

## EGLIN AFB FIRE ALARM AND SUPPRESSION SPECIFIC REQUIREMENTS FOR NEW INSTALATION

### 1.0 FIRE ALARM / SUPPRESSION SYSTEMS

#### 1.1 Electronic Fire Alarm and Suppression Section

1.1.1 The 796CEOFA section of Civil Engineers are technical support to the Authority Having Jurisdiction (AHJ) only. They are here to review, inspect, observe tests, and will not take part in the execution of any section of an awarded project on this installation (Examples; disable, safe, or shut down a complete system or a part of one; bring systems back online, etc.).

#### 1.2 Fire Alarm Transceivers

1.2.1 All Fire Alarm transceivers shall be standalone units (BT-XFs) and completely compatible with the existing Monaco Enterprises Model D-21-M central station system.

1.2.2 Transceivers shall have the appropriate number of zones to interface with the Fire Alarm Control Unit and transmit by device type/floor. The authority having jurisdiction shall approve the fire alarm zones. Transceivers shall operate on a frequency of 141.3625 MHZ. Transceivers shall not be mounted higher than 60 inches from floor level.

1.2.2.1 Monaco Audio Board and Relay Board (BT-XMs) are not required and shall not be installed.

1.2.3 Before any Technician will program the fire alarm transceiver for any project, the Electronic/Alarm Section require the following items to be in their possession:

1.2.3.1 QFPE stamped shop drawings.

1.2.3.2 Copy of megger test results.

1.2.4 The installer is responsible to determine the proper location and type of antenna to be utilized:

1.2.4.1 When it is determined that the use of a directional (YAGI) antenna is required it shall be mounted on 1-inch heavy wall galvanized rigid conduit, utilizing positive means to prevent the antenna and/or mast from twisting by wind.

1.2.4.2 In cases where it is determined that an “Omni” antenna will be sufficient, the antenna may be mounted on ¾ inch rigid electrical conduit or a mast of proved equal strength.

1.2.5 The installer shall demonstrate the forward and the reflected power of installed antenna systems prior to acceptance in accordance with manufacturer’s specifications.

#### 1.3 Fire Alarm and Mass Notification Systems

1.3.1 Batteries shall not be larger than 55 amp-hour. If a larger capacity is figured, parallel sets of batteries, 55 A/H and smaller together. The handling of larger batteries has produced an inherent safety hazard.

1.3.2 All batteries shall be labeled with the date of installation.

1.3.3 All notification appliance circuits (NAC) shall be Class A.

1.3.4 IAW UFC 4-021-01, 4-3.4.2.2 textual signs are optional and at the discretion of the DOD installation for Army and Air Force installations. Textual signs shall not be installed on Eglin AFB.

1.3.4.1 USACE ECB 2018-17 shall be applied on USACE projects. Fixed textual signs displaying “evacuate/announcement” shall be used.

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### 2.0 CONSTRUCTION

#### 2.1 General Requirements

- 2.1.1 Before any work is conducted in an existing facility that might affect the fire alarm, mass notification, or fire suppression systems, either directly or indirectly, a test of the existing systems shall be conducted by qualified persons IAW UFC 3-601-02 and witnessed by personal from 796 CEOFA. All paperwork must be submitted for review and record.
- 2.1.2 Ceiling Tile Bridge Plates should be installed instead of T-Bar Hangers for mounting equipment in ceiling tiles (detectors, NAC's, speakers, etc.).
- 2.1.3 Alarm valves shall be installed in a dedicated riser room or unoccupied area, be readily accessible, and located 30" – 60" above the finished floor.
- 2.1.4 Sprinkler system piping shall be Schedule 40 black iron steel.
- 2.1.5 Concrete splash blocks large enough to prevent ground erosion shall be placed to displace discharge from all inspector's test, auxiliary drains, and main drain outlets.
- 2.1.6 Hydraulic gongs and alarm check valves shall be installed on all sprinkler systems.
- 2.1.7 All mechanical joints shall be tightened with a calibrated torque wrench to manufacture's specifications.
- 2.1.8 All-thread shall not be used in floor-based pipe stands
- 2.1.9 A general information sign encompassing applicable current NFPA requirements, and location of Inspectors Test Valve shall be permanently etched/engraved on weatherproof metal, secured with corrosion-resistant wire, chain, or other acceptable means to the riser.

#### 2.2 Valves

- 2.2.1 All check valves over 2" shall have a cover plate for maintenance without removing the check valve assembly from the piping system.
- 2.2.2 A minimum of one air relief valve shall be installed at the systems highest point.
- 2.2.3 Test and Drain Valves
  - 2.2.3.1 A test and drain valve shall meet the following requirements:
  - 2.2.3.2 Be installed at the riser.
  - 2.2.3.3 Be equipped with sight glass and 175 PSI rated pressure relief valve.
  - 2.2.3.4 drain to the exterior of the facility.
- 2.2.4. An auxiliary drain shall be installed at the systems most remote point and piped to the exterior of the facility.

