

**Before the
Federal Communications Commission
Washington, D. C. 20554**

In the Matter of)	
)	
Amendment of Part 90)	WP Docket No. 07-100
Of the Commission's Rules)	

Comments of Hatfield & Dawson Consulting Engineers, LLC

On May 4, 2007 the AM Directional Antenna Performance Verification Coalition (“AM Coalition”) filed an *ex parte* presentation requesting that the Commission re-open the long-pending FNPRM in MM Docket 93-177, *An Inquiry into the Commission's Policies and Rules Regarding AM Radio Service Directional Antenna Performance Verification*, 16 FCC Rcd 5635 (2001). In this filing the AM Coalition proposed changes to Sections 73.151 and 73.61 and a new section 73.155 to modify the rules to allow analysis of the performance of AM directional antennas by the use of moment method computer programs and certain “internal” array parameter measurements. As a corollary to this new set of procedures for establishing and maintaining the operation of AM directional antenna arrays, the AM Coalition also proposed a new rule governing construction or alteration of other antennas and antenna structures near or on AM antenna systems or towers. The AM Coalition proposed that this rule replace the present Sections 22.371, 27.63, and 73.1692, and suggested that the appropriate location for the new rule is in Part 17 *Construction, Marking and Lighting of Antenna Structures*.

At paragraph 15 of the NPRM&O in WP Docket 07-100, the Commission proposes the addition of a new AM antenna proximity rule to Part 90, in order to clarify that the Commission's long standing policy regarding potential disturbance of AM antennas applies to part 90 licensees.¹ The rule proposed is essentially identical to the present

¹*In re Complaint of Radio Station KCRC, Enid, Okla. Concerning Location of Abandoned Tower of B&W Truck Service*, 15 FCC 2d 0769 (1968) clearly establishes the principle that all Commission licensees and, by inference, all electromagnetic spectrum users subject to Commission authority (such as part 15 permitted users), are required to protect the operation of nearby AM antenna systems.

22.371 and 27.63. The NPRM&O text (paragraph 15) also suggests the possibility of placing this rule in part 17 rather than in individual rule sections applicable to specific services.²

These existing rule sections, and the rule proposed in Docket 07-100 all rely on magnetic field measurement techniques to establish compliance, as does the existing AM antenna proof of performance rule, 73.151. The new rules proposed as alternative AM antenna proof of performance requirements by the AM Coalition allow the certification of AM antenna system operation by moment method numerical analysis and measured internal array parameters. Therefore the AM Coalition determined that a new procedure, using the same moment method techniques, is most appropriate for establishing that new or modified antenna construction near AM antenna systems does not adversely affect their performance. Indeed, the Media Bureau staff has accepted precisely this type of analysis for new construction or alteration by part 73 and part 74 licensees and permittees since shortly after adoption of the relevant present rule, 73.1692. In addition, the AM Coalition proposed rule establishes the catchment area (outside of which no specific study is required) on the basis of the electrical height and distance in wavelengths from the AM antenna.

²The text also asks if a similar rule should be contained in part 22, but such a rule, 22.371, already exists.

Therefore, Hatfield & Dawson Consulting Engineers, LLC strongly recommend that the Commission consider this matter in the context of MM Docket 93-177, and adopt the proposed rule recommended by the AM Directional Antenna Performance Verification Coalition in part 17, applicable to all Commission licensees and others under Commission regulatory purview.³

Hatfield & Dawson Consulting Engineers, LLC



Benj. F. Dawson III, P.E., President

³Because Media Bureau has the requisite technical expertise to evaluate any requests for waiver of the proposed rule and other Bureaux are unlikely to have such resources, a clear statement delegating that waiver authority to the Media Bureau should be contained in the text of the final order adopting the rule.

PROPOSED NEW RULE

UNDER PART 17

Construction Near or Installation on an AM Broadcast Antenna System or Tower

Part 17

Construction near or installation on an AM broadcast antenna system or tower.

