PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News Media Information 202 / 418-0500
Internet: http://www.fcc.gov
TTY: 1-888-835-5322

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MEDIA BUREAU ADOPTS SIMPLIFIED APPLICATION PROCEDURES FOR AM NONDIRECTIONAL VALCOM ANTENNAS

By this *Public Notice*, the Media Bureau ("Bureau") announces simplified procedures for AM station construction permit applications which specify Valcom antennas. Based on its review of the Valcom field tests and internal reports submitted to the Commission for evaluation, the Bureau announces that it will not routinely require the submission of a proof of performance, current distribution measurements, or a formula for the vertical plane radiation characteristic for nondirectional AM facilities which utilize these antennas.

The Valcom antenna, manufactured by Valcom Manufacturing Group Inc., is a self-supporting whip antenna which is shorter and more streamlined than the one-quarter wavelength lattice tower typically used by AM stations. The Valcom antenna includes a "Valcosphere," or a wire-framed sphere, mounted at the top of the whip antenna. A top-loading coil is mounted approximately one-third of the total height above the antenna base. The Valcom antenna requires use of a 120-radial buried ground system. Attachment A to this *Public Notice* is a January 2007 report submitted by Valcom describing the construction, modeling, and field testing of the Valcom antenna. Based on field tests submitted by the manufacturer, two models of the Valcom antenna are approved for routine use at higher AM frequencies. The 85-foot Valcom antenna may be used at frequencies ranging from 1200 to 1700 kHz; the 75-foot Valcom antenna may be used at frequencies from 1390 to 1700 kHz. The low-profile Valcom antenna affords AM licensees the flexibility to place antennas in areas where taller towers may be unacceptable, and may be more economical to build and maintain than a standard antenna. Applicants may only specify the Valcom antenna for nondirectional use. The Bureau will consider authorizing the use of directional Valcom arrays when more information is available.

The January 2007 field test report included in Attachment A establishes radiation efficiency values for the 75- and 85-foot Valcom antennas within specified frequency ranges. Figure 9 in Attachment A shows the calculated efficiencies, all of which meet or exceed the minimum efficiency for Class B, C, and D AM stations.[1] The Figure 9 efficiency values are reproduced in Attachment B for ease of reference. The field tests on which the calculated efficiency figures are based were performed with the Valcom antenna mounted above a ground system consisting of 120 buried radials, each 120 feet in length. Applicants specifying a Valcom antenna shall use the antenna efficiency values set forth in Attachment B, provided that both the antenna and the ground system are the same as those described in Attachment A.[2] Use of

[1] *See* 47 C.F.R. § 73.189(b)(2)(ii).

[2] We note that it is permissible to use the 85-foot Valcom antenna on any frequency from 1200 kHz through 1700 kHz. Applicants who wish to use the 85-foot antenna at frequencies above 1390 kHz, i.e., on frequencies not included in the January 2007 field test report, must establish antenna efficiency by performing measurements taken in accordance with 47 C.F.R. § 73.186.

any ground system other than one consisting of 120 radials, each 120 feet long with the Valcom antenna requires submission of a proof of performance as set forth in Section 73.186.

Previous studies on the Valcom antennas demonstrated that the antenna elevation pattern for each can be represented by the formula for a simple vertical radiator in Section 73.160(b)(1) of the Commission's rules. A 2003 memo from the Office of Engineering and Technology concluded, based on antenna modeling studies, that the elevation pattern for a short vertical monopole such as the Valcom antenna is virtually independent of the current distribution along the radiating element.[3] Consequently, the staff has eliminated the requirement for current distribution measurements that is normally applied to non-standard antennas. Applicants proposing to use Valcom antennas shall use the formula in Section 73.160(b)(1), based on the physical height of the radiator, in computing the vertical form factor commonly referred to as $f(\theta)$.

For additional information, contact Son Nguyen, Ann Gallagher, Charles Miller, or Susan Crawford of the Audio Division at (202) 418-2700.

By: Chief, Media Bureau

This Public Notice includes the following attachment:

Attachment A: Request for Approval of Specified Radiation Efficiencies for Valcom 85 Foot Pole with Valcosphere Over the Range of 1200 kHz to 1390 kHz and Valcom 75 Foot Pole with Valcosphere Over the Range of 1390 kHz to 1700 kHz.

Attachment B: Figure 9 – Tabulation of Radiation Efficiency of Valcom AM Broadcast Antennas.

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[3] The May 1, 2003, OET memorandum is included in Attachment A.