafe PPE gear.

Recommendation

The Fire Chief should implement a system to accurately track all PPE gear in compliance with NFPA guidelines.

B. Personal Protective Equipment Repair Monitoring

The SAFD Quartermaster was not monitoring PPE repairs and reviewing invoices submitted by GCS. Also, GCS was not requesting SAFD approval for repairs on bunker gear greater than 62 months old as required by the contract.

According to the GCS contract with the City, repairs to bunker gear older than 62 months from date of manufacture require prior authorization from the SAFD Quartermaster with the exception of basic repairs. Bunker gear that is older than 62 months from date of manufacture is considered mostly depreciated and any repairs made may exceed the value of the gear.

We identified instances where GCS made repairs to PPE bunker coats and pants older than 62 months without prior SAFD approval. We tested a random sample of 25 invoices totaling $31,042 and determined that they were properly supported, accurately priced, and paid in SAP. However, we identified seven invoices that included 28 charges amounting to $3,535 for repairs to PPE bunker coats and pants that were older than 62 months without SAFD approval. We noted three instances where the costs for repairing bunker pants exceeded the depreciated value of the pants.

These issues occur because the SAFD does not monitor PPE repair invoices from GCS. This practice results in repairs that are unapproved, not cost beneficial, and potentially unnecessary.

Recommendation

The Fire Chief should require GCS to request approval for repairs on PPE gear older than 62 months from date of manufacture prior to making such repairs as contractually required. In addition, monitor and review GCS invoices on a monthly basis to verify propriety of PPE repairs and related charges.

C. Mask and SCBA Inspections

The SAFD Logistics and Services Division is not consistently tracking safety inspections for firefighter masks and SCBA air cylinders.

NFPA standard 1500 requires masks to be tested annually. In a sample of 25 masks, we determined that four (16%) of them had not been tested within the timeframe required.

Also, according to the National Fire Protection Association (NFPA) 1852, all carbon fiber composite SCBA air cylinders should be hydrostatically tested every five years from the last hydrostatic test. A hydrostatic or pressure test is a method to validate the structural integrity and safety of a cylinder. Testing is required to identify tank degradation, changes in shape, and leaks.

We tested 16 SCBA air cylinders from four fire stations for proper tracking and hydrostatic testing based on the NFPA 1852 standards mentioned above. We found five out of 16 (31%) cylinders were not properly tracked and/or tested. The test date labeled on four cylinders did not match the test date on the tracking spreadsheet, and we could not verify one cylinder because it had no test date label. In addition, one of the five cylinders had not been hydrostatically tested since April 2011.

Without an accurate tracking system in place, safety inspections for masks and SCBA cylinders can be missed which could pose serious harm to firefighters.

Recommendation

The Fire Chief should implement a system to accurately track masks and SCBA cylinders in order to facilitate related inspections and testing in compliance with NFPA standards.

Appendix A – Staff Acknowledgement

Mark Bigler, CPA-Utah, CISA, CFE, Audit Manager
Danny Zuniga, CPA, CIA, Auditor in Charge
Javier Castillo, IT Auditor

Appendix B – Management Response

CITY OF SAN ANTONIO

SAN ANTONIO TEXAS 78283-3966

September 10, 2019

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
San Antonio, Texas

RE: Management's Corrective Action Plan for Audit of San Antonio Fire Department Personal Protective Equipment

The San Antonio Fire Department has reviewed the audit report and has developed the Corrective Action Plans below corresponding to report recommendations.

Recommendation					
#	Description	Audit Report Page	Accept, Decline	Responsible Person's Name/Title	Completion Date
1	**Personal Protective Equipment Tracking** The Fire Chief should implement a system to accurately track all PPE gear in compliance with NFPA guidelines.	5	Accept	Bryan Norris, District Fire Chief	June, 2020
	<u>Action plan</u>: The Fire Department has purchased and is working through the ITSD process to implement a software tracking system that will accurately track all PPE, to include serial numbers, date of manufacture, date of distribution, assignment, maintenance, and retirement/repurpose. As of now, the Fire Department's Independent Service Provider who is validated through the Texas Commission on Fire Protection (GCS) stores and tracks SAFD PPE inventory.				

Recommendation					
#	Description	Audit Report Page	Accept, Decline	Responsible Person's Name/Title	Completion Date
2	**Personal Protective Equipment Repair Monitoring** The Fire Chief should require GCS to request approval for repairs on PPE gear older than 62 months from date of manufacture prior to making such repairs as contractually required. In addition, the Fire Chief should monitor and review GCS invoices on a monthly basis to verify propriety of PPE repairs and related charges.	6	Accept	Bryan Norris, District Fire Chief/Noel Horan, Sr. Special Projects Manager	January 2020
	Action plan: SAFD Fiscal Compliance Supervisor will conduct quarterly reviews of major repair invoices to verify that approval was provided to the Vendor prior to any repair being made. An operating procedure has been developed documenting this new process. **The SAFD Fiscal Office will work with the Safety Division Quartermaster to ensure and verify that approval was provided for all major repairs performed on PPE that is over sixty-two (62) months from date of manufacture prior to making any payment.**				
3	**Mask and SCBA Inspections** The Fire Chief should implement a system to accurately track masks and SCBA cylinders in order to facilitate inspections and testing in compliance with NFPA standards.	7	Accept	Eric McGowin, Facilities Manager	January 2020
	Action plan: The SCBA team of the Logistic and Services Division will coordinate with Fire Operations staff to obtain an active personnel list each month to ensure all staff members are accounted for during the fit testing cycle. **The SCBA team will also create a labeling system to help identify age and testing cycles of SCBA cylinders in the field and work with the Safety Division to develop an automated process using the new tracking software that is estimated to be in place by June 2020.**				

We are committed to addressing the recommendations in the audit report and the plan of actions presented above.

Sincerely,

Charles N. Hood
Fire Chief
San Antonio Fire Department

12/3/19
Date

Maria Villagómez
Deputy City Manager
City Manager's Office

11/27/19
Date