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I. PURPOSE

This procedure is designed to protect personnel working on roofs and equipment on roofs from exposure to dangerous noise levels as the result of the Outdoor Warning System (OWS) or county civil defense siren (CDS).

II. SCOPE AND APPLICATION

This procedure shall be followed by EMU employees and contracted employees for work conducted on the roofs of the following buildings:

Outdoor Warning Systems

Convocation Center

Goddard

Halle

King

Phelps

Sculpture Studio/Central Stores**

Student Center

Civil Defense Sirens

Mark Jefferson*

Owen College of Business*

*These buildings have civil defense sirens operated by Washtenaw County. Guidelines for these two buildings differ slightly from the OWS sirens.

**These buildings do not have the OWS on them; however, a pole siren is mounted near these buildings. Precautions should be taken when on these roofs as stated in the guidelines.

III. RESPONSIBILITIES

A. Physical Plant

1. Physical Plant is responsible for the inspection, testing and maintenance of the OWS on an annual basis per NFPA-72.
2. Physical Plant is responsible that proper signage is placed on all roof entrances containing an OWS and/or CDS.
3. Foremen and Project Managers shall comply with the notification and project coordination requirements of these procedures.
4. The Key office employee shall ensure that all outside contractors have read and sign the required safety form, EMUDPS-EHS-f016 Outdoor Warning System Roof Entry, and have the required hearing protection with a Noise Reduction Rating (NRR) of at least 30 dB, before receiving the key for locking out the system and roof entry. The Key office shall maintain the original copies of the signed EMUDPS-EHS-f016 forms.
5. Foremen and Project Managers shall enforce compliance with these procedures.

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6. Foremen and Project Managers shall notify employees when they will be working on a roof with the OWS and/or CDS.
7. Foremen and Project Managers shall ensure the proper personal protective hearing equipment with a Noise Reduction Rating (NRR) of at least 30 dB and fall protection, as needed, are provided, and assure maintenance is being performed.
8. Foremen and Project Managers shall promptly investigate and report to Risk Management and Environmental Health and Safety (EHS) all accidents.
9. Foremen and Project Managers shall enforce both lockout/tagout and fall protection requirements.

B. Employees and Contracted Employees

1. Employees shall comply with these procedures.
2. Employees shall wear and maintain the necessary personal protective equipment.
3. Employees shall comply with lockout/tagout and, as needed, fall protection requirements.
4. Employees shall consult with their Foreman, Project Manager and/or Environmental Health and Safety personnel whenever there are questions regarding health and safety issues.
5. Employees shall report any job related injuries, illnesses, accidents and/or near misses to their supervisor.

C. Department of Public Safety (DPS)

1. DPS shall record all OWS shut downs and reinstatements on the alarm log.
2. DPS-Emergency Management (EM) shall coordinate the testing of the OWS with University Communications, Dispatch and Physical Plant, who is to assure that no one is on the roofs during testing.
3. DPS-Emergency Management (EM) shall notify Washtenaw County Emergency Management and record on EMUDPS-EHS-f020 Civil Defense Siren Shutdown Log whenever the CDS is locked out.
4. DPS-EHS shall ensure that proper signage is placed on all roof entrances containing an OWS and/or CDS upon notification by the Physical Plant.
5. DPS-EHS shall update this procedure and periodically assess compliance with the procedure.

IV. PROCEDURES

A. Installation Safety Precautions

1. A lock-out system shall be installed on each OWS unit and the key to it and the roof accesses shall be keyed off the same master key. Each building key shall be unique.
2. The locations of the OWS lock-out are as follows:
 - a) Convocation Center- Inside the northeast control room.

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- b) Goddard- 4th Floor northeast end of hallway, just north of the elevator, inside janitorial room where the roof access ladder is located.
 - c) Halle- In penthouse, just south of the freight elevator.
 - d) King- 4th Floor southwest hallway. Inside the custodial closet directly across from the elevator.
 - e) Phelps- 4th Floor 2 doors west of elevator, inside room marked “Custodial room”.
 - f) Student Center- Inside large mechanical room, located on east wall, farthest away from the entrance door into the mechanical room.
3. The OWS lock-out system box looks like the following:



4. Signage shall be posted on roof accesses indicating the hazard and basic procedures, and looks like the following:



- 5. The roof key shall be tagged to identify the building has a OWS and/or CDS.
- 6. CDS lockouts are located in the following areas:
 - a) Mark Jefferson: On the east wall opposite the elevator in the penthouse.
 - b) Owen College of Business: In the 5th Floor mechanical room.

B. Warning System Testing

- 1. Testing of the OWS shall be periodically conducted at least semi-annually at 12:30 p.m. **No roof work is allowed on these buildings from 12:00 – 1:00 p.m. on those testing days.**

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2. Testing of the CDS is conducted the first Saturday of each month from March to September at noon. **No roof work is allowed on these buildings from 11:45 a.m. until 12:30 p.m. on those days.**
3. After verification is made that no one is on a roof containing an OWS then the system is tested by using the procedure provided by the manufacturer.

C. OWS & CDS Roof Work Process

1. The employee obtains the key from the Key office.
NOTE: WEMU will obtain a key from the General Manager.
2. Contractors, vendors and/or employees notify DPS that the OWS system is being taken out of service. The Key office employee will notify DPS when a contractor, vendor and/or employee obtain and return the key for the OWS. The Key office employee will notify Emergency Management that the CDS system has been locked out and the approximate length of time that the CDS will be locked out.
3. The employee locks out the OWS or CDS following the EMU Lockout/Tagout procedure. **NOTE:** Lockout locations can be identified in Step IV. A. 2 and 6.
4. The employee inspects then puts on the proper hearing and, as needed, fall protection, unlocks the roof access lock then enters the roof.
5. The employee can now start performing the identified work.
6. Upon completion of the work, the employee exits the roof, ensures the roof access is locked, removes the hearing and fall protection, unlocks the OWS or CDS, and then notifies DPS that the OWS has been reinstated.
NOTE: If work is to take longer that initially specified on the roof containing a CDS then Emergency Management is to be notified.
7. During severe weather, work cannot be conducted on the roofs of buildings with the severe weather sirens. If the weather becomes threatening during work on these roofs, the work must be suspended until the threat passes.

D. Hearing and Fall Protection Inspection and Maintenance

1. All hearing protection shall be inspected prior to use.
 - a. Check for the following items:
 - i. Sealing rings for cracks, tears, wear and cleanliness.
 - ii. Outer shell for cracks.
 - iii. Headband provides constant and even pressure.
 - b. If there is evidence of any of the above, do not use and obtain a new pair.
2. Fall protection shall be inspected prior to use.
 - a. Check for the following:
 - i. Cuts, frayed edges, broken fibers, or burns on the webbing.
 - ii. D-rings for cracks, breaks, rough or sharp edges, and the ability to pivot.
 - iii. Buckles for straightness, distortion and cleanliness.
 - b. If there is evidence of any of the above, do not use and obtain a new one.
3. After using the hearing protection it shall be cleaned using sanitary wipes.

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4. When not in use hearing and fall protection shall be stored in approved storage containers.
5. Maintenance shall be performed according to manufacturer's instructions.

V. REFERENCES

- A. Outdoor Warning System Testing Procedure
- B. EMU Lockout/Tagout Procedure
- C. EMUDPS-EHS-f016 Outdoor Warning System Roof Entry
- D. EMUDPS-EHS-f020 Civil Defense Siren Shutdown Log

VI. APPROVALS

Bilal Sarsour, Director, Facilities and Maintenance Date

Scott Storrar, Director, Facilities Planning & Construction Date

Greg O'Dell, Chief, Department of Public Safety Date

Mark Wesley, Director, Emergency Management Date

Kathryn Wilhoff, Director, Environmental Health and Safety Date

Mary Motherwell, General Manager, WEMU Date

VII. HISTORY

Rev	Change(s)
0	Initial release
1	In Section III, A : added Steps 1 & 2; removed Step 5; modified Step 4 to reference Key office; modified Step 6, which is now Step 7, regarding maintenance; In Section IV, A. Step 6; identified Mark Jefferson CDS shutoff location: C: combined Section C & D; changed Key Desk to Key office; added NOTE regarding WEMU to Step 1; Step 2 added that contractors and vendors will notify DPS along with the Key desk employee; Step 6 added NOTE. In Section VI added Scott Storrar signature and change Art Timko to Mary Motherwell for WEMU.