



PUBLIC NOTICE

FEDERAL COMMUNICATIONS COMMISSION
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DA 07-2143
May 23, 2007

COMMENT SOUGHT ON PROPOSED RULES PERMITTING ANTENNA MODELING TO VERIFY AM DIRECTIONAL ANTENNA PERFORMANCE

MM Docket No. 93-177

Comment Date: July 23, 2007
Reply Comment Date: August 22, 2007

In late 2006 and early 2007, an *ad hoc* technical group of radio broadcasters, equipment manufacturers, and broadcast consulting engineers, acting collectively as the AM Directional Antenna Performance Verification Coalition (“Coalition”), convened to assess previous comments and to refresh the record in the Commission’s directional antenna proceeding.¹ On May 4, 2007, the Coalition submitted recommendations to the Commission. The Coalition requests rule changes to permit applicants to use moment method computer modeling² to demonstrate that AM directional antennas perform as authorized. The proposed rules also would permit use of moment method modeling to assess the effects of tower construction in proximity to AM antennas. The Coalition’s recommendations and draft rules are available electronically from the Commission’s website at: http://gullfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi under MM Docket No. 93-177, or from the Commission’s duplicating contractor, Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-

¹ See *An Inquiry Into the Commission’s Policies and Rules Regarding AM Radio Service Directional Antenna Performance Verification*, Further Notice of Proposed Rule Making, 16 FCC Rcd 5635 (2001) (MM Docket No. 93-177) (“*Further Notice*”).

² Computer programs to predict antenna performance are generically referred to as “moment method” or “NEC” programs. NEC programs are based on the Numerical Electromagnetics Code moment method of analysis developed at Lawrence Livermore Laboratory, Livermore, California.

B402, Washington, DC, 20554, 800-378-3160. The Media Bureau seeks comment on the Coalition's conclusions and recommendations.

Currently, an AM station using a directional antenna array must rely on field strength measurements performed at a distance from the antenna to verify its performance.³ Moment method programs, in contrast, use certain internal antenna parameters, such as current and phase, to predict the resulting antenna pattern accurately. The *Further Notice* sought comment on the use of moment method modeling as a more efficient substitute for traditional field strength proofs, which are time-consuming and expensive. In response to the *Further Notice*, a predecessor *ad hoc* technical group developed an initial set of criteria to define those directional antenna systems that could be modeled reliably.⁴ The criteria included antenna array physical characteristics and antenna sampling system requirements. This *ad hoc* technical group also concluded that the Commission should not permit moment method modeling if an AM array is located near towers, power lines, or other structures that might scatter or reradiate the AM field, and thereby distort the pattern shape. Although the restrictions concerning nearby reradiators were so conservative as to prohibit many AM arrays from performing moment method proofs, commenters stated that the criteria would nevertheless allow the Commission and the industry to gain some initial experience with this new methodology with minimal risk.⁵

In the ensuing period, moment method programs have gained wider acceptance among broadcast engineers and among Commission staff. Twenty broadcast group owners and ten broadcast consulting firms support the rules proposed by the Coalition. The proposed rules would permit most directional AM stations to perform moment method proofs, substantially reducing the time required for a directional antenna proof of performance by both licensee and Commission staff. In a related application, the draft rules also would permit use of moment method modeling to assess the effect of nearby reradiators on AM patterns. This proposal reflects current industry practice, and is appropriately considered in connection with this proposal to adopt moment method modeling.

Interested parties may submit comments on or before July 23, 2007, and reply comments on or before August 22, 2007. Comments and replies should specifically reference this Public Notice. Comments and reply comments must be filed electronically at <http://www.fcc.gov/cgb/ecfs>.

Ex parte status: This is a "permit-but-disclose" rulemaking proceeding.⁶ "Permit-but-disclose" *ex parte* procedures permit interested parties to make *ex parte* presentations to the Commissioners and Commission employees and require that these presentations be disclosed in the record of the relevant proceeding. Persons making a written *ex parte* presentation to the Commissioners or Commission employees must file the written presentation with the Commission, as set forth below, no later than the next business day after the presentation. *See* 47 C.F.R. § 1.1206(b)(1). Persons making oral *ex parte* presentations must file a summary of the presentation, as set forth below, and deliver copies to the Commissioners or Commission employees involved with the presentation no later than the next business day after the presentation. *See* 47 C.F.R. § 1.1206(b)(2). All *ex parte*

³ *See* 47 C.F.R. § 73.186. A proof of performance requires field strength measurements made on a minimum of six radials, to a distance of approximately 15 kilometers from the antenna.

⁴ *See generally* Joint Comments of Broadcasters, Broadcast Engineering Consultants, and Equipment Manufacturers (filed July 9, 2001).

⁵ *Ibid.* at 7.

⁶ *Further Notice*, 16 FCC Red at 5650.

filings must be clearly labeled as such and must reference this Public Notice, as well as any other applicable docket or file numbers.

An original and one copy of all *ex parte* memoranda must be filed with the Commission's Secretary, Marlene Dortch, Federal Communications Commission, c/o Natek, Inc., 236 Massachusetts Avenue, NE, Suite 110, Washington, DC, 20002, in accordance with 47 C.F.R. § 1.1206(b)(1). In addition, one copy of each *ex parte* memorandum should be delivered to each of the following locations: (1) the Commission's duplicating contractor, Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC, 20554. Copies of the reports and any subsequently filed documents in this matter may be obtained electronically at <http://www.fcc.gov/e-file/ecfs.html>, and on paper from the contractor during normal business hours in the Commission's Reference Information Center located at 445 12th Street, SW, Room CY-A257, Washington, DC, 20554.

For additional information, contact Ann Gallagher or Susan N. Crawford at the Audio Division, Media Bureau at (202) 418-2700.

By: Chief, Media Bureau

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