(a) *Construction near an AM broadcast antenna system.* All Commission licensees that construct or make a significant modification to an antenna tower or support structure in the immediate vicinity of an AM antenna system are responsible for measures necessary to correct disturbances of the AM antenna radiation pattern that causes operation of the AM station outside of the radiation parameters specified by the FCC, if the disturbance occurs as a result of such construction or modification. The proponent of such construction or modification shall notify the licensee of the AM station in advance of the proposed construction or modification.

(1) In most cases, the addition of one or more antennas to an existing antenna tower or support structure will not affect a nearby AM antenna system. A significant modification to an antenna tower or support structure is defined as follows:

(i) with respect to an antenna tower or support structure that is in the immediate vicinity of an AM antenna system, any change, including the addition or removal of an antenna or mounting platform, that would alter the structure's effective electrical height by 5 degrees or more at the AM station's carrier frequency, as determined by moment method analysis; or

(ii) the addition of one or more antennas or a transmission line to an antenna tower that has been detuned or base-insulated in order to prevent disturbances of the radiation pattern of such AM antenna system as a result of the requirements of this section, or a previously applicable FCC rule.

(2) An antenna tower or support structure is in the immediate vicinity of an AM antenna system if it is greater than 60 electrical degrees in height in the case of a nondirectional antenna, or 45 electrical degrees in height in the case of a directional antenna, at the AM station frequency, and is located at a distance no greater than the lesser of 10 wavelengths or 3 km from any element of an AM directional antenna or less than 1 wavelength from an AM omnidirectional antenna.

(3) Licensees proposing construction of or a significant modification to an existing antenna tower or support structure in the immediate vicinity of an AM antenna system shall examine the potential effects thereof using a moment method analysis. The moment method analysis shall consist of a model of the AM antenna together with the potential reradiating antenna tower or support structure in a lossless environment. The construction or modification shall be deemed to have no adverse affect on the AM antenna system, and no remedial measures will be required, if the model shows that:

(i) the omnidirectional radiation pattern of the AM station would not be made non-circular by more than 2 dB; or

(ii) the theoretical radiation pattern of an AM directional antenna would not be distorted outside the licensed standard or augmented radiation pattern.

With respect to an AM station that was authorized pursuant to a directional proof of performance conducted with field strength measurements, the proponent of the construction or modification may, in lieu of the showing described in Paragraph (3)(ii), demonstrate through measurements taken both prior to and upon completion of the construction or modification that (A) the monitor point values of the AM directional antenna do not exceed the licensed values, or (B) in the event that the pre-construction or modification monitor point values exceed the licensed values, the post-construction or modification monitor point values do not exceed the pre-construction or modification monitor point values. Alternatively, the proponent may file for authority to increase the relevant monitor point value after performing a partial proof of performance in accordance with §73.154 that establishes that the licensed radiation limits on the applicable radial are not exceeded.

(4) Absent a showing of no adverse affect as described in Paragraph 3, the proponent of the construction or significant modification shall be responsible for the installation and continued maintenance and proper operation of any detuning apparatus necessary to restore proper performance of the AM antenna system.

(b) *Installation on an AM antenna tower.* A licensee of an AM station employing an omnidirectional antenna shall conduct an antenna impedance measurement after the completion of construction, and if the results show changed conditions, the licensee shall file an application on FCC Form 302-AM to return to direct power measurement. Prior to commencing construction, the licensee of an AM station employing a directional array shall request Special Temporary Authority pursuant to §73.1635 for operation of the antenna system. If the construction and any necessary adjustments to the antenna system result in antenna monitor parameters that are not within the tolerances specified by §73.62(a) or, where applicable, monitor point field strength limits specified in the station license, an application on FCC Form 302-AM (including a tower sketch of the installation) shall be filed with the Commission for the AM station, including antenna measurements as follows:

(1) if the license was granted pursuant to a proof of performance employing field strength measurements, a partial proof of performance (as defined by §73.154(a)); or

(2) if the license was granted pursuant to §73.151(a), a new analysis using the modified antenna characteristics shall be performed in accordance with that section.