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Federal Communications Commission  
Office of the Secretary  
445 12th Street, SW  
Washington, DC 20554

Subject: Petition for proposed change in 47 CFR 73.1545 (a), carrier frequency departure tolerances, AM stations

Commissioners:

47 C.F.R. § 73.1545 (a) provides that departure from assigned frequency for AM broadcast stations may not exceed  $\pm 20$  Hz. This rule serves well for purposes of ensuring the intelligibility of audio content. However, AM broadcast transmissions also serve a valuable technical role as reliable and geographically extensive sources of signals of known frequency. In this context the  $\pm 20$  Hz tolerance is often grossly inadequate.

It is obvious to the FCC that NIST is acutely aware of the public need for accurate frequency standards, for instance in the form of time and frequency standard broadcasts from WWV and WWVH. These serve well, yet the realities of daytime radio propagation mean that users not in the near vicinity of these stations lack reception during working hours, precisely when the need for accurate frequency standards is most widespread.

Although NIST broadcasts are exactly on frequency “by definition”, most needs for frequency standards may be satisfied with sources of lesser accuracy, notwithstanding that the required accuracy is often far tighter than the present  $\pm 20$  Hz requirement of § 73.1545 (a).

To enhance the public service role of AM broadcast, I petition that § 73.1545 (a) be changed to provide that stations assigned to frequencies on 100 KHz boundaries, i.e. 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, and 1700 KHz, maintain a frequency tolerance consistent with service as a secondary frequency standard.

Such stations are common enough to provide continuous service to a substantial fraction of the U.S. population. AM broadcast frequencies are easily processed by low cost electronics, allowing accurate frequency reference sources at a cost threshold of at most tens of dollars.

Millihertz accuracy is sufficient for the vast majority of applications, which is well within the capability of off-the-shelf rubidium based or GPS disciplined frequency sources. Acquisition cost would be at most a footnote in the operating budgets of typical broadcast operations.

Beneficiaries would include experimenters, amateur radio operators, and commercial entities dependent upon electronic metrology. The potential public good is not so much that cost will be drastically reduced as that ubiquity will enable new, pioneering applications not yet conceived.

Respectively submitted:

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