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**NEWS RELEASE**

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**FCC Issues Notice of Proposed Rulemaking and Order in Response to SBE 2011 Petition for Rulemaking, RM-11648**

On Nov. 7, 2011, the SBE filed a Petition for Rule Making, RM-11648, which was very limited in scope and quite straightforward. It sought to facilitate the use by Broadcast Auxiliary Service (BAS) licensees of certain digital voice and data emissions in BAS allocations at VHF and above by Remote Pickup (RPU) Broadcast Stations. It contained proposed revised rules for Subpart D of FCC Rule Part 74. It was intended (1) to facilitate the use of existing, narrowband, spectrum-efficient digital voice and data technology by permitting the use of digital emissions not currently permitted in Subpart D, Part 74 for RPU stations; and (2) to address an anomaly in the Part 74 Rules that was created unintentionally by the FCC in 2002 in ET Docket No. 01-75 relative to licensing of stacked, narrowband RPU channels. The SBE was and is of the view that encouraging the conversion of analog RPU systems to narrowband digital voice technologies at VHF and above, and simplifying the use of stacked, narrowband channels for RPU operation by BAS licensees (and as well encouraging the use of the minimum necessary bandwidth for RPU facilities) were quite obviously good ideas. A similar petition was filed at the same time by the Engineers for the Integrity of Broadcast Auxiliary Services Spectrum.

Now, three years and three months later, the FCC has finally taken action on these two petitions for rulemaking by issuing a *Notice of Proposed Rule Making and Order*, FCC 15-22, WT Docket No. 15-36, released Feb. 18, 2015. The NPRM and Order, after an unprecedented delay, was surprisingly non-responsive to the concerns raised in the two rulemaking petitions. The comment date on the NPRM is not determined as of this writing.

The SBE's Petition first asked for Part 74 rule changes that would permit BAS licensees to migrate to the use of spectrum-efficient narrowband digital technology and equipment that is now and has been in regular use in the Land Mobile Radio Service for years. Time Division Multiple Access (TDMA) technology and Next Generation Digital Network (NXDN) technologies are two examples of emissions that can facilitate the gradual conversion from analog voice to narrowband digital voice and data technologies by RPU station licensees. Those emissions should clearly be permitted where analog voice and data emissions are now permitted pursuant to Section 74.462 of the Commission's Rules, but they are not. Both TDMA and NXDN are permitted for Part 90 PMRS licensees (and they are now permitted in the Amateur Radio Service as well). In general, the applications for this equipment are similar for Part 74 RPU stations. The SBE asked that Section 74.462 be amended to simply permit any emission that meets the applicable emission mask and bandwidth limitations. This, we argued, would create the flexibility in the rules necessary to accommodate future digital technologies to which RPU licensees can adapt to their purposes. By enacting such a flexible rule, the FCC would have effectuated the policy adopted in 2002 to permit RPU licensees to utilize a "wide variety" of digital modulation schemes.

At the same time that the Petition was filed, the SBE also filed a temporary waiver request asking that, while the SBE's Petition was being considered (and because of the inherent delay in implementing rule changes through normal processes), Section 74.462 of the FCC Rules be waived to permit RPU licensees to immediately begin utilizing: (1) a Motorola TDMA system that is in regular use in the private land mobile radio service and which is also authorized through the Commission's certification program for Part 74 applications; and (2) radios using the NXDN Common Air Interface technology, which is an FDMA (Frequency Division Multiple Access) technology with 4FSK modulation that uses 6.25 kHz channel bandwidths, also certified in two different manufacturer configurations for Part 74 use.

Second, the SBE's Petition asked that the Commission permit the opportunity for stacking RPU channels in 3.125 kHz segments in the frequency ranges specified in Section 74.402(b)(4), because that would eliminate a problem in specifying channel centers in applications for RPU facilities. In the 2002 FCC Report and Order that modified the RPU rules, the Commission adopted the channel plan, consistent with the Part 90 channel plan, to utilize 7.5 kHz (stackable) channels in the 150-160 MHz band and 6.25 kHz (stackable) channels in the 450 MHz band. That system was generally workable. However, there was an unintended consequence of the channel stacking formula that relates to the channel centers specified in Rule Section 74.402(b)(4). That subsection permits the stacking of up to eight, 6.25 kHz channels, which are listed in a table of channel centers beginning at 450.04375 MHz and ending at 455.61875 MHz. The problem is that, if one attempts to stack an *even* number of channels in this list, the applicant must specify as a center frequency a channel that extends to *six decimal places*. The resultant center frequency *cannot* be programmed into many, if not most, analog radios now in use. The Commission regularly returns applications specifying an *offset* channel center for even numbers of stacked channels to assemble a 12.5, 25 or 50 kHz channel. So, the applicant has no choice but to specify an *odd number of channels* to obtain a license specifying a channel center that can actually be used and which is specified in the license. So, if, for example, RPU Applicant X really wants to utilize a 25 kHz-wide channel bandwidth for transmission of program material, but cannot specify a center frequency that would result from stacking two- or four- or six-adjacent 6.25 kHz channels specified in Section 74.402(b)(4), Applicant X has no choice but to specify, for example, five stacked channels (31.25 kHz) instead of four (25 kHz); or three (18.25 kHz) instead of two (12.5 kHz), which is in each case more bandwidth than what that applicant needs. Under these circumstances, the process defeats the Commission's narrowbanding goal in the 2002 RPU band plan, since the original goal was to permit applicants to utilize the *minimum* amount of spectrum necessary for the transmission of program material.

The simplest solution for this problem is to specify in narrative fashion the opportunity for stacking channels in *3.125 kHz segments* in the frequency ranges specified in Section 74.402(b)(4). It would be cumbersome to specify a table of channel centers in this manner, each channel being 3.125 kHz wide. That is what the SBE proposed. While reviewing this issue, the SBE concluded that there is no longer a need to apply for *new*, 100 kHz RPU channels. The outstanding licenses specifying 100 kHz channel bandwidths should be grandfathered and should be renewed. So the SBE's petition also asked that no new, 100 kHz RPU facilities be licensed after the effective date of an order adopted in this proceeding *absent a showing of need* in individual cases.

The FCC did absolutely nothing with either of the petitions or with the SBE's temporary waiver petition for more than three years. The Feb. 18, 2015 NPRM and Order, however, (1) asked for comment on the proposal to allow expanded digital emissions in the RPU bands; (2) stated that it didn't believe that there was any need to address the RPU channel center anomaly and dismissed the part of both petitions that asked for relief from the regulatory problem that the Commission created in 2002; and (3) denied SBE's temporary waiver request for the use of TDMA and NXDN (FDMA) emissions. Frankly, given the limited relief proposed in the NPRM and Order, the FCC could have created the NPRM in less than a week. Why it took this long to provide a relatively superficial analysis of the SBE petition is unclear.

First, with respect to the channel center issue, the FCC said that although analog equipment was unable to precisely specify frequencies to six decimal places, no transmitter can operate on a specific frequency with absolute precision, and the rules recognize this limitation by establishing permissible frequency tolerances for RPU equipment. In the VHF RPU Band, the tightest applicable frequency stability requirement is one part per million, which translates into an acceptable deviation of approximately 150 hertz. For the UHF RPU Band, the tightest applicable frequency stability requirement is 0.5 parts per million, which translates into an acceptable deviation of approximately 225 hertz. So, because the channel centers listed in the rules specify some frequencies in the UHF RPU band to the nearest 10 hertz, that is enough for analog equipment. So in effect, the FCC said that it doesn't matter if an applicant specifies a channel center that is not the exact channel center on which it intends to transmit, as long as licensees comply with the applicable emission mask measured from the center frequency specified in the license, and provided that the licensee programs the center frequency as closely to the specified center frequency as the equipment will allow. This is a startling holding, and one that most broadcast engineers would not be comfortable with. Specification of a channel center that the applicant does not actually intend to use is not a sound regulatory provision, in the SBE's view. Contrary to the FCC conclusion, there is a very real need to revise the RPU channel center rule and the SBE had proposed what we still believe to be an elegant solution to a purely technical problem. Our comments to the FCC will reflect the frustration of the SBE's membership about this issue and the Commission's failure to adequately respond to the concern or the proposed solution.

The Commission did propose, as the SBE asked, to allow broadcasters to use modern digital narrowband equipment such as TDMA and NXDN for RPU operations. That this was long ago permitted in the Amateur Radio Service makes the Commission's inordinate delay in proposing the same relief for Part 74 licensees all the more puzzling. However, better late than never. The Commission asked whether such emissions should be permitted in the HF RPU band and what the maximum authorized bandwidth should be (the FCC proposed 50 kilohertz). The FCC also asked about station identification provisions, which is a fair question since the Part 90 rules, until recently, did not permit digital emission station identifications.

The FCC asked about the SBE's proposed elimination of newly licensed, 100 kHz bandwidth RPU channels in the future, noting that there is still an option to seek a waiver in individual cases where a 100 kHz RPU channel was necessary for high audio quality program material transmission.

Because of the open issue surrounding station identification provisions, the FCC denied the three-year-old temporary waiver request for the use of digital equipment while the rulemaking is ongoing. Denial of that waiver at this late date mandates that, as a matter of basic fairness, the Commission should expeditiously resolve the rulemaking. It is hoped that we might expect a more responsive handling of the Report and Order in this proceeding than the SBE Petition has received to date.

The Society of Broadcast Engineers is the professional organization of television and radio engineers and those in related fields. SBE has more than 5,400 members in 114 chapters across the United States and in Hong Kong. There are also members in more than 30 other countries. Most chapters meet monthly and offer educational programs and an opportunity to network with other engineers. SBE offers the largest and most recognized certification program for broadcast engineers, operators and technicians, with more than 4,500 certifications currently active.

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