



City of New York

OFFICE OF THE COMPTROLLER

Scott M. Stringer
COMPTROLLER



MANAGEMENT AUDIT

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Deputy Comptroller for Audit

Audit Report on Certain Life Safety
Equipment and on the Automated
External Defibrillators in Department of
Education Schools

ME20-067A

June 30, 2021

<http://comptroller.nyc.gov>



THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
SCOTT M. STRINGER

June 30, 2021

Dear Residents of the City of New York:

My office has audited the New York City Department of Education (DOE) to determine whether DOE is effectively monitoring the availability and functionality of certain life safety equipment and of the Automated External Defibrillators (AEDs) in its schools. We perform audits such as this to ensure that City agencies protect the safety and health of those who use City facilities.

The audit found that DOE did not consistently ensure that the required life safety equipment at 16 sampled school buildings was in place, functioning, and regularly inspected and tested by qualified personnel. DOE also did not consistently ensure that the contractor responsible for regularly inspecting and testing the school buildings' smoke detection systems has been meeting this responsibility and that buildings without smoke detection systems have at least been equipped with plug-in smoke detectors. In addition, DOE did not consistently ensure that the AEDs in its schools are up-to-date and protected in alarmed cabinets, that each school has the recommended number of certified AED responders, and that the locations of the AEDs are properly posted.

To address these issues, the audit made 21 recommendations, including that DOE should ensure that each school building is equipped with all of the required life safety equipment, that this equipment is functional, and that this equipment is inspected and tested regularly by qualified personnel. The audit also recommended that DOE address any issues noted in this report concerning the availability and functionality of required life safety equipment at the sampled buildings; that the agency ensure that the contractor responsible for inspecting and testing smoke detection systems consistently meets this responsibility; and that the agency ensure that buildings not equipped with smoke detection systems are at least equipped with plug-in smoke detectors. In addition, the audit recommended that DOE ensure that each building is equipped with AEDs that are up-to-date and stored in alarmed cabinets; that each school within a school building has, to the extent possible, at least six certified AED responders; and that the locations of the AEDs are posted at the main entrances of its school buildings.

The results of the audit have been discussed with DOE officials, and their comments have been considered in preparing this report. Their complete written response is attached to this report.

If you have any questions concerning this report, please email my Audit Bureau at audit@comptroller.nyc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Stringer".

Scott M. Stringer

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THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER MANAGEMENT AUDIT

Audit Report on Certain Life Safety Equipment and on the Automated External Defibrillators in Department of Education Schools

ME20-067A

EXECUTIVE SUMMARY

The objective of this audit was to determine whether the New York City (City) Department of Education (DOE) effectively monitors the availability and functionality of certain life safety equipment and of the Automated External Defibrillators (AEDs) in its schools.

DOE is responsible for educating over one million students, from kindergarten (K) through grade 12, in more than 2,000 public schools located in over 1,500 school buildings. DOE is also responsible for ensuring that these school buildings are safe for the students, teachers, and staff. DOE's Division of School Facilities (DSF), the unit that is primarily responsible for the maintenance and repair of DOE school buildings, assigns custodian engineers and custodian assistants to work at DOE school buildings throughout the City.

Among other things, custodian engineers are responsible for ensuring that all required prevention and preparedness steps have been taken to avoid and, if necessary, to successfully respond to fires and certain other types of emergencies in a school building. Each day, custodian engineers are required to check, among other things, that exits, stairways, and corridors are adequately lit and clear of obstructions and that fire extinguishers are ready for use. Furthermore, on a monthly basis, custodian engineers are required to perform more detailed inspections and tests of various equipment, including, but not limited to, fire extinguishers, sprinkler and standpipe systems, elevator intercoms, and carbon monoxide detectors. DOE requires the custodian engineer to record inspections and tests in a DOE document known as the Fire and School Safety Log (Log). Custodian engineers are also responsible for ensuring that individuals performing inspections have the required certifications.

DSF's Borough Facilities Management unit is responsible for monitoring custodian engineers. The unit's borough teams are led by Field Directors, who oversee the Deputy Directors responsible for visiting school buildings and monitoring compliance with City codes and related DOE procedures. As an additional safety measure, DSF has a contract with Davis Technologies Group, LLC, to inspect and test the smoke detection systems in DOE school buildings twice a year, as per the City Fire Code.

To further enhance safety in public school buildings, New York State Education Law §917 mandates that school districts maintain AEDs on site in each school facility and arrange for staff volunteers to be trained and certified to use the AEDs as needed. DOE's Office of School Health (OSH) and the schools' principals are responsible for ensuring that DOE is in compliance with this law. To help meet this responsibility, OSH contracts with Emergency Skills Inc. (ESI) to provide AED program management and emergency response training services. ESI must conduct two unannounced drills per school year at every school building to inspect the AEDs, refresh AED certified responders' skills, provide feedback on responders' performance, and help to prepare the schools to respond to incidents of sudden cardiac arrest.

Audit Findings and Conclusions

DOE did not consistently ensure that the required life safety equipment in the 16 sampled school buildings we visited was in place, functioning, and regularly inspected and tested by qualified custodian engineers or custodian assistants. DOE has also not consistently ensured that the contractor responsible for regularly inspecting and testing the school buildings' smoke detection systems has been meeting this responsibility; that school buildings without smoke detection systems are at least equipped with plug-in smoke detectors; and that the custodian engineer or an assistant at each school building with plug-in smoke detectors regularly inspects and tests these smoke detectors. In addition, DOE has not consistently ensured that the AEDs in its school buildings are up-to-date and protected in alarmed cabinets; that each school has the recommended number of certified AED responders; that the locations of the AEDs are posted at the main entrances of its school buildings; and that each school in which an AED has been used promptly reports the incident to OSH and to ESI.

Due to the deficiencies found in the audit, the students, teachers, and staff in our sampled schools are not protected from fire and other emergencies to the degree mandated by DOE and applicable laws, rules, and regulations. To the extent the conditions we found at the sampled school buildings are consistent with conditions at DOE's other school buildings, the City faces a risk that additional students, teachers, and staff are similarly not adequately protected from fire and other emergencies when they are in its school buildings.

Audit Recommendations

To address the issues raised by this audit, we made 21 recommendations, including the following:

- DOE should ensure that DSF enhances its oversight of school facilities and custodian engineers such that each school building is equipped with all of the required life safety equipment, that this equipment is functional, and that this equipment is inspected and tested regularly by qualified personnel.
- DOE should address, if it has not already done so, any issues concerning the availability and functionality of required life safety equipment identified in this report on the 16 school buildings we visited.
- DOE should ensure that DSF enhances its oversight of the contractor responsible for inspecting and testing school buildings' smoke detection systems such that these systems are inspected and tested regularly.

- DOE should ensure that DSF and school principals enhance their oversight such that those school buildings that are not equipped with smoke detection systems are at least equipped with plug-in smoke detectors.
- DOE should ensure that OSH and school principals enhance their oversight of the schools such that each school building is equipped with AEDs that are up-to-date and stored in alarmed cabinets.
- DOE should ensure that OSH and school principals enhance their oversight such that each school within a school building has, to the extent possible, at least six certified AED responders.
- DOE should ensure that its school principals consistently notify OSH and ESI immediately after an AED has been used.

Agency Response

In its written response, DOE agreed with most of the audit's findings and with 15 of its 21 recommendations. After carefully reviewing DOE's response, we find no basis for modifying any of the report's findings or recommendations.

AUDIT REPORT

Background

DOE is responsible for educating over one million students, from kindergarten (K) through grade 12, in more than 2,000 public schools located in over 1,500 school buildings. DOE is also responsible for ensuring that these school buildings are safe for the students, teachers, and staff.

DOE's Division of School Facilities is the unit that is primarily responsible for the maintenance and repair of DOE school buildings. To accomplish this, DSF assigns custodian engineers and custodian assistants to work at DOE school buildings throughout the City. DSF directly employs approximately 900 custodian engineers and contracts with New York City School Support Services, Inc., a not-for-profit corporation, to obtain the services of approximately 7,000 custodian assistants.

A custodian engineer is responsible for, among other things, maintaining a school building's heating and ventilation systems, fixtures, furniture, and grounds; making minor repairs; and ensuring major repairs are performed in a timely manner by skilled trade mechanics or contractors. In addition, a custodian engineer is responsible for ensuring that all required prevention and preparedness steps have been taken to avoid and, if necessary, to successfully respond to fires and certain other types of emergencies in a school building.

Each day, before school begins, custodian engineers are required to perform daily safety compliance inspections of the entire building and grounds, and to check, among other things, that exits, stairways, and corridors are adequately lit and clear of obstructions, exit signs are adequately lit, and fire extinguishers are ready for use.

Furthermore, on a monthly basis, custodian engineers are required to perform more detailed inspections and tests of various equipment, including, but not limited to, fire extinguishers, sprinkler and standpipe systems,¹ elevator intercoms, and carbon monoxide detectors. DOE requires the custodian engineer to record inspections and tests in a DOE document known as the Fire and School Safety Log. Custodian engineers are also responsible for ensuring that individuals performing inspections or tests of fire alarm, sprinkler, or standpipe systems possess the relevant three-year Certificates of Fitness issued by the City Fire Department.

DSF's Borough Facilities Management unit is responsible for monitoring custodian engineers. The unit includes 7 borough teams (Queens North, Queens South, Manhattan, Staten Island, Bronx, Brooklyn North, and Brooklyn South) led by Field Directors, who oversee a total of 39 Deputy Directors of Facilities. Each Deputy Director typically oversees approximately 35 school buildings and must regularly visit each building to ensure compliance with, among other things, City Fire and Building Codes and related DOE procedures. Also, twice a calendar year, a Deputy Director must complete a Fire Safety Checklist and a Fire Safety Log Checklist for each assigned building, documenting their building observations and their Fire and School Safety Log reviews. As an additional safety measure, DSF has a contract with Davis Technologies Group, LLC, to inspect

¹ A standpipe is a type of water piping in a building to which hoses can be connected to apply water to a fire. There are two types of standpipe systems: a dry standpipe and a wet standpipe. A dry standpipe is only filled with water when needed. Firefighters supply water to the dry standpipe from nearby fire hydrants. A wet standpipe is filled with high-pressured water at all times.

and test the smoke detection systems in DOE school buildings twice a year, as per the City Fire Code.

To further enhance safety in public school buildings, New York State Education Law §917 mandates that school districts maintain AEDs² on site in each school facility and arrange for staff volunteers to be trained and certified to use the AEDs. DOE's Office of School Health and the schools' principals are responsible for ensuring that DOE is in compliance with this law.³ To obtain assistance in meeting this responsibility, OSH contracts with ESI, which provides a variety of AED program management and emergency response training services. ESI must conduct two unannounced drills per school year at every school building to refresh AED certified responders' skills, provide feedback on responders' performance, and help to prepare the schools to respond appropriately and in a timely manner to incidents of sudden cardiac arrest. ESI also inspects the AEDs during its visits to the school buildings.

Objective

To determine whether DOE is effectively monitoring the availability and functionality of certain life safety equipment and of the AEDs in its schools.

Scope and Methodology Statement

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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the City Charter.

The scope of this audit covered the period from September 1, 2018, through March 13, 2020. This audit focused on the presence, functionality, and testing of the following life safety equipment at 16 sampled school buildings housing a total of 34 schools: (1) interior fire alarm pull stations; (2) fire extinguishers; (3) sprinkler systems; (4) standpipe systems; (5) lighted exit signs; (6) emergency lights; (7) elevator intercoms; (8) holding room intercoms;⁴ (9) carbon monoxide detectors; and (10) smoke detectors. This audit also focused on the presence and inspections of AEDs, the availability of AED certified responders, the responders' readiness to use AEDs, and other aspects of DOE's AED program at the 16 buildings. Please refer to Appendix I for a list of the 16 buildings we visited. Please also refer to the Detailed Scope and Methodology at the end of this report for the specific procedures followed and the tests conducted during this audit.

² An AED is a medical device used to help those experiencing sudden cardiac arrest. An AED analyzes a person's heart rhythm and, if necessary, delivers an electrical shock, or defibrillation, to help the heart re-establish a normal rhythm.

³ OSH consists of various subdivisions, including the Office of Health Services, which is responsible for a variety of programs, including the AED program. A director and two program managers oversee the AED program.

⁴ Holding rooms are classrooms to which physically challenged individuals can go during an emergency if other building evacuation options are too difficult or unavailable. Holding rooms have certain added features, such as fire resistant doors, fire extinguishers, intercom systems, windows that open outwards, and window sills that are painted red so that firefighters know that these are holding room windows.

Discussion of Audit Results with DOE

The matters covered in this report were discussed with DOE officials during and at the conclusion of this audit. A preliminary draft report was sent to DOE on May 7, 2021, and was discussed at an exit conference held on May 24, 2021. On June 8, 2021, we submitted a draft report to DOE with a request for comments. We received a written response from DOE on June 22, 2021.

In its written response, DOE agreed with most of the audit's findings and with 15 of its 21 recommendations. DOE disagreed with six recommendations: (#4) that it ensure that equipment identification numbers are affixed on or near all fire extinguisher stations; (#5) that it consider affixing equipment identification numbers on or near the interior fire alarm pull stations and emergency lights' individual battery boxes; (#13) that school buildings without smoke detection systems at least be equipped with plug-in smoke detectors; (#14) that plug-in smoke detectors be inspected and tested regularly; (#15) that it prepare written procedures concerning the inspections and tests of plug-in smoke detectors; and (#16) that it modify the Fire and School Safety Log to include a section to document the testing of plug-in smoke detectors. Having considered DOE's response to this audit, we, for the reasons set forth in the recommendations sections of this report, urge DOE to reconsider these recommendations.

DOE disagreed with the finding that its AEDs are not consistently up-to-date. DOE stated that it provided warranty documentation that proved the AEDs included in the audit were under warranty. DOE also argues that “[w]hile the DOE, as a general practice, seeks to replace AEDs when they are out of warranty, it is inaccurate to state that failure to replace AEDs as their warranties expire increases the risk that an AED will not be in working condition. The DOE's AED vendor, Emergency Skills, conducts biannual drills and inspections to ensure AEDs are in working order. Each school has a designated AED contact who can report any issues with a school's AED(s) to the Office of Health Services. AEDs are promptly replaced if it is determined they are not in working condition.”

While DOE did provide warranty information showing that some of its AEDs were still covered by warranties at the time of our visits to the schools, our review showed that the warranties for a total of 45 AEDs in 11 of the 16 school buildings in our sample had expired as of December 1, 2019. Our analysis was conservatively based on the installation dates of the AEDs, although the warranties actually went into effect earlier—on the dates the AEDs were shipped to DOE. As DOE stated in its written response and during the audit, its general practice is to replace AEDs when they are out of warranty. We believe that this policy can help DOE ensure that its AEDs remain up-to-date. We therefore urge DOE to consistently adhere to this policy.

After carefully reviewing DOE's response, we find no basis for modifying any of the report's findings or recommendations.

The full text of DOE's response is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

DOE did not consistently ensure that the required life safety equipment in the 16 sampled school buildings we visited was in place, functioning, and regularly inspected and tested by qualified custodian engineers or custodian assistants. DOE has also not consistently ensured that the contractor responsible for regularly inspecting and testing the school buildings' smoke detection systems has been meeting this responsibility; that school buildings without smoke detection systems are at least equipped with plug-in smoke detectors; and that the custodian engineer or an assistant at each school building with plug-in smoke detectors regularly inspects and tests these smoke detectors. In addition, DOE has not consistently ensured that the AEDs in its school buildings are up-to-date and protected in alarmed cabinets; that each school has the recommended number of certified AED responders; that the locations of the AEDs are posted at the main entrances of its school buildings; and that each school in which an AED has been used promptly reports the incident to DOE's Office of School Health and Emergency Skills, Inc.

Due to the deficiencies found in the audit, the students, teachers, and staff in our sampled schools are not protected from fire and other emergencies to the degree mandated by DOE and applicable laws, rules, and regulations. To the extent the conditions we found at the sampled school buildings are consistent with conditions at DOE's other school buildings, the City faces a risk that additional students, teachers, and staff are similarly not adequately protected from fire and other emergencies when they are in its school buildings.

The following sections of this report discuss these issues in further detail.

Weaknesses in DOE's Monitoring of the Availability and Functionality of Life Safety Equipment

To maintain safe environments for its students, teachers, and staff, DOE needs to ensure that its school buildings are equipped with functioning life safety equipment that is regularly inspected and tested. Our audit found that DOE does not consistently ensure that its school buildings have all of the required life safety equipment and that the equipment is working properly and inspected regularly by qualified individuals. These weaknesses are discussed in the following sections of this report.

DOE Does Not Consistently Ensure That Life Safety Equipment Is in Place and Functional

According to the New York City Fire and Building Codes, DOE school buildings must have a variety of life safety equipment in place and functional. To determine whether schools complied with these requirements, we conducted observations at 16 school buildings (housing a total of 34 schools) during the period December 6, 2019 through March 13, 2020, and reviewed the Fire and School Safety Logs (and related documentation) for the period September 1, 2018 through December 31, 2019, relating to 10 types of life safety items, 9 of which we cover here. (The remaining type—smoke detectors—is covered in the next section of this report.) The results of our observations are presented below in Table I and in the text that follows.

Table I

Life Safety Equipment Availability and
Functionality Deficiencies Identified at
16 Sampled School Buildings

Life Safety Equipment Deficiency Identified at School Buildings*	# of School Buildings Where Life Safety Equipment Was Inspected/Tested**	# of School Buildings Where Life Safety Equipment Deficiency Was Identified	% of School Buildings Where Life Safety Equipment Deficiency Was Identified
Emergency Lights (one or more emergency lights): <ul style="list-style-type: none"> missing in hallways/stairwells; not working in various locations; not fixed in a timely manner*** 	16	12	75%
	12	9	75%
	16	10	63%
Exit Signs (one or more exit signs): <ul style="list-style-type: none"> missing from above swinging fire doors at corridor intersections/above fire doors leading to stairwells; not properly lit in various locations 	16	7	44%
	16	11	69%
Fire Extinguishers (one or more fire extinguishers): <ul style="list-style-type: none"> missing in places of public assembly (with an occupancy of 75 persons or more) including gyms, cafeterias, and auditoriums; not secured or functioning properly 	16	12	75%
	16	16	100%
Carbon Monoxide Detectors (one or more detectors): <ul style="list-style-type: none"> missing in cafeteria kitchens; not working in cafeteria kitchens or boiler rooms 	16	2	13%
	16	4	25%
Elevator Intercoms (one or more intercoms): <ul style="list-style-type: none"> not working; not fixed in a timely manner*** 	9	4	44%
	9	7	78%
Holding Room Intercoms (one or more intercoms): <ul style="list-style-type: none"> missing; not working properly 	6	2	33%
	6	2	33%
Sprinkler System (one or more valves or hose connections): <ul style="list-style-type: none"> unlocked sprinkler control valves**** blocked outdoor Fire Department hose connections to sprinkler system 	15	2	13%
	11	1	9%
Interior Fire Alarm Pull Stations (one or more fire alarm pull stations): <ul style="list-style-type: none"> not fixed in a timely manner*** 	16	1	6%

*We found no availability or functionality issues with the standpipe systems, which were located in 5 of the 16 buildings.

**Some buildings did not have elevators, holding rooms, or sprinkler systems. For some buildings, we did not test the emergency lights so as not to disrupt classroom activities or for other reasons explained in the Detailed Scope and Methodology section.

***Fixed timely – repaired/replaced by the end of the month following the one during which the equipment was found to be not working.

****Keeping an open valve locked helps to ensure that it remains open to allow water to flow to the sprinklers when needed.

Based on the results of our observations shown in Table I, we determined that for the 9 types of life safety items that we checked for availability in 16 sampled school buildings, 35 (30 percent) of the total of 115 items in the 16 buildings were not fully available as required.⁵ We also determined that for the 9 types of life safety items that we checked for functionality in the 16 sampled school buildings, 56 (49 percent) of the total of 115 items in the 16 buildings were not functioning properly.⁶

We also noted the following weaknesses:

- In 1 school building, a total of 75 emergency lights were not working during our visit;
- In 1 school building, a total of 19 emergency lights were not working for the entire 16-month period of our review;
- In 1 school building, a total of 14 exit signs were not properly lit during our visit;
- In 2 school buildings, the elevator intercoms were not working for the entire 16-month period of our review; and
- In 1 of the 11 school buildings lacking fire extinguishers in a place of public assembly, there were also no fire extinguishers in its four holding rooms.
- All 16 school buildings had fire extinguisher issues, including extinguishers for which the pressure was either too low (undercharged) or too high (overcharged), or for which the bottom of the canisters were damaged and thus required repair or replacement (5 buildings); extinguishers that were not properly secured either with brackets or in wall cabinets and had simply been placed on the floor or hung on hooks (15 buildings); extinguishers for which brackets were either coming out of the wall or were coming off of the fire extinguishers (2 buildings); and missing or broken tamper seals, used to protect safety pins from accidentally being pulled, thereby causing an extinguisher to discharge, and used to identify whether an extinguisher has been tampered with (1 building).

Furthermore, in the 2 of the 16 school buildings that had temporary classroom units⁷ (and that had a total of 14 such units), 11 of the 14 units had various life safety equipment issues, including fire extinguishers that were defective, missing, or not properly secured; emergency lights that did not work properly when tested; and an interior fire alarm horn and strobe light combination coming out of the wall with wires exposed.

Failure to provide or maintain required life safety equipment leaves students and staff at increased risk of harm should an emergency arise and such equipment is not available, cannot be located, or is not functional. For example, a lack of functioning lighted exit signs and emergency lights

⁵ The total of 115 items that we checked at the 16 school buildings we visited can be calculated as follows: up to 9 types of life safety items per school building times 16 school buildings equals 144 items; from the 144 items, subtract 29 items (for a total of 115 items) due to some buildings not having standpipe systems (11), elevators (7), holding rooms (10), or a sprinkler system (1).

⁶ To arrive at this conclusion, we determined whether the 9 types of life safety items we checked at the 16 school buildings had functionality issues by observing the items during our building visits and by reviewing the Fire and School Safety Logs (and related documentation) at the buildings for the period September 1, 2018, through December 31, 2019, which provided information on the timeliness of the repairs of these items. Seven of the 9 buildings at which some emergency lights were not working at the time of our visits were part of the group of 10 buildings that had some emergency lights that had not been repaired in a timely manner during the period of our review. All four of the buildings with elevator intercoms that were not working at the time of our visits were part of the group of seven buildings that had elevator intercoms that had not been repaired in a timely manner during the period of our review.

⁷ A temporary classroom unit is a trailer, or mobile unit, used to temporarily house students because of overcrowding in a main school building.

increases the risk that people in DOE school buildings will not be guided to safety in emergency situations; a lack of functioning carbon monoxide detectors increases the risk that people in the school buildings will not be warned of the presence of carbon monoxide in the air, a potentially life-threatening situation; a lack of functioning intercoms in elevators and holding rooms increases the risk that people in the school buildings will not be able to communicate with safety personnel during an emergency; and any lack of functioning fire extinguishers increases the risk that fires will not be extinguished as quickly as possible.

Required Inspections and Tests of Life Safety Equipment Are Not Regularly Conducted

According to the New York City Fire and Building Codes, as well as DOE's written procedures, DOE must ensure that the life safety equipment in its schools is inspected and tested regularly. For the 16 sampled school buildings, we analyzed the Fire and School Safety Logs and related documentation for the period September 1, 2018 through December 31, 2019, relating to 9 tests and inspections (e.g., sprinkler system test, fire extinguisher inspection). The results of our analysis are presented below in Table II and in the text that follows.

Table II

Life Safety Equipment Inspection and
Test Deficiencies Identified at
16 Sampled School Buildings

Life Safety Equipment Inspection and Test Deficiencies Identified at School Buildings*	# of School Buildings Where Inspection or Test Was Required**	# of School Buildings Where Inspection or Test Was Not Consistently Performed	% of School Buildings Where Inspection or Test Was Not Consistently Performed
Fire Safety Compliance Inspections: • not consistently performed on a daily basis	16	12	75%
Interior Fire Alarm Pull Station Tests: • not performed on all pull stations at least once a month	16	13	81%
Emergency Light Tests: • not performed on a monthly basis	16	7	44%
Fire Extinguisher Inspections: • not completed monthly for readily available extinguishers; • not completed monthly for spare extinguishers stored in the event those readily available malfunction	16	8	50%
	16	12	75%
Sprinkler System Tests: • not performed on a monthly basis	15	7	47%
Carbon Monoxide Detector Tests: • not performed on a monthly basis	16	6	38%
Elevator Intercom Tests: • not performed on a monthly basis	9	4	44%
Standpipe System Tests: • not performed on a monthly basis	5	2	40%
Holding Room Intercom Tests: • not performed on a weekly basis	3***	2	67%

* There is no requirement for weekly or monthly inspections or tests of lighted exit signs. Poorly lit exit signs should be noted during the daily fire safety compliance inspections.

**Some buildings did not have elevators, holding rooms, sprinkler systems, or standpipe systems.

***Six of the 16 buildings had holding rooms; only three of the six buildings had functioning holding room intercoms.

Based on the results shown in Table II, we determined that the required inspections and tests presented above were not consistently performed at between 38 and 81 percent of the school buildings.

We also noted the following weaknesses:

- Custodian engineers do not consistently record the results of their daily fire safety compliance inspections;
- For 7 of the 13 buildings in which all of the interior fire alarm pull stations were not tested each month, there were multiple tests of some stations, while other stations were not tested at all; for 1 of the 7 buildings, during each month of the 16-month period of our review, 20 to 68 percent of the interior fire alarm pull stations were not tested as required;

- For seven buildings, the custodian engineers told us that they were not aware that inspections of spare fire extinguishers were required; and
- At eight school buildings, we found multiple versions of equipment test records for the same month that presented conflicting information and thereby raised questions as to the reliability of the test records in the Logs.

DOE requires that schools affix identification numbers on or near fire extinguisher stations in order to track the testing of this equipment. However, for 7 of the 16 school buildings, and for 6 of the 14 temporary classroom units (located on the grounds of 2 school buildings), such identification numbers were not affixed or not consistently affixed on or near the fire extinguisher stations.

Some school buildings also affix identification numbers on or near interior fire alarm pull stations and/or emergency lights' individual battery boxes. For 8 of the 16 school buildings, and for 8 of the 14 temporary classroom units, equipment identification numbers were generally affixed on or near interior fire alarm pull stations and/or emergency lights' individual battery boxes. Although only required for fire extinguishers, such identification numbers for interior fire alarm pull stations and emergency lights' individual battery boxes can help the school buildings track this equipment, not only to ensure regular inspection and testing, but also to ensure proper maintenance, repair, and replacement of the items.

Failure to regularly inspect and test life safety equipment leaves students and staff at increased risk of harm should an emergency arise that necessitates the utilization of such equipment. For example, any failure to perform monthly interior fire alarm pull station tests increases the risk that people in DOE school buildings will not be warned of emergency situations; any failure to have the sprinkler and standpipe systems in the school buildings inspected and tested increases the risk that school buildings with such systems will not have the benefit of a functioning sprinkler and standpipe system during a fire emergency that can facilitate firefighters' efforts to extinguish fires.

Additionally, failure to perform daily fire safety compliance inspections or to record the results of such inspections increases the risk that people in the school buildings will not benefit from the enhanced readiness of the schools to handle emergencies that ensues from the consistent performance of daily fire safety compliance inspections and from the routine recording of the results of such inspections.

Required Inspections and Tests of Life Safety Equipment Are Not Consistently Conducted by Qualified Personnel

According to the New York City Fire Code, as well as DOE's written procedures, DOE must ensure that the life safety equipment in its school buildings is inspected and tested regularly by qualified custodian engineers or custodian assistants. However, based on the results of our analysis of the Fire and School Safety Logs for the period September 1, 2018 through December 31, 2019, at the 16 school buildings we visited, we noted the following weaknesses:

- At 10 of the 16 school buildings, 1 or more employees were performing interior fire alarm pull station tests without evidence of the required S-95 Certificate of Fitness;
- For 6 of the 15 school buildings with sprinkler systems, 1 or more employees were performing monthly sprinkler inspections and tests without evidence of the required S-12 Certificate of Fitness; and

- For 2 of the 5 school buildings with standpipe systems, one or more employees were performing required monthly standpipe inspections and tests without evidence of the required S-13 Certificate of Fitness.

Although subsequent to our visits to two school buildings, DOE provided the certifications for three employees, these certifications were not available for review in the Fire and School Safety Logs during our visits as required by DOE procedures.

Any failure to have the interior fire alarm pull stations, the sprinkler systems, and the standpipe systems inspected and tested by qualified personnel increases the risk that defective safety equipment will not be identified and repaired or replaced as necessary.

Inadequate Evidence of Division of School Facilities Oversight

It is the responsibility of the custodian engineer at each school building to ensure that the required life safety equipment in the building is in place, functioning, and regularly inspected and tested by qualified personnel. DOE's Division of School Facilities is responsible for ensuring that the custodian engineers at all DOE school buildings meet this obligation. Accordingly, DSF's Deputy Directors must regularly visit each building and twice a calendar year, as part of an evaluation of a custodian engineer's performance, complete a Fire Safety Checklist and a Fire Safety Log Checklist for each building, documenting their building observations and their Fire and School Safety Log reviews.

For each of the 16 school buildings, we requested both checklists for Calendar Year 2019. DOE only provided us with documentation for 5 of the 16 buildings. DOE's inability to provide the checklists for the remaining 11 buildings indicates that either the checklists are not consistently being completed as required or that they are not being maintained in a manner that facilitates DOE management's use of them as an oversight tool. Our review of the documentation indicated that for two of the five buildings, the Deputy Directors only completed the checklists once during the calendar year. For one of the five buildings, the Deputy Director did not complete either of the two required Fire Safety Log Checklists during the calendar year.

The weaknesses we noted above concerning the availability, functionality, and regular inspection and testing of life safety equipment by qualified personnel in the school buildings, and the concern that custodian performance checklists are not being consistently completed as required and readily available, indicate that DSF needs to enhance its oversight of the custodian engineers' and Deputy Directors' performance in these areas.

The inspections and tests of life safety equipment in the schools might also be improved through a revision of the Fire and School Safety Log. Currently, the Log does not include designated areas to record all required inspections and tests. The Log does not include a section on the inspection of lighted exit signs or on the results of the tests of interior fire alarm pull stations, fire extinguishers, emergency lights, holding room intercoms, and carbon monoxide detectors. The Log also does not show the dates on which the interior fire alarm pull station tests were performed or provide location information for the key components of the standpipe and sprinkler systems.

Recommendations

1. DOE should ensure that its Division of School Facilities enhances its oversight of school facilities and custodian engineers such that each school building is equipped with all of the required life safety equipment, that this equipment is

functional, and that this equipment is inspected and tested regularly by qualified personnel.

DOE Response: “The DOE agrees with this recommendation. Checklists used to generate ratings for custodian engineers, which cover the items contained in this report and are biannually reviewed, are now maintained centrally. The DOE is also re-examining an electronic format to make this process more efficient and records management more streamlined.”

2. DOE should ensure that daily fire safety compliance inspections are regularly completed and that the results are consistently recorded.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed these practices is contradicted by the audit findings detailed above. Therefore, we urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

3. DOE should ensure that there are not multiple versions of a monthly test record at a school building that present conflicting information about the equipment tests performed during a given month.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed this practice is contradicted by the audit finding detailed above. Therefore, we urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

4. DOE should ensure that equipment identification numbers are affixed on or near all fire extinguisher stations.

DOE Response: “The DOE disagrees with this recommendation. Fire extinguishers are numerically identified in building plans. Different engineers may have used different numbering systems over the years. Enforcing a new system of identification would be inefficient. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.”

Auditor Comment: We are not recommending that DOE enforce any particular numbering system. Rather, we are recommending that *all* of the custodian engineers devise simple numbering systems for the fire extinguishers (as many of the custodian engineers already have). The numbers should be affixed on or near the fire extinguisher stations and recorded on the Fire and School Safety Logs. We continue to believe that such a numbering system can help the

custodian engineers track this equipment, not only to help ensure regular inspections and tests, but also to help ensure proper maintenance, repair, and replacement of the items. In addition, DOE informed us in an April 17, 2020 email that it requires custodian engineers to affix equipment identification numbers to fire extinguisher stations. We therefore urge DOE to reconsider its position and implement this recommendation.

5. DOE should consider affixing equipment identification numbers on or near the interior fire alarm pull stations and emergency lights' individual battery boxes in its school buildings.

DOE Response: "The DOE disagrees with this recommendation. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings."

Auditor Comment: We continue to recommend that *all* custodian engineers devise, as many of them already have, simple numbering systems for the interior fire alarm pull stations and the emergency lights' individual battery boxes. The numbers should be affixed on or near the interior fire alarm pull stations and the emergency lights' individual battery boxes and recorded on the Fire and School Safety Logs. Such a numbering system can help custodian engineers more effectively track these items, not only to ensure regular inspections and tests, but also to ensure proper maintenance, repair, and replacement of the items. We therefore urge DOE to reconsider its position and implement this recommendation.

6. DOE should modify the Fire and School Safety Log to include a section on the inspection of lighted exit signs.

DOE Response: "The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a new section on lighted exit signs."

7. DOE should modify the Fire and School Safety Log to more clearly show the results of the inspections and tests of a school building's life safety equipment.

DOE Response: "The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a new section for all deficiencies found throughout the year. This section will also include a place for logging the resolution to the identified deficiency."

8. DOE should modify the Fire and School Safety Log to include the dates that the tests of the interior fire alarm pull stations are performed.

DOE Response: "The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a date column for interior fire alarm pull stations."

9. DOE should modify the Fire and School Safety Log to include a section to document the locations of the hoses, hose connections, and valves for the standpipe system.

DOE Response: “The DOE agrees with this recommendation. We will amend logbooks for the next years’ printing to include an informational page which has these locations.”

10. DOE should modify the Fire and School Safety Log to more clearly show the location of a school building’s secondary sprinkler valve.

DOE Response: “The DOE agrees with this recommendation. We will amend logbooks for the next years’ printing to include an informational page which has these locations.”

11. DOE should address, if it has not already done so, any issues concerning the availability and functionality of required life safety equipment identified in this report on the 16 school buildings we visited.

DOE Response: “The DOE agrees with this recommendation. Although the specific life safety equipment was not identified in this report, nor in any of the subsequent findings documents that were given after the preliminary and draft report were issued, the field teams and custodian engineers went through the schools visited by the auditors to identify deficiencies in the categories of life safety equipment identified in the report. All items have been addressed and corrective action has either already been completed or is currently in progress.”

Auditor Comment: We commend DOE for recognizing the need to address the issues we identified on the 16 school buildings we visited concerning the availability and functionality of required life safety equipment.

Further to DOE’s response, we note that in most instances we identified the specific life safety equipment items about which we had availability or functionality concerns in the detailed emails we sent throughout the audit to the custodian engineers for the 16 school buildings in our sample. DOE’s Office of the Auditor General was copied on all of those emails. In addition, we also sent DOE a series of findings summaries related to the scope of the audit between May 14 and May 25, 2021, which included, among other things, information on the specific buildings for which we had specific concerns related to the availability and functionality of certain types of life safety equipment. Therefore, DOE had all of these summaries two weeks *before* the issuance of the draft report on June 8, 2021.

Weaknesses in DOE’s Monitoring of Smoke Detection Systems

To maintain safe environments for its students, teachers, and staff, DOE needs to ensure that its school buildings are equipped with functioning smoke detectors that are regularly inspected and tested. However, DOE does not consistently ensure that the smoke detection systems in its school

buildings are regularly inspected and tested by the contractor (Davis Technologies Group, LLC) responsible for this function; that every school building is equipped with either a smoke detection system (smoke detectors connected to an electrical system) or plug-in smoke detectors (portable smoke detectors powered by batteries); or that the plug-in smoke detectors in school buildings without smoke detection systems are regularly inspected and tested by custodian engineers.

Inspections and Tests of the Smoke Detection Systems Are Not Consistently Performed

According to the New York City Fire Code (and the National Fire Protection Association Codes & Standards cited by the Fire Code), the smoke detection systems in DOE school buildings should be regularly inspected and tested.

Of the 16 school buildings in our sample, 13 had smoke detection systems. Based on our review of DOE's records of the contractor's smoke detector inspections and tests conducted between September 1, 2018 and March 13, 2020, we noted that inspections and tests of the smoke detection systems had not been performed for 10 of the 13 buildings during this period. There is evidence that Davis Technologies Group, LLC, visited 2 of these 10 school buildings; however, the purpose of the visits was to repair the smoke detection systems and/or the associated fire alarm systems, rather than to inspect or test the smoke detectors.

Concerning the above-mentioned 10 buildings, we found that one or more smoke detectors at 2 of those buildings were covered with plastic, thus preventing the detectors from functioning properly, and did not find any smoke detectors in the main distribution frame room (where communication cables are located) as required by the City Building Code at another one of the 10 buildings. Concerning the three school buildings where inspections and tests were actually performed, we noted that the inspections did not occur every six months (as required by the City Fire Code) at two of those buildings, each of which had only one inspection between September 1, 2018 and March 13, 2020.

Any failure to regularly inspect and test the school buildings' smoke detection systems increases the risk that people in the school buildings will not receive timely warnings of fire and smoke conditions if defects in the systems are not identified and repaired.

School Buildings without Smoke Detection Systems Were Not Consistently Equipped with Plug-in Smoke Detectors

DOE stated that the installation of an integrated smoke detection/fire alarm system would be a capital project that would need to be funded and managed by the School Construction Authority. According to the New York City Fire Department, it is advisable that buildings be equipped with smoke detectors. Of the 3 school buildings in our sample that did not have smoke detection systems, however, only one was equipped with plug-in smoke detectors, the other 2 school buildings had no smoke detection mechanisms in place.

Plug-in smoke detectors are readily available, relatively affordable, and easy to install. A failure to install plug-in smoke detectors in school buildings without smoke detection systems increases the risk that people in such school buildings will not receive timely warnings if there are fire and smoke conditions.

Plug-in Smoke Detectors Were Not Consistently Inspected and Tested

According to DOE officials, plug-in smoke detectors in school buildings without smoke detection systems should be inspected and tested by the custodian engineers. However, based on our review of the Fire and School Safety Logs for the period of September 1, 2018 through December 31, 2019, we noted that the plug-in smoke detectors at the one school building where they were installed had not been inspected and tested by the custodian engineer at all during this period. This may have been due in part to the Fire and School Safety Log lacking a testing section for plug-in smoke detectors and to the fact that there are no written procedures on this responsibility.

Any failure to regularly inspect and test a school building's plug-in smoke detectors increases the risk that people in the school building will not receive timely warnings of fire and smoke conditions if defective smoke detectors are not identified and repaired or replaced as necessary.

With regard to the issues discussed above, we note that it is the responsibility of DOE's contractor to regularly conduct inspections and tests of the smoke detection systems and the responsibility of custodian engineers to ensure that plug-in smoke detectors are regularly inspected and tested. Nonetheless, DSF is responsible for ensuring that contractors (through DSF's Contracts & Technical Services unit) and custodian engineers conduct required inspections and tests. Additionally, DSF and school principals are responsible for ensuring that school buildings without smoke detection systems are at least equipped with plug-in smoke detectors. The weaknesses noted in this section indicate that DOE needs to enhance its oversight in these areas.

Recommendations

12. DOE should ensure that the Division of School Facilities enhances its oversight of the contractor responsible for inspecting and testing school buildings' smoke detection systems such that these systems are inspected and tested regularly.

DOE Response: "The DOE agrees with this recommendation. The DOE has created a facilities compliance division separate from the facilities field teams and custodian engineers to ensure enhanced oversight."

13. DOE should ensure that the Division of School Facilities and school principals enhance their oversight such that those school buildings that are not equipped with smoke detection systems are at least equipped with plug-in smoke detectors.

DOE Response: "The DOE disagrees with this recommendation. All buildings have fire alarm systems. The items listed in this report as 'plug-ins' were mistakenly understood to be smoke detectors, but they are carbon monoxide detectors. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings."

Auditor Comment: The fact that all school buildings have fire alarm systems is irrelevant to our recommendation that school buildings not equipped with smoke detection systems at least be equipped with plug-in smoke detectors, as *recommended by the Fire Department*.

With regard to DOE's statement that the plug-ins "were mistakenly understood to be smoke detectors," the "mistake" was based solely on information provided by

DOE to the auditors. Specifically, DOE stated in an October 9, 2020 email that plug-in smoke detectors had been installed in the boiler room of 1 of the 16 school buildings and in the school's temporary classroom units. Therefore, if these detectors were in fact carbon monoxide detectors, it was DOE itself that had "mistakenly understood" that they were smoke detectors. Further, although we notified DOE on April 21, 2021 that we had concluded that 1 of the 16 school buildings in our sample had plug-in smoke detectors, it was not until DOE's June 22, 2021 written response to our draft report that it notified us of its misunderstanding on this matter.

However, and most importantly, DOE's response that the existing devices are carbon monoxide detectors and not smoke detectors is entirely irrelevant to our recommendations. If a school in fact had no plug-in smoke detectors, that fact only adds to the problem by raising the number of school buildings in our sample with neither smoke detection systems nor plug-in smoke detectors from two to three. If the buildings cannot be upgraded with smoke detection systems, plug-in smoke detectors are a relatively affordable life-saving alternative.

Accordingly, we continue to recommend that DOE consider installing plug-in smoke detectors in those school buildings that are not equipped with smoke detection systems.

14. DOE should ensure that the Division of School Facilities enhances its oversight of the custodian engineers such that the plug-in smoke detectors in school buildings so equipped are inspected and tested regularly.

DOE Response: "The DOE disagrees with this recommendation. All buildings have fire alarm systems. All of the items listed in this report as 'plug-ins' were mistakenly identified as smoke detectors, when they are actually carbon monoxide detectors. . . . We have no plug-in smoke detectors in any of our buildings. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings."

Auditor Comment: As noted immediately above in our comment concerning DOE's response to recommendation #13, the fact that all school buildings have fire alarm systems is irrelevant to our recommendation that school buildings not equipped with smoke detection systems at least be equipped with plug-in smoke detectors, *as recommended by the Fire Department.*

As also explained immediately above, if the plug-in detectors at 1 of the 16 school buildings in our sample were in fact carbon monoxide detectors, it was DOE itself that had "mistakenly understood" that they were smoke detectors. Although DOE now asserts that it does not have any plug-in smoke detectors in any of its school buildings, during the audit DSF informed us in an email that it was the custodian engineers' responsibility to check and, if necessary, replace any plug-in smoke detectors installed in DOE's school buildings.

We continue to recommend that DOE consider installing plug-in smoke detectors in those school buildings that are not equipped with smoke detection systems and that they be regularly inspected and tested.

15. DOE should prepare written procedures concerning the inspection and testing of plug-in smoke detectors, which should include the required frequency of such inspections and tests.

DOE Response: “The DOE disagrees with this recommendation. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.”

Auditor Comment: As noted in our comments concerning DOE’s responses to recommendations #13 and #14, the fact that all school buildings have fire alarm systems is irrelevant to our recommendation that school buildings not equipped with smoke detection systems at least be equipped with plug-in smoke detectors, *as recommended by the Fire Department.*

Accordingly, we continue to recommend that DOE consider installing plug-in smoke detectors in those school buildings that are not equipped with smoke detection systems, that they be regularly inspected and tested, and that DOE prepare written procedures concerning such inspections and tests.

16. DOE should modify the Fire and School Safety Log to include a section to document the testing of plug-in smoke detectors.

DOE Response: “The DOE disagrees with this recommendation. All of the items listed in this report as ‘plug-ins’ were mistakenly identified as smoke detectors when they are actually carbon monoxide detectors. We have no plug-in smoke detectors in any of our buildings. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.”

Auditor Comment: As noted in our comments concerning DOE’s responses to recommendations #13, #14, and #15, the fact that all school buildings have fire alarm systems is irrelevant to our recommendation that school buildings not equipped with smoke detection systems at least be equipped with plug-in smoke detectors, *as recommended by the Fire Department.*

As also explained immediately above, if the plug-in detectors at 1 of the 16 school buildings in our sample were in fact carbon monoxide detectors, it was DOE itself that had “mistakenly understood” that they were smoke detectors.

Accordingly, we continue to recommend that DOE consider installing plug-in smoke detectors in those school buildings that are not equipped with smoke detection systems, that plug-in smoke detectors be regularly inspected and tested, that DOE prepare written procedures concerning such inspections and

tests, and that the inspections of such detectors be documented in the Fire and School Safety Logs.

Weaknesses in DOE’s Monitoring of Automated External Defibrillators

To further enhance safety in public school buildings, New York State Education Law §917 mandates that school districts maintain AEDs on site in each school facility and arrange for staff volunteers to be trained and certified to use the AEDs when there is a sudden cardiac arrest incident. According to DOE officials, the agency endeavors to keep its AEDs up-to-date and properly stored for use. In addition, the Office of School Health’s *Automated External Defibrillator (AED) Program Checklist, Policies, and Procedures* require that the locations of the AEDs be posted by the main entrances of the school buildings.

The AED program is overseen by DOE’s Office of School Health and by school principals. To obtain assistance in meeting this responsibility, OSH contracts with Emergency Skills Inc., which provides a variety of AED program management and emergency response training services. However, as discussed below, DOE does not consistently ensure that its AEDs are up-to date or that they are stored in alarmed cabinets. DOE also does not consistently ensure that each school has the recommended number of certified AED responders and that the locations of the AEDs are posted by the main entrances of the school buildings.

AEDs Are Not Consistently Up-to-Date and Stored Properly in Alarmed Cabinets

According to DOE officials, the agency endeavors as a general practice to replace AEDs when they are no longer under warranty. The model currently being used by the schools has an eight-year warranty. However, based on the results of our observations and our reviews of AED documentation at the 16 sampled school buildings, we noted that 11 of the 16 school buildings had one or more of their AEDs still in use for longer than 8 years as of December 1, 2019.

According to DOE officials, the agency also endeavors to ensure that its AEDs are properly stored in alarmed cabinets for use to handle a sudden cardiac arrest incident. All of the 10 school buildings (and 1 temporary classroom unit) at which we tested whether AED cabinets were alarmed either had inoperable alarms (the batteries needed replacement) or did not have any AED cabinet alarms turned on.⁸

Failure to replace AEDs as their warranties expire increases the risk that an AED will not be in working condition when it is needed for a sudden cardiac arrest. Any failure to alarm the AED cabinets makes the AEDs, and accompanying supplies, susceptible to theft or misuse and increases the risk that an AED will not be available or in working condition when it is needed. The alarms are also important to notify school officials and AED responders of a possible sudden cardiac arrest incident.

⁸ For 6 of the 16 school buildings we visited (Grover Cleveland High School, Captain Manuel Rivera, Jr., main building and annex, P.S. 026 Rufus King, P.S. 029 Bardwell, and South Bronx Academy for Applied Media), we did not test whether the AED cabinets were alarmed because school officials did not want us to open the AED cabinets unless an authorized individual was available with a cabinet key to immediately turn off the alarm once it sounded, so as not to disrupt school operations. Therefore, we only tested whether alarms on AED cabinets were turned on for 10 of the 16 buildings.

Schools Were Not Consistently Staffed with the Recommended Number of Certified AED Responders

According to OSH's *Automated External Defibrillator (AED) Program Checklist, Policies, and Procedures*, DOE recommends that each school have, to the extent possible, at least six certified responders trained to use AEDs.

A total of 34 schools were housed in the 16 school buildings in our sample. Based on the results of our interviews and our reviews of AED documentation at the 16 buildings, however, we noted that 14 of the 34 schools lacked the 6 recommended AED responders and had a range of from 0 to 5 responders (with an average of 3 responders). At 4 of the remaining 20 schools, the certifications for one or more of the recommended 6 responders, which are valid for 2 years, had expired prior to our visit (at one school, the certifications had expired up to 108 days before our visit; at another school, the certifications had expired up to 276 days before our visit).