#### 2.3 Electronic Supervision

- 2.3.1 PIVs shall not be electronically supervised and be secured by frangible lock provided by 796 CES/CEOFA after completion of acceptance testing.
- 2.3.2 Valves requiring electronic supervision shall utilize rope type tampers.
- 2.3.3 An electronically supervised isolation valve shall be installed on pre-existing systems to separate new work of more than (20) heads.

#### 2.4 Backflow Prevention Assemblies (BPA)

- 2.4.1 Install only University of Southern California (USC) approved double check valve assemblies.
- 2.4.2 BPA shall be installed downstream of the post indicator valve (PIV)
- 2.4.3 BPA shall be installed upstream of the fire pump.
- 2.4.4 BPAs shall include indicating type valves.
- 2.4.5 Water meters/detector check assemblies shall not be installed on BPAs installed on fire suppression systems.

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### 2.5 Fire/Jockey Pump and Controller

- 2.5.1 Premanufactured fire pump houses shall have the entire floor area between the beams filled solid with concrete and fire pump frame must be grouted in.
- 2.5.2 Jockey pump/jockey pump controllers shall be variable frequency drive.
- 2.5.3 Both fire/jockey pumps and controllers shall be connected to emergency power when available.

### 2.6 Fire Water Storage Tanks

- 2.6.1 Fire water storage tanks shall be constructed of steel with welded joints.
- 2.6.2 Fire water storage tanks shall use an approved air gap as backflow prevention.
- 2.6.3 Fire water storage tank inlet control valves shall utilize slow closing solenoid valves or controlled by solenoid valves only.
- 2.6.4 Fire water storage tank inlet control valves shall have a means of manual operation.
- 2.6.5 Fire water storage tank fill valves that use electrical means to operate a control valve shall use separate sensors from the high and low water level alarms to operate the level control valve within the high- and low-level alarms.
- 2.6.6 The water level sensors that control the fire water storage inlet fill valve shall be the probe type and have the following functions.
- 2.6.7 The valve shall tell the inlet fill valve to open before the low water level supervisory signal activates.
- 2.6.8 The fill valve shall shut off before the high-water level supervisory signal activates.
- 2.6.9 Additional NFPA/UFC requirements
- 2.6.10 All other types of water level sensors are prohibited on Eglin AFB.
- 2.6.11 City water bypass loops shall be omitted on fire pumps supplied by a non-elevated fire water storage tank.

### 2.7 Fire Hydrants

- 2.7.1 Fire hydrants shall be painted IAW UFC 3-600-01 and NFPA 291. The paint will be enamel and color matched as follows:
  - 2.7.1.1 Fire Hydrant Red #MD-43827
  - 2.7.1.2 Safety Yellow #MD-43828
  - 2.7.1.3 Safety Orange #MD-43829
  - 2.7.1.4 Safety Blue #MD-43830
  - 2.7.1.5 Green #MD-43831

### 2.8 Signage

- 2.8.1 All signage shall be etched/engraved on weatherproof metal.
- 2.8.2 A general information sign providing the location of any type of valves not installed at the risers, shall be secured to the riser or posted above or below the headbox.

## 3.0 FINAL INSPECTIONS AND PROJECT COMPLETION

- 3.1 At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the system functions properly in every respect, including connection to with the technician interface tool (laptop), if required. Also, provide a box of spare components (smoke detectors, pull stations, etc.), at least two of each device installed on the system. This does not include spare panels, NAC power supplies, or transceivers.
  - 3.1.1 Note: At least (2) representatives shall be on site for the final inspections.

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- 3.2 Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
- 3.3 The contractor and/or the systems manufacturer's representatives shall provide the following items at the final inspection:
  - 3.3.1 NFPA Record of Completion and Inspection, Testing, and Maintenance Report on CDROM
  - 3.3.2 As-built drawings in true half size (12x18) to include a riser diagram, equipment technical data sheets, and battery and voltage drop calculations.
  - 3.3.3 (2) or 10% of each initiating and notification devices installed
  - 3.3.4 Laptop, connecting cables required to interface with installed devices, and CDROM drive.
- 3.4 Provide the manufacturer's recommended/required level of factory training on all the installed equipment and software, regarding installation, operation, maintenance, testing, future expansion, and programming of the fire alarm system for two (2) personnel. This training shall meet or exceed NFPA 72 National F/A and Signaling Code for System Installers, Inspection, Testing and Maintenance Personnel as well as the manufacturer's required level of training and shall guarantee the unconditional operation and future purchase of additional and/or replacement equipment. The training shall take place at one of the locations normally used by the manufacturer and/or distributor to conduct factory training for their in-house employees. This goes for all systems being installed, to include, but not limited to the main fire alarm system, subordinate releasing panels, VESDA systems, mass notification, textual sign systems, electrical/electronic fire pump controller, and clean agent systems. Upon successful completion of all curriculum requirements, the government personnel shall be awarded full access to all available technical support resources, to include at a minimum, on-line and telephone support provided to manufacture and/or distributor personnel.

### 4.0 OTHER SUPPRESSION SYSTEMS

- 4.1 Clean Agent
  - 4.1.1 Clean agent fire suppression systems shall use non-hydrofluorocarbon gaseous fire suppressant.
  - 4.1.2 Clean agent systems must be hard piped from agent container to nozzle.
- 4.2 Antifreeze fire suppression systems
  - 4.2.1 Antifreeze fire suppression systems shall not be installed.

### 5.0 DEFINITIONS

- 5.1 Readily accessible is defined as the following:
  - 5.1.1 Accessible without the use of a ladder, work platform, or special tools
  - 5.1.2 Accessible outside of areas requiring additional security requirements within the facility, i.e., secured/special access areas within the facility.
  - 5.1.3 Below finished ceiling.
  - 5.1.4 Not installed higher than 72" from the finished floor

# EGLIN AFB FIRE ALARM AND SUPPRESSION SPECIFIC REQUIREMENTS FOR NEW INSTALATION



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE CIVIL ENGINEER CENTER**  
**TYNDALL AIR FORCE BASE FLORIDA**

5 Jan 2023

## MEMORANDUM FOR RECORD

**FROM:** AFCEC/CO  
139 Barnes Drive, STE 1  
Tyndall AFB, FL 32403-5319

**SUBJECT:** Fire Alarm Panel Standardization, Up to 3 Manufacturer Brands can be selected

1. This memorandum serves as AFCEC/CO's official communication approving the selection of 2 manufacturers for Fire Alarm Panels respective to the following installation:

<b>Installation:</b>	<b>Unit:</b>	<b>Manufacturers:</b>
Eglin AFB	796 CES	Notifier Onyx, Firelite

2. The comprehensive inventory analysis is to be repeated after five years from the date of this memorandum. The purpose of this secondary analysis is to document the installation's progress in standardizing fire alarm panels, consider any changes in the decision facts, and confirm no external factors exist that may drive a reconsideration of the approved single manufacturer. Should the BCE determine that a change in the approved manufacturers is required, a new Memorandum of Request (MOR) and analysis will be accomplished.

3. Please direct any questions and/or concerns regarding implementation of this guidance to my POC, Mr. Efreem Rivers, DSN 523-6764, [efrem.rivers.1@us.af.mil](mailto:efrem.rivers.1@us.af.mil) or to the AFCEC Reachback Center at [AFCEC.RBC@us.af.mil](mailto:AFCEC.RBC@us.af.mil).

**KLEIN.JEFFREY.ROBERT.1266032575**  
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JEFFREY R. KLEIN, Lt Col, USAF  
Deputy Director, Operations Directorate



## EGLIN AFB FIRE ALARM AND SUPPRESSION SPECIFIC REQUIREMENTS FOR NEW INSTALLATION

### INTERIOR MASS NOTIFICATION MESSAGES - EGLIN AFB Department of Defense, Unified Facilities Criteria 4-021-01 Sept 2017

Authorization for MNS to temporarily override Fire Alarm audible messages and visual signals for providing intelligible voice commands during simultaneous fire and terrorist events (Priority is electronic override of above message – example: 1, 2, & 3 will override 4)

Priority	Type	Pre-Tone	Message Script (Tones and Messages Repeat a Minimum of Three Times)
1	Local Live Voice	None	<b>LOCAL, IN-BUILDING P.A.: Special Announcement for All or Zones in Facility.</b>
2	Bomb Threat	Continuous	May I have your attention please! A bomb threat has been reported in or around this Building 0000. Please follow the pre-plan and await further instructions.
3	Intruder	Continuous	May I have your attention please! An intruder or hostile person has been sighted within or around this Building 0000. Please follow the pre-plan and await further instructions.
4	Alternate Exit	Continuous	May I have your attention please! Please evacuate Building 0000 – using pre-designated Alternate Exits.
5	FIRE	Code 3	May I have your attention please! A FIRE emergency has been reported in this Building 0000. Please depart to your nearest Exit and report to your designated Assembly Area.
6	Shelter In-Place	Continuous	May I have your attention please! Please shelter in-place and await further instructions.
7	Weather	None	May I have your attention please! The National Weather Service has issued a severe weather warning for our area. Please await further instructions.
8	All Clear	None	May I have your attention please! This Building emergency has ended. An “All Clear” has been given. Please resume normal activities.
9	TEST	None	May I have your attention please! This is a TEST of the Mass Notification System. This is only a TEST.

- 1 **Emergency Notification System ONLY; NOT to be utilized for Non-Emergency Messaging Traffic.**
- 2 **Mass Notification System is a Life Safety application authorized only for real-time intelligible voice communications of an actual emergency situation with instructions to personnel for response and action.**
- 3 **Relay #4, linked to priority #6, FIRE, shall not be activated remotely.**