

**Version 1.0 | Approved by:**  Tod Gates, Lynnwood Fire Marshal | **Effective Date:** 09/15/2015

## General

All AES radio transmitters shall be installed and inspected according to the currently adopted NFPA 70, NFPA 72, WAC, manufacturer requirements and recommendation, and the City of Lynnwood guidelines below.

The system shall be installed, tested, and signals verified prior to requesting an inspection. To prevent a re-inspection fee, please verify that the AES radio installation meets the requirements below and the FACP is capable of supervising the AES radio as noted prior to calling for an acceptance test.

## AES INSTALLATION REQUIREMENTS

- Install smoke detector above the AES radio if one is not already present.
- Verify that there is dedicated power to the AES radio. Shared power to the FACP is acceptable.
- Verify that the A/C breaker to the AES circuit is correctly labeled and is provided with a lock-on device.
- Provide a secured transformer enclosure. Wires from the transformer to the AES shall be in conduit.
- All wiring (except A/C power) is required to be shielded with at least one end grounded.
- Coaxial cable outside of the AES enclosure must be installed in conduit. RG-59 or RG-6 coaxial cable is not permitted.
- All bends in coaxial cable outside of the AES enclosure shall have at least a six inch (6") radius.
- An AMSECO transformer (Part No. XF1640) is to be used as per manufacturer requirements.
- The AES radio shall be mounted near the FACP in a temperature controlled environment, unless an alternate mounting location is approved by the Fire Marshal. Alternate locations may require the AES radio to be located inside a lockable NEMA 4 enclosure with a smoke detector and thermostatically controlled heater.
- The FACP shall audibly and visibly supervise the AES radio at the FACP for antenna cut, low battery, loss of power and charger fail as a separate zone or address.
- AES reception shall have a minimum of two (2) "good" paths with a NetCon of 5 or less.
- All wiring less than seven feet (7') above the finished floor shall be protected.
- Each zone or device from the FACP shall be transmitted to the approved Central Station.
- 24-hours of backup battery power is required (24-hours for UL-Certificated systems).
- Batteries in excess of 7.5 A/h are required to be housed in a separate battery cabinet.
- An inspection request is required within 24 hours of energizing the AES radio, or a fine of \$75.00/day may be imposed.

- A Routing Table showing NetCon, link layer, and signal strength shall be provided to the Fire Inspector at the time of Final Inspection.

## **AES PERMIT PROCESS**

All permit applications for the installation of a Wireless Mesh Network (AES) Radio Communicator shall contain the following:

- Complete Electrical Permit application.
- Manufacturer's cut sheets of all proposed equipment to be installed (AES radio, IntelliTap, IntelliPro Fire, etc.).
- A Routing Table from a test radio at the site location prior to installation showing NetCon, link layer, and signal strength. A minimum of two (2) "good" paths of communication with a NetCon of 5 or less is required.
- Three (3) copies of a floor plan, no smaller than 11 x 17 inches, containing the following:
  1. Date, scale and north arrow;
  2. Name and address of the installation site;
  3. Name, address, phone number and contact person of the installing company;
  4. Scope of work to be performed;
  5. Name of the Central Station monitoring the system;
  6. Battery calculations showing 60-hours of battery backup or 24-hours for UL-Certificated systems;
  7. The size of the proposed battery (batteries in excess of 7.5 a/h require an additional battery box);
  8. Riser diagram showing all existing initiating zones reporting to the FACP and the new zone(s) created to supervise the AES radio;
  9. The proposed location of the AES radio;
  10. A smoke detector over the FACP/AES radio;
  11. A note indicating the AES radio is powered by a dedicated A/C power circuit with a breaker lock-on. The AES radio and the FACP may share a dedicated circuit;
  12. A note indicating that a transformer cover is to be installed; and
  13. A note indicating the AES radio will be supervised (both audibly and visibly) for antenna cut, low battery and charger failure (J4 jumper) by the FACP on a separate zone/address.
- Addressable systems require an IntelliTap or IntelliPro Fire module for point ID transmission.
- An inspection request is required within 24 hours of energizing the AES radio. Systems not inspected within 24 hours of energizing are subject to a fine of \$75 per day until the system is found to be compliant.

### **NOTE**

For installations to a UL Certificated system or in a mounting location other than a heated environment next to the FACP, there may be additional requirements.