Any failure to have a sufficient number of certified AED responders at a school to ensure the presence of at least one certified responder to handle a sudden cardiac arrest increases the risk that even a functioning AED will be useless if no certified responder is present to use it.

AED Locations Are Not Posted by Main Entrances

According to OSH's *Automated External Defibrillator (AED) Program Checklist, Policies, and Procedures*, DOE must also ensure that the locations of the AEDs are posted by the main entrances of the school buildings. However, based on our observations at 15 school buildings, we noted that 7 of them did not post the locations of their AEDs at the main entrances, and 1 did not include the locations of all of the AEDs in the building.⁹ Compliance with this requirement is important so that AEDs can be located quickly if there is a sudden cardiac arrest incident in a school.

Other AED-related Matters

According to New York State Education Law §917; New York State Public Health Law §3000-b; New York State Codes, Rules, and Regulations §303.8; and OSH's *Automated External Defibrillator (AED) Program Checklist, Policies, and Procedures*, DOE must ensure that a school that has an incident involving the use of an AED in a medical emergency immediately reports the incident by phone to OSH and ESI, and records the incident in DOE's Online Occurrence Reporting System (OORS). However, for one school, an AED was used for a serious incident on December 17, 2019, three days before our visit, and while the school recorded the incident in OORS, it failed to notify both OSH and ESI. We informed OSH about the incident.

Failure for a school to notify OSH about medical emergencies in which an AED was used weakens the ability of OSH to effectively oversee DOE's AED program. For example, OSH, having been properly informed of the incident, could take steps to ensure that the AED is inspected by ESI after usage in order to collect medical data from the unit, determine whether the unit is still working properly, and replenish accompanying supplies.

⁹ For the first school building we visited (South Bronx Academy for Applied Media), we did not determine whether AED locations were posted at the main entrance. After this visit, we decided to include this observation in each of our visits to the remaining 15 school buildings.

On a related matter, it should be noted that ESI's August 8, 2019 and December 17, 2019 drill and inspection reports for the school building that had the serious incident on December 17, 2019 noted above,¹⁰ stated that the "spare battery" (a backup battery to be used if the main battery malfunctions) for the AED that was used in this serious incident needed to be replaced.

For another school building, ESI's December 2018, May 2019, and December 2019 inspection records indicated that an AED was "missing" and that a "police report" needed to be filed. There was no evidence in the inspection reports that a police report was ever filed or that the AED had been replaced.

Finally, according to Comptroller's Directive #1, §5.9, *Accurate and Timely Recording*, DOE must also ensure that it maintains accurate information on the school buildings that are equipped with AEDs. Based on our comparison of two DOE datasets—one that presented the population of DOE school buildings (DOE schools dataset) and the other that presented the population of school buildings that were equipped with AEDs (AED dataset), we found that the AED dataset was generally consistent with the DOE schools dataset. However, we did identify 31 school buildings that were in the DOE schools dataset that were not listed in the AED dataset. OSH informed us that these 31 school buildings were equipped with AEDs and would be added to the AED dataset. This is important so that DOE can ensure that all of its school buildings have been equipped with AEDs.

The weaknesses noted above indicate that OSH and school principals need to enhance their oversight of the AED program to better ensure that the schools can appropriately handle incidents of sudden cardiac arrest.

Recommendations

17. DOE should ensure that its Office of School Health and school principals enhance their oversight of the schools such that each school building is equipped with AEDs that are up-to-date and stored in alarmed cabinets.

DOE Response: "The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies."

All DOE AEDs included in this audit were under warranty and indemnification by Philips, the manufacturer. The FRx model, the model currently in use by the DOE, is a technologically advanced life-saving device designed for lay person rescuers with a built-in self-monitoring system that provides a warning if the device becomes defective or needs service. These AEDs are stored in the industry recommended cabinets with an alarm system. School personnel are advised to check units at least twice per day."

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE's claim that it has consistently followed these practices is contradicted by the audit findings. In addition, as noted above in the *Discussion of Audit Results with DOE*, while the AED model currently being used by the schools has an eight-year warranty, based on the results of our observations and our reviews of AED documentation, a total of 45 AEDs in 11 of the 16 school buildings in our sample had been in use for longer than 8 years and

¹⁰ The serious incident occurred just prior to ESI's visit to the school on December 17, 2019.

were out of warranty as of December 1, 2019. We therefore urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

18. DOE should ensure that its Office of School Health and school principals enhance their oversight such that each school within a school building has, to the extent possible, at least six certified AED responders.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed this practice is contradicted by the audit finding. We therefore urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

19. DOE should ensure that its Office of School Health and school principals enhance their oversight such that AED locations are consistently posted at the main entrances of all school buildings.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed this practice is contradicted by the audit finding. Therefore, we urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

20. DOE should ensure that its school principals consistently notify the Office of School Health and Emergency Skills Inc. immediately after an AED has been used.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed this practice is contradicted by the audit finding. Therefore, we urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

21. DOE should ensure that it responds to recommendations that Emergency Skills Inc. provides in its drill and inspection reports.

DOE Response: “The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.”

Auditor Comment: While we are pleased that DOE agrees with this recommendation, we note that DOE’s claim that it has consistently followed this practice is contradicted by the audit finding. Therefore, we urge DOE to ensure that this recommendation is implemented and followed on a consistent basis.

Other Matters

As noted in the Scope and Methodology Statement, this audit focused on the presence, functionality, and testing of the following life safety equipment in 16 sampled DOE school buildings: interior fire alarm pull stations, fire extinguishers, sprinkler systems, standpipe systems, lighted exit signs, emergency lights, elevator and holding room intercoms, carbon monoxide detectors, and smoke detectors. This audit also focused on the presence and inspections of AEDs, the availability of AED certified responders, the responders' readiness to use AEDs, and other aspects of DOE's AED program at the 16 sampled school buildings.

To the extent that we noted other concerns outside the scope of this audit while conducting our observations at the 16 school buildings we visited or while performing our reviews of the Fire and School Safety Logs at these school buildings, we sent emails to the school buildings' custodian engineers and to DOE's Office of the Auditor General to notify them in detail about these concerns, to ask them to take whatever steps were necessary to address them, and to ask them to inform us what steps were taken.

The concerns we referred to relevant DOE staff and managers included the following:

- clutter in the corridors blocking means of egress (11 buildings);
- clutter in other locations blocking access to interior fire alarm pull stations or fire extinguishers, blocking the visibility of strobe lights, or blocking the light provided by emergency lights (4 buildings and 2 of the 14 temporary classroom units);
- corridor fire doors that should have been kept closed (five buildings);
- missing corridor fire doors (one building); and
- functioning interior fire alarm pull stations, strobe lights, lighted exit signs, and emergency lights that nonetheless needed minor repairs, such as missing or broken interior fire alarm pull station covers (12 buildings).

These concerns also included certain omissions (such as signatures, initials, or Certificate of Fitness numbers)¹¹ in the test records, and certain inaccuracies (e.g., incorrect equipment identification numbers, descriptions, and locations) and omissions of items in the inventory records of the Fire and School Safety Logs at some school buildings.

¹¹ Individuals conducting life safety equipment inspections and tests should sign or initial the test records and, if applicable, provide their Certificate of Fitness numbers. If neither signatures/initials nor Certificate of Fitness numbers were provided on the records for particular tests, we questioned whether the tests were even performed and, therefore, cited these instances in the main body of this report as tests not performed. However, if either signatures/initials or Certificate of Fitness numbers, but not both, were provided on the records for particular tests, we accepted that these tests were performed and, therefore, did not cite these instances in the main body of this report. Rather, we noted them in this "Other Matters" section and provided detailed information on these records to DOE via email for whatever action DOE deemed necessary.

DETAILED SCOPE AND METHODOLOGY

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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the City Charter.

The scope of this audit covered the period from September 1, 2018 through March 13, 2020. This audit focused on the presence, functionality, and testing of the following life safety equipment in DOE school buildings: (1) interior fire alarm pull stations; (2) fire extinguishers; (3) sprinkler systems; (4) standpipe systems; (5) lighted exit signs; (6) emergency lights' individual battery boxes; (7) elevator intercoms; (8) holding room intercoms; (9) carbon monoxide detectors; and (10) smoke detectors. This audit also focused on the presence and inspections of AEDs, the availability of AED certified responders, the responders' readiness to use AEDs at the DOE school buildings, and other aspects of DOE's AED program at the 16 sampled school buildings.

To obtain an understanding of the responsibilities and regulations governing DOE's monitoring of the availability and functionality of required life safety equipment in its schools, we reviewed and used the following documents as our audit criteria:

- Title 29 of the New York City Administrative Code, Chapter 1 (Enactment of the New York City Fire Code) and Chapter 2 (2014 New York City Fire Code);
- Title 3 of the Rules of the City of New York, Chapter 9 (Fire Protection Systems) and Chapter 10 (Means of Egress);
- Title 27, Chapter 1 (1968 City Building Code) of the City Administrative Code, Subchapters 6 (Means of Egress), 8 (Places of Assembly), and 17 (Fire Alarm, Detection, and Extinguishing Equipment);
- Title 28, Chapter 7 (2014 City Building Code) of the City Administrative Code, Subchapters 9 (Fire Protection Systems) and 10 (Means of Egress); and
- National Fire Protection Association (NFPA) Codes & Standards, Standard 72 (National Fire Alarm and Signaling Code).

To obtain an understanding of the responsibilities and regulations governing DOE's monitoring of its AED program, we reviewed and used the following documents as our audit criteria:

- New York State Public Health Law §3000-b;
- New York State Education Law §917;
- Title 24, Chapter 24, of the Rules of the City of New York;
- New York State Codes, Rules, and Regulations §303.8; and
- OSH's *Automated External Defibrillator (AED) Program Checklist, Policies, and Procedures*.

We also reviewed various documents obtained from the DOE website, including two PowerPoint presentations entitled *Overview: Division of School Facilities* and *Automated External Defibrillator (AED) Program*. In addition, we reviewed various documents from the City Fire Department

website pertaining to the certificates needed to inspect and test certain life safety equipment, including the S-95 Certificate of Fitness for Supervision of Fire Alarm Systems and Other Related Systems, the S-12 Certificate of Fitness for Sprinkler Systems, and the S-13 Certificate of Fitness for Standpipe Systems.

To familiarize ourselves with the custodian engineers' responsibilities in the school buildings, we reviewed various documents, including the *Notice of Examination: Custodian Engineer (Board of Education) Exam No. 9013*, the *Title Specifications for the Board of Education Custodian Engineer position (Title Code No. 91633)*, and the *Rules and Regulations for the Custodial Force in the Public Schools of the City of New York*. We also reviewed guides used by DSF's Deputy Directors to perform their building observations and their reviews of the Fire and School Safety Logs in their assigned school buildings, as well as the Fire Safety Checklists and Fire Safety Log Checklists that the Deputy Directors are required to complete on a semi-annual basis for each assigned school building.

To gain a general understanding of DSF's responsibilities and the controls in place for monitoring the availability and functionality of the life safety equipment in school buildings, we interviewed DSF's Chief Executive Officer, Director of Field Operations, Director of Maintenance & Optimization, Bronx Field Director, Queens North Field Director, Brooklyn North Field Director, and Deputy Director of Facilities for Districts 8 & 11 (the Bronx). In addition, we interviewed OSH's Chief Executive Officer and the Director of OSH's Office of Health Services to gain an understanding of their responsibilities for monitoring AEDs in the school buildings.

On October 21, 2019, we received a dataset from DOE that presented the population of DOE school buildings (DOE schools dataset). We conducted various data reliability tests of this dataset of 2,070 DOE schools (located in 1,531 buildings) to check for questionable entries, including duplicates, gaps in building codes, blank fields, and clearly anomalous information. We determined that the DOE schools dataset was sufficiently reliable for audit testing purposes.

We used the DOE schools dataset to randomly select a sample of schools for detailed testing. Due to the fact that on August 13, 2019, the State Comptroller's Office had started an audit of the health, safety, and accessibility conditions in DOE's District 75, we excluded the 94 schools in this district from the population of 2,070 schools, resulting in a total of 1,976 schools.¹² We then selected a sample of 16 schools based on the following four strata (ensuring that each of the five boroughs were included within two or more strata): (1) 5 of the 795 elementary schools (grades K through 5); (2) 4 of the 276 middle schools (grades 6 through 8); (3) 5 of the 465 high schools (grades 9 through 12); and (4) 2 of the 440 schools other than elementary, middle, or high schools (e.g., schools with grades K through 8 or K through 12). Of the 16 schools, 4 were in Brooklyn, 3 in the Bronx, 3 in Manhattan, 3 in Staten Island, and 3 in Queens. However, as a result of the March 20, 2020 New York State Executive Order restricting non-essential activities in the State due to the COVID-19 emergency, we were not able to visit the 16th school in our sample, a high school in Queens.

Over the course of a three-month period (December 6, 2019, through March 13, 2020), we visited 15 of the sampled schools and interviewed each custodian engineer assigned to the school building. During the visits, we checked for the presence and operability (if feasible) of life safety equipment and AEDs in a total of 16 buildings (1 of the 15 schools had a main building and an

¹² DOE's District 75 schools provide highly specialized instructional support for students with developmental challenges, such as autism spectrum disorders, cognitive delays, and sensory impairments.

annex building) and in a total of 34 associated schools (the 15 schools shared space with 19 other schools), and took photographs of the life safety equipment and AEDs we observed. We performed the same tests of the life safety equipment and AEDs in 14 temporary classroom units located on the grounds of 2 of the 16 buildings. Our school building observations included areas such as hallways; stairways; public assemblies, like gyms, auditoriums, and cafeterias; and holding rooms.¹³ (A listing of the 16 school buildings and the associated addresses, grades served, and dates of our visits, is provided in Appendix I to this report.)

Based on our observations at the 16 school buildings, and our reviews of the Fire and School Safety Logs for the period of September 1, 2018, through December 31, 2019, we performed: (1) an analysis of our life safety equipment observations (to determine whether there was an adequate number of required items and whether the equipment was functioning properly); (2) an analysis of life safety certifications (to determine whether individuals who tested and inspected the interior fire alarm pull stations, sprinkler systems, and standpipe systems, based on the Logs, had valid S-95, S-12, and S-13 Certificates of Fitness, respectively); (3) an analysis of fire extinguisher inspection tags (to determine whether the required monthly inspections were conducted); (4) a review of the tests of the interior fire alarm pull stations, based on the Logs (to determine whether each day a different pull station was tested and whether all interior fire alarm pull stations were tested monthly as required); (5) a review of the fire safety compliance inspections (to determine whether these required inspections were conducted daily); and (6) a review of the inspections and tests of the sprinkler and standpipe systems, elevator and holding room intercoms, carbon monoxide detectors, and emergency lights, based on the Logs (to determine whether the required monthly inspections and tests were conducted).

After each visit to the 16 school buildings, we sent emails to the custodian engineers, DSF, and the Office of the Auditor General: (1) seeking clarity on questionable Fire and School Safety Log records; (2) notifying them in detail about any concerns we identified relative to our school building observations and Log reviews; and (3) asking them to take appropriate steps to address our concerns. We reviewed the responses received and modified our analyses where applicable.

For 13 of the 16 school buildings equipped with smoke detection systems, we reviewed DOE's records of its contractor's smoke detection system inspections and tests covering the period September 1, 2018 through March 13, 2020. We determined whether these inspections and tests were performed semi-annually and annually, respectively, as required. In addition, for these 13 buildings, during our visits, we checked whether the smoke detectors were obstructed in such a way that they would not work properly. Finally, for the three buildings without smoke detection systems, we checked whether they had plug-in smoke detectors as an alternative. We also reviewed the Fire and School Safety Logs for the period September 1, 2018 through December

¹³ For the initial 4 of the 16 school buildings we visited (South Bronx Academy for Applied Media, P.S. 095 The Gravesend, The Locke School of Arts & Engineering, and Grover Cleveland High School), while we checked for the presence of emergency lights in all of the hallways, we did not check the lights in some or all of the stairways. After we conducted the initial 4 building visits, we decided to observe the emergency lights in all of the stairways of the remaining 12 school buildings we visited. For 4 of 16 school buildings (South Bronx Academy for Applied Media, CSI High School for International Studies, Captain Manuel Rivera, Jr., main building and annex), while we observed emergency lights in the school buildings, we did not test the emergency lights. We did not endeavor to test the emergency lights at the first school building we visited. After we conducted the first school building visit, we decided to endeavor to test at least some of the emergency lights in the remaining 15 school buildings we visited. For 3 of the remaining 15 buildings, because the emergency lights were connected to emergency generators, the power would have needed to have been shut off in order for us to test the lights. Therefore, we tested some or all of the emergency lights in 12 of the 16 school buildings we visited.

31, 2019, to determine whether the plug-in smoke detectors present in school buildings were regularly tested.

Finally, for each of the 16 school buildings, we requested the DSF Deputy Directors' Fire Safety Checklists and Fire Safety Log Checklists for Calendar Year 2019. We reviewed the checklists provided to determine whether DSF's Deputy Directors had completed them twice per calendar year, as required.

On September 27, 2019, we received an AED dataset from DOE that presented the population of school buildings that were equipped with AEDs (which collectively had a total of 5,025 AEDs) and the number of AEDs that were available in each building. We conducted the same data reliability tests on this dataset that we did for the DOE schools dataset discussed above. We determined that the AED dataset was also sufficiently reliable for audit testing purposes. We then compared the DOE schools dataset and the AED dataset to determine whether all school buildings had AEDs. We used Comptroller's Directive #1, §5.9, *Accurate and Timely Recording*, to help us determine whether DOE maintained accurate information on the school buildings that are equipped with AEDs.

Based on our observations at the 16 school buildings we visited and our reviews of Emergency Skills, Inc.'s AED documentation for the period September 1, 2018, through March 13, 2020, we determined: (1) the frequency of AED unannounced drills, which must be performed twice per school year at each building; (2) whether AED inspections were performed and adequately documented during the unannounced visits; (3) whether there were sufficient AED certified responders within each school in a building to operate the AEDs (at least six certified responders are recommended per school); (4) whether AEDs had been replaced within the warranty period of eight years; (5) whether alarms on AED cabinets were turned on to prevent theft or misuse; (6) whether a list of AED locations was noticeably posted at each school building's main entrance; (7) whether the AEDs we observed during our visits were recorded on the AED dataset; (8) whether certain information (e.g., the AED serial number and location) recorded on the AED dataset for each building was consistent with our observations and with the AED documentation we reviewed; and (9) whether any AED incidents at the 16 buildings were promptly reported by phone to OSH and Emergency Skills, Inc. and recorded in DOE's Online Occurrence Reporting System, as required.

Although the results of our sampling tests were not projectable to their respective populations, these results, together with the results of our other audit procedures and tests, provide a reasonable basis for us to evaluate and to support our findings and conclusions about the effectiveness of DOE's monitoring of the availability and functionality of certain life safety equipment and of the AEDs in its schools.

APPENDIX I

List of 16 Sampled School Buildings Housing 34 Schools
Visited between December 6, 2019 and March 13, 2020

	Name of School Building	Address of School Building	Borough of School Building	# of Schools Sharing Space in the Building	# of Temporary Classroom Units Located on the School Building's Grounds	Grades Served in the School Building	Date of Auditors' Visit to School Building
1	South Bronx Academy for Applied Media	778 Forest Avenue	Bronx	4	None	K to 12	12/06/2019
2	P.S. 095 The Gravesend	345 Van Sicklen Street	Brooklyn	1	6	K to 8	12/12/2019
3	The Locke School of Arts and Engineering	20 West 112th Street/21 West 111th Street	Manhattan	3	None	K to 5	12/18/2019
4	Grover Cleveland High School	21-27 Himrod Street	Queens	2	None	9 to 12	12/20/2019
5	CSI High School for International Studies	100 Essex Drive	Staten Island	4	None	6 to 12	01/30/2020
6	P.S. 279 Captain Manuel Rivera, Jr. (Main Building)	2100 Walton Avenue	Bronx	1	None	1 to 8	02/05/2020
7	P.S. 279 Captain Manuel Rivera, Jr. (Annex)	2240 Walton Avenue	Bronx	Refer to Main Building	None	K	02/05/2020
8	P.S. 026 Rufus King	195-02 69th Avenue	Queens	1	None	K to 5	02/07/2020
9	P.S. 029 Bardwell	1581 Victory Boulevard	Staten Island	1	None	K to 5	02/11/2020
10	M.S. K266 - Park Place Community Middle School	62 Park Place	Brooklyn	2	None	K to 12	02/13/2020
11	The Urban Assembly School for Green Careers	145 West 84th Street	Manhattan	5	None	K to 12	02/20/2020
12	P.S. 198 Brooklyn	4105 Farragut Road	Brooklyn	1	None	K to 5	02/26/2020
13	P.S. 087 Bronx	1935 Bussing Avenue	Bronx	1	8	K to 5	02/28/2020
14	I.S. 024 Myra S. Barnes	750 Durant Avenue	Staten Island	2	None	6 to 8	03/04/2020
15	Brooklyn Community Arts & Media High School	300 Willoughby Avenue	Brooklyn	3	None	9 to 12	03/06/2020
16	Community Action School – M.S. 258	154 West 93rd Street	Manhattan	3	None	K to 8	03/13/2020

June 22, 2021

Marjorie Landa
Deputy Comptroller for Audit
The City of New York
Office of the Comptroller
One Centre Street
New York, NY 10007-2341

**RE: Audit Report on Certain Life Safety Equipment
and on the Automated External Defibrillators in
Department of Education Schools – ME20-067A**

Dear Ms. Landa:

This letter will serve as the New York City Department of Education's (DOE) formal response to the New York City Office of the Comptroller's (Comptroller) draft audit report on Certain Life Safety Equipment and on the Automated External Defibrillators in Department of Education Schools (Report).

While the DOE agrees with most of the recommendations provided in the report, we disagree with the finding that Automated External Defibrillators (AEDs) are not consistently up-to-date. After the auditors shared their findings, the DOE provided requested warranty and extended warranty documentation, which proved the AEDs included in the audit were under warranty. The DOE also advised that the AED manufacturer Philips does not specify a lifespan for the Philips HeartStart FRx defibrillator (FRx). Their regulatory affairs unit states, "When properly handled, stored, and maintained, the Philips HeartStart FRx defibrillator may safely remain in service. Please note that some accessories have a finite shelf life and must be replaced on a periodic basis. The device has built in features that can assist in determining the device's continued readiness, along with regular user inspection, per the provided instructions." While the DOE, as a general practice, seeks to replace AEDs when they are out of warranty, it is inaccurate to state that failure to replace AEDs as their warranties expire increases the risk that an AED will not be in working condition. The DOE's AED vendor, Emergency Skills, conducts biannual drills and inspections to ensure AEDs are in working order. Each school has a designated AED contact who can report any issues with a school's AED(s) to the Office of Health Services. AEDs are promptly replaced if it is determined they are not in working condition.

Response to Recommendations:

Recommendation 1. *DOE should ensure that its Division of School Facilities enhances its oversight of school facilities and custodian engineers such that each school building is equipped with all of the required life safety equipment, that this equipment is functional, and that this equipment is inspected and tested regularly by qualified personnel.*

Response: The DOE agrees with this recommendation. Checklists used to generate ratings for custodian engineers, which cover the items contained in this report and are biannually reviewed, are now maintained centrally. The DOE is also re-examining an electronic format to make this process more efficient and records management more streamlined.

Recommendation 2. *DOE should ensure that daily fire safety compliance inspections are regularly completed and that the results are consistently recorded.*

Response: The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Recommendation 3. *DOE should ensure that there are not multiple versions of a monthly test record at a school building that present conflicting information about the equipment tests performed during a given month.*

Response: The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Recommendation 4. *DOE should ensure that equipment identification numbers are affixed on or near all fire extinguisher stations.*

Response: The DOE disagrees with this recommendation. Fire extinguishers are numerically identified in building plans. Different engineers may have used different numbering systems over the years. Enforcing a new system of identification would be inefficient. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 5. *DOE should consider affixing equipment identification numbers on or near the interior fire alarm pull stations and emergency lights' individual battery boxes in its school buildings.*

Response: The DOE disagrees with this recommendation. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 6. *DOE should modify the Fire and School Safety Log to include a section on the inspection of lighted exit signs.*

Response: The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a new section on lighted exit signs.

Recommendation 7. *DOE should modify the Fire and School Safety Log to more clearly show the results of the inspections and tests of a school building's life safety equipment.*

Response: The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a new section for all deficiencies found throughout the year. This section will also include a place for logging the resolution to the identified deficiency.

Recommendation 8. *DOE should modify the Fire and School Safety Log to include the dates that the tests of the interior fire alarm pull stations are performed.*

Response: The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include a date column for interior fire alarm pull stations.

Recommendation 9. *DOE should modify the Fire and School Safety Log to include a section to document the locations of the hoses, hose connections, and valves for the standpipe system.*

Response: The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include an informational page which has these locations.

Recommendation 10. *DOE should modify the Fire and School Safety Log to more clearly show the location of a school building's secondary sprinkler valve.*

Response: The DOE agrees with this recommendation. We will amend logbooks for the next years' printing to include an informational page which has these locations.

Recommendation 11. *DOE should address, if it has not already done so, any issues concerning the availability and functionality of required life safety equipment identified in this report on the 16 school buildings we visited.*

Response: The DOE agrees with this recommendation. Although the specific life safety equipment was not identified in this report, nor in any of the subsequent findings documents that were given after the preliminary and draft report were issued, the field teams and custodian engineers went through the schools visited by the auditors to identify deficiencies in the categories of life safety equipment identified in the report. All items have been addressed and corrective action has either already been completed or is currently in progress.

Recommendation 12. *DOE should ensure that the Division of School Facilities enhances its oversight of the contractor responsible for inspecting and testing school buildings' smoke detection systems such that these systems are inspected and tested regularly.*

Response: The DOE agrees with this recommendation. The DOE has created a facilities compliance division separate from the facilities field teams and custodian engineers to ensure enhanced oversight.

Recommendation 13. *DOE should ensure that the Division of School Facilities and school principals enhance their oversight such that those school buildings that are not equipped with smoke detection systems are at least equipped with plug-in smoke detectors.*

Response: The DOE disagrees with this recommendation. All buildings have fire alarm systems. The items listed in this report as “plug-ins” were mistakenly understood to be smoke detectors, but they are carbon monoxide detectors. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 14. *DOE should ensure that the Division of School Facilities enhances its oversight of the custodian engineers such that the plug-in smoke detectors in school buildings so equipped are inspected and tested regularly.*

Response: The DOE disagrees with this recommendation. All buildings have fire alarm systems. All of the items listed in this report as “plug-ins” were mistakenly identified as smoke detectors, when they are actually carbon monoxide detectors. All of the items listed in this report as “plug-ins” were mistakenly identified as smoke detectors when they are actually carbon monoxide detectors. We have no plug-in smoke detectors in any of our buildings. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 15. *DOE should prepare written procedures concerning the inspection and testing of plug-in smoke detectors, which should include the required frequency of such inspections and tests.*

Response: The DOE disagrees with this recommendation. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 16. *DOE should modify the Fire and School Safety Log to include a section to document the testing of plug-in smoke detectors.*

Response: The DOE disagrees with this recommendation. All of the items listed in this report as “plug-ins” were mistakenly identified as smoke detectors when they are actually carbon monoxide detectors. We have no plug-in smoke detectors in any of our buildings. We have fire alarms in our buildings that adhere to the rules of the fire code. It is the longstanding policy of the DOE to adhere to all applicable laws, and any rules promulgated by the Fire Department applicable to DOE buildings.

Recommendation 17. *DOE should ensure that its Office of School Health and school principals enhance their oversight of the schools such that each school building is equipped with AEDs that are up-to-date and stored in alarmed cabinets.*

Response. The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

All DOE AEDs included in this audit were under warranty and indemnification by Philips, the manufacturer. The FRx model, the model currently in use by the DOE, is a technologically advanced life-saving device designed for lay person rescuers with a built-in self-monitoring system that provides a warning if the device becomes defective or needs service. These AEDs are stored in the industry recommended cabinets with an alarm system. School personnel are advised to check units at least twice per day.

Recommendation 18. *DOE should ensure that its Office of School Health and school principals enhance their oversight such that each school within a school building has, to the extent possible, at least six certified AED responders.*

Response. The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Recommendation 19. *DOE should ensure that its Office of School Health and school principals enhance their oversight such that AED locations are consistently posted at the main entrances of all school buildings.*

Response. The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Recommendation 20. *DOE should ensure that its school principals consistently notify the Office of School Health and Emergency Skills Inc. immediately after an AED has been used.*

Response. The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Recommendation 21. *DOE should ensure that it responds to recommendations that Emergency Skills Inc. provides in its drill and inspection reports.*

Response. The DOE agrees with this recommendation, which is consistent with its practices and longstanding policies.

Sincerely,



Kevin Moran
Chief School Operations Officer