

John S Neely\*

\*admitted in PA and DC only

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May 2, 2021

(301) 933-6304

Jerry Miller (of counsel)

Secretary  
Federal Communications Commission  
Washington, DC 20554

ATTN: Media Bureau

Re: **Request for Experimental Authorization**  
Midwest Communications, Inc.  
Station WPBG(FM) Peoria, IL (Fac. 1042114)

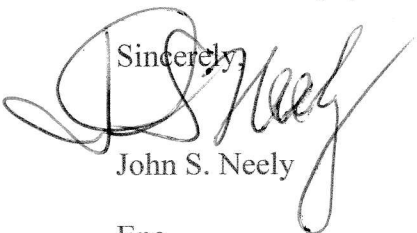
Dear Madam Secretary:

On behalf of Midwest Communications, Inc., ("MWC"), licensee of broadcast station WPBG(FM), Peoria, IL, FACID 42114, and pursuant to 47 C.F.R. §5.203, the Commission is respectfully requested to grant experimental authorization for station WPBG(FM) to conduct testing of hybrid digital FM in-band on-channel (IBOC) operation using asymmetric power levels in the digital sidebands. WPBG was authorized experimental authority in File No. 20200302AAX. An engineering report detailing the experimentation is attached.

MWC has authorized undersigned counsel to certify on its behalf that no party to the application is subject to a denial of federal benefits, including FCC benefits, pursuant to §5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. §862. For the definition of a "party" for these purposes, see 47 C.F.R. §1.2002(b).

Please direct any questions concerning this matter to undersigned counsel.

Sincerely,



John S. Neely

Enc.

cc: Rodolfo Bonacci (Media Bureau) – via email

## **ENGINEERING STATEMENT**

The following engineering statement and attached exhibits have been prepared for **Midwest Communications, Inc.** ("Midwest"), licensee of FM broadcast station WPBG at Peoria, Illinois, and describe an adjacent channel FM IBOC interference study for that facility.<sup>1</sup>

WPBG is currently authorized with a maximum analog effective radiