

FAA & FCC Tower Regulations



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Photo courtesy of: Stuart Goetsch, SpectraSite Broadcast Field Services, Inc., Irving, Texas

In a continuing effort to recap portions of the "Do's and Don'ts of Tower Regulation" presentation from NATE's February 2002 conference and exhibition, written below is another specific article that gives NATE members a quick guide in making the right decisions when considering regulations with respect to tower construction. This month's article illustrates how to provide value to your customers by learning and understanding some of the Federal Aviation Administration and Federal Communications Commission's rules related to tower erection.

Painting Towers

Generally, FAA Advisory Circulars require towers that extend more than 200 feet above the ground to be painted. That does not mean in order for the tower painting requirement to apply, the tower must be more than 200 feet above ground to trigger the painting requirement. For example, if a 50-foot tower were situated on top of a 175-foot building, the painting requirement would be applicable because the top of the tower is more than 200 feet above ground.

There are exceptions to the above rule. Specifically, when a tower extends into the protected airspace surrounding an airport or heliport it must be painted -- even if the top of the tower is not more than 200 feet above ground. Also, towers lighted with high intensity white obstruction lights during daylight hours do not require painting.

FAA Notification

The FAA does not have the authority to enforce telecommunications tower regulations. This authority lies solely with the FCC. However, to help ensure the safety of air travelers, the FCC requires that the FAA be notified of any proposed construction of, or modification to, a

tower that is more than 200 feet above ground. It also requires that the FAA be notified of any proposed construction of, or modification to, a tower that is within the protected airspace surrounding a public airport. Notification to the FAA occurs by filing a Notice of Proposed Construction or Alteration (FAA Form 7460-1). A copy of that form can be downloaded at <http://www.faa.gov/arp/ace/forms/7460-1.pdf>.

When an application to construct or modify a broadcast facility is filed with the FCC, the application is reviewed to



Painting and/or Lighting Required for:

- Any antenna structure taller than 60.96 meters (200 feet)
- Antenna structures near a public use airport

determine if there is a requirement that the applicant file FAA Form 7460-1 with the FAA. If the FCC determines that the application needs to be filed with the FAA, the FCC will notify the applicant of the need to file -- unless the applicant has indicated on its FCC application that it has already filed FAA Form 7460-1. In order to expedite the approval process of their FCC applications, applicants would be well advised to file FAA Form 7460-1 ahead of time (if, based on the criteria described above, FAA notification is required).

After Form 7460-1 has been filed, the FCC will wait for the FAA to determine if the tower poses a hazard to air navigation. If the FAA determines that the tower does pose a hazard to air navigation, the FCC will notify the applicant and work with the applicant and the

FAA & FCC Tower Regulations

FAA to determine a solution to the hazard problem. If the FAA determines that the tower does not pose a hazard to air navigation, the FCC will continue processing the application, unless the FAA's no hazard determination has expired.

Once a tower has received FAA clearance (if such clearance is required by the FCC), there can be no new air navigation restrictions placed upon it that are a result of changes in the FCC rules or the relocation of an airport. This provision also applies to towers that do not require FAA clearance. This means that tower owners whose towers do not meet all of the current painting and lighting requirements specified by the FCC do not have to modify their towers as long as they comply with the requirements specified on the tower registration (FCC Form 854R) issued to them by the FCC when they registered their towers.

There are three exceptions to the above FAA-notification rules.

Exception Number 1. The FCC does not require FAA notification if the proposed construction or alteration would result in a tower that would be shielded by existing structures of a permanent and substantial character, or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, etc. where it is clearly evident that the tower will not adversely affect safety in air navigation. Applicants who claim this exemption must submit detailed explanation of their basis for claiming the exemption along with their applications to the FCC.

Exception Number 2. The FCC does not require FAA notification if the proposed construction or alteration results in a tower that is no taller than 20 feet. For example, if a 20-foot tower is proposed for installation on top of a 300-foot height building, the FCC does not require FAA notification, even though the top of the tower is 320 feet above ground level. However, if a 300-foot tower were proposed for installation on top of a 20-foot high building, FAA notification would be required.

Exception Number 3. The FCC does not require FAA notification if the proposed construction or alteration is for an air navigation facility airport visual approach or landing aid, aircraft arresting device, or meteorological device. Of course, this exception generally does not apply to the towers of broadcast, cellular, microwave, etc. facili-

Exceptions to FAA Notification Rules

Tower shielded by existing structures of a permanent and substantial character or by natural terrain.

ties. It is only mentioned here for the sake of completeness.

Some airports throughout the country are privately owned and not regulated by the FAA. Local restrictions may apply to the construction of towers near those airports and local authorities should be consulted whenever such construction is planned. The next portion of this article focuses on FAA requirements that apply to public airports.

Upon notification of a proposed tower construction or modification, the FAA will review the proposal to determine whether the proposed tower structure itself would be a hazard to air navigation; and whether the radio frequency emissions from the tower would be a hazard to aeronautical communications. If the FAA determines that a hazard would exist, it notifies the FCC, which, in turn, notifies the applicant. The applicant must then revise the application to address the FAA's concern.

The only criterion used to determine if FAA notification is required is the height of the tower. However, once the FAA has been notified, it will review a proposed antenna's RF emissions as part of its clearance process.

Protected Airspace based on Runway Length

Another issue to consider when constructing a tower is whether that tower will be built in protected airspace. The protected airspace surrounding an airport is based on the size of the airport's longest runway. For the purpose of determining protected airspace, three different categories of airports exist, including: 1) airports that have at least one runway that is longer than 3,200 feet; 2) airports that do not have any runways that are longer than 3,200 feet; and 3) heliports.

If the airport in question has a runway that is longer than 3,200 feet, the protected airspace around the airport is considered to be any airspace above an imaginary surface that extends out horizontally for 20,000 feet (@ 3.8

FAA & FCC Tower Regulations

miles) from the nearest point on the nearest runway, and rises at a rate of one foot per every 100 horizontal feet traveled.

If the airport in question does not have a runway that is longer than 3,200 feet, and it is not simply a heliport, the protected airspace around the airport is considered to be any airspace above an imaginary surface that extends out horizontally for 10,000 feet (@ 1.9 miles) from the nearest point on the nearest runway, and rises at a rate of one foot per every 50 horizontal feet traveled.

If the airport in question is only a heliport, the protected airspace around it is considered to be any airspace above an imaginary surface that extends out horizontally for 5,000 feet (@ 1 mile) from the nearest landing and takeoff area, and rises at a rate of one foot per every 25 horizontal feet traveled.

Although information shared in this article can be used to determine government guidelines for a particular tower, be aware that the specific requirements for any particular tower are specified by the FCC and the FAA. Any individual tower could have special circumstances that would cause the FCC or FAA to specify requirements that differ slightly from the general government guidelines. Therefore, before erecting a tower, always check the tower registration and if necessary, consult with an attorney, to insure that no special requirements are necessary. **TT**

FAA Notification Requirements for Towers Near Airports with at Least One Runway Longer Than 3,200 Feet



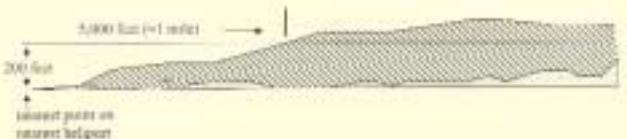
As long as the tower is completely within the shaded airspace, FAA notification is not required.

FAA Notification Requirements for Towers Near Airports with No Runways Longer Than 3,200 Feet



As long as the tower is completely within the shaded airspace, FAA notification is not required.

FAA Notification Requirements for Towers Near Heliports



As long as the tower is completely within the shaded airspace, FAA notification is not required.

DRAWINGS ARE NOT TO SCALE