



Fire Department • City of New York
Bureau of Fire Prevention
 9 MetroTech Center
 Brooklyn, NY 11201

ARCS PLAN SUBMISSION AND APPROVAL PROCEDURES

RE: FDNY application filing procedures and approval for in-building auxiliary radio communication system (ARCS).

A. Filing and Plan Approval

Apply through the FDNY Business website. The filing procedure must follow the directions as indicated on the FDNY business website, depending on the type/time of the filing of the respective application. Be sure to select Auxiliary Radio Communication System **Application Type** on the FDNY Business website.

You will need to submit the following documents and plan examination fee to complete your application.

1. A completed TM-1 application form with the appropriate *Job Description* describing the type of radio equipment and antenna utilized in the proposed system design such as:
 - a. "Installation of a Simplex Auxiliary Radio Communication System with a Passive Distributed Antenna System"

OR
 - b. "Installation of a Repeater Auxiliary Radio Communication System with a Passive Distributed Antenna System"

OR
 - c. "Installation of a Simplex Auxiliary Radio Communication System with an Active Distributed Antenna System"

OR
 - d. "Installation of a Repeater Auxiliary Radio Communication System with an Active Distributed Antenna System"

Note: Choose one of the job descriptions above **or** any other implementation of the radio equipment and/or antenna system as applicable

2. Copy of Certificate of Occupancy or approved DOB Schedule A for the entire building
3. Asbestos Abatement Compliance forms, if applicable based on building construction prior to April 1, 1987 as verified by the Certificate of Occupancy/Approved Schedule A. (See TM-1 for acceptable forms)
4. Landmark Building/Flood Hazard Area compliances (if applicable, may be part of ARCS drawings)
5. ARCS drawings including a riser diagram, floor plans and a legend, sealed and signed by the registered design professional, and showing all ARC system critical components and design criteria including but not limited to the following:

- a) Locations of Fire Command Center(s), Fire Alarm Control Panel(s), and remote annunciator(s). Include a reference to the base building fire alarm system DOB/FDNY Job Number/Record ID.
- b) Locations of the dedicated radio console(s), radio amplification unit, repeater(s), base station(s), antennas, and amplifiers.
- c) Primary and secondary power sources, if applicable
- d) Battery backup
- e) Wiring and cables, including fire protection installation specifications and the location where the ARCS riser ascends vertically on each floor.
- f) Total square foot area of the building
- g) Channel characteristics of the ARC system
- h) Designs utilizing Overlapping Coverage whether by variance or 2022 BC allowance, shall submit the following additional documents:
 - a. Copy of RF propagation model floor plans that show the RF coverage for each floor with all antennas removed from that floor.
 - b. Make and model # of the antennas that will be utilized.
 - c. Affidavit from the registered design professional confirming that the propagation model confirms that if all antennas on any one floor fail, that the DAQ and Signal Strength will meet the requirements of BC Appendix Q Sections 24.9.3.1 and 24.9.3.2.

Note: This only accommodates for the minimum required documents/information, additional documentations/information (e.g. FDNY/DOB variance letters) may be requested by plan examiners as required by application specific conditions.

Additional required submissions:

1. **Project Authorization** is approval to commence the work specified by the approval of the submitted design and installation application. Project Authorization request must be submitted for all approved Auxiliary Radio Communication System Applications filed on FDNY Business. To submit a Project Authorization Request or Renewal, you can select the Project Authorization Request option from the "Design and Installation Application" on FDNY Business.
2. **Submission of "Agreement Allowing Use of In Building Auxiliary Radio Communication System on Fire Department Radio Frequencies" ("Agreement for Owner Use of ARC Systems")**
Apply through the FDNY Business website. When selecting the type of application, expand "Design and Installation Application" and select "ARCS Agreement".

B. Submission of Installation Certification and Commissioning Report

After obtaining acceptance of an Auxiliary Radio Communication System application and Project Authorization, and the installation of the ARC system is completed, a commissioning test report must be performed and prepared in accordance with 3 RCNY 511-01 section F. In addition to the initial commissioning test report, a recertification test must be performed and submitted to the Department in accordance with 3 RCNY 511-01 section G.4 no less than once every 5 years.

Before any testing is done on the ARC system, NYC Fire Department must be notified 48 hours prior to testing by emailing ARCradios@fdny.nyc.gov. The NYC Fire Department has the right to direct all testing to cease at ANY time.

Apply through the FDNY Business website. The filing procedure must follow the directions as indicated on the FDNY business website, depending on the type/time of the filing of the respective application. Be sure to select ARCS Commissioning Test Report **Application Type** on the FDNY Business website.

You will need to submit the following documents and plan examination fee to complete your application.

1. TM-1 Application indicating "Commissioning Test Report" and the type of ARC System in the Job Description *(not required for 5 year recertification)*
2. Affidavit from the registered design professional indicating the ARC System is designed, installed and operates in compliance with FCC regulations, FC511, Section 917 of the 2014 Building Code or Section 916 of the 2022 Building Code, NFPA Standard 72 as amended by Appendix Q, 3 RCNY 511-01 and applicable technical criteria *(not required for 5 year recertification)*
3. As built riser diagrams and floor plans signed and sealed by the registered design professional *(not required for 5 year recertification)*
Note: If the ARCS devices locations and quantities do not match the approved drawings, an ARCS Plan AMENDMENT (PAA) application must be filed to show the correct quantities and locations of all ARCS devices.
4. Completed TM-ARCS-2 Visual and Functional Testing Form
5. A copy of B-03 Certificate of Fitness of the individual performing the test.
6. Commissioning Test Report in compliance with FDNY rule 3 RCNY 511-01, including test grid floor plans, delivered audio quality and signal strength test results, and audio recordings. (Note: An individual audio file must be provided for each test grid. Audio files shall be submitted in .ZIP files using categorized folders of a floor by floor basis, or groups of floors in sequential order.)
7. Designs utilizing Overlapping Coverage whether by variance or 2022 BC allowance, shall submit the following additional documents:
 - a. In addition to the Commissioning Test for all floors under normal conditions, additional tests shall be submitted to demonstrate overlapping coverage. The additional tests shall be performed with all antennas disconnected on the test floor. The tests shall be completed for all floors below grade, all roof levels and every 3rd floor (e.g. 1st floor, 4th floor, 7th floor...). The DAQ, signal strength and audio recordings shall be labeled to differentiate between the normal condition test and overlapping coverage test.
8. A comprehensive list detailing all the manufacturer names and part numbers associated with all equipment, devices and cables utilized in the ARC System. *(not required for 5 year recertification)*
9. Detailed specification and National Recognized Test Laboratory (NRTL) listing details for all devices, cables and equipment. *(not required for 5 year recertification)*
10. The make and model # of the spectrum analyzer utilized for testing and when it was last calibrated.
11. Copy of Department of Buildings Certificate of Occupancy or approved Schedule A
12. Copy of the fully executed (with FDNY signatures) "Agreement allowing use of In-Building Auxiliary Radio Communication System on Fire Department Radio Frequencies" *(not required for 5 year recertification)*
13. A copy of the Auxiliary Radio Communication System Letter of Approval *(recertification applications only)*

Upon review and acceptance of the Commissioning Test Report, a Letter of Acceptance will be issued by Technology Management.

C. Inspection and Acceptance Test

Upon acceptance of the Commissioning Test Report, a request for an Inspection and Acceptance Test must be made to the Fire Alarm Inspection Unit.

The Technology Management Commissioning Test Report Acceptance Letter and approved Auxiliary Radio Communication System application drawings must be provided to the Fire Alarm Inspection Unit, along with all forms and documents required by the Fire Alarm Inspection Unit. Complete information and required documents for requesting an inspection can be viewed on the FDNY Business "Inspections" page.

For designs utilizing Overlapping Coverage, FDNY Operations will request that all antennas on random floors will be removed for testing during the Acceptance Test to demonstrate the overlapping coverage.

After successful completion of the inspection and acceptance test, a **Letter of Approval (LOA)** will be issued for the complete Auxiliary Radio Communication System and the City agreement authorizing use of FDNY frequencies for ARC system testing will remain in effect.