

monitoring point field strength measurements or antenna proof of performance measurements, and shall be restricted to the minimum time required to accomplish the measurements.

(4) Operating power in the nondirectional mode shall be adjusted to the same power as was utilized for the most recent nondirectional proof of performance covering the licensed facilities.

[50 FR 30947, July 31, 1985]

§ 73.158 Directional antenna monitoring points.

(a) When a licensee of a station using a directional antenna system finds that a field monitoring point, as specified on the station authorization, is no longer accessible or is unsuitable because of nearby construction or other disturbances to the measured field, an application to change the monitoring point location, including FCC Form 302-AM, is to be promptly submitted to the FCC in Washington, DC.

(1) If the monitoring point has become inaccessible or otherwise unsuitable, but there has been no significant construction or other change in the vicinity of the monitoring point which may affect field strength readings, the licensee shall select a new monitoring point from the points measured in the last full proof of performance. A recent field strength measurement at the new monitoring point shall also be provided.

(2) Alternatively, if changes in the electromagnetic environment have affected field strength readings at the monitoring point, the licensee shall submit the results of a partial proof of performance, analyzed in accordance with § 73.154, on the affected radial.

(3) The licensee shall submit an accurate, written description of the new monitoring point in relation to nearby permanent landmarks.

(4) The licensee shall submit a photograph showing the new monitoring point in relation to nearby permanent landmarks that can be used in locating the point accurately at all times throughout the year. Do not use seasonal or temporary features in either the written descriptions or photo-

graphs as landmarks for locating field points.

(b) When the description of the monitoring point as shown on the station license is no longer correct due to road or building construction or other changes, the licensee must prepare and file with the FCC, in Washington, DC, a request for a corrected station license showing the new monitoring point description. The request shall include the information specified in paragraphs (a)(3) and (a)(4) of this section, and a copy of the station's current license. A copy of the description is to be posted with the existing station license.

[66 FR 20757, Apr. 25, 2001]

§ 73.160 Vertical plane radiation characteristics, $f(\theta)$.

(a) The vertical plane radiation characteristics show the relative field being radiated at a given vertical angle, with respect to the horizontal plane. The vertical angle, represented as θ , is 0 degrees in the horizontal plane, and 90 degrees when perpendicular to the horizontal plane. The vertical plane radiation characteristic is referred to as $f(\theta)$. The generic formula for $f(\theta)$ is:

$$f(\theta) = E(\theta)/E(O)$$

where:

$E(\theta)$ is the radiation from the tower at angle θ .

$E(O)$ is the radiation from the tower in the horizontal plane.

(b) Listed below are formulas for $f(\theta)$ for several common towers.

(1) For a typical tower, which is not top-loaded or sectionalized, the following formula shall be used:

$$f(\theta) = \frac{\cos(G \sin \theta) - \cos G}{(1 - \cos G) \cos \theta}$$

where:

G is the electrical height of the tower, not including the base insulator and pier. (In the case of a folded unipole tower, the entire radiating structure's electrical height is used.)

(2) For a top-loaded tower, the following formula shall be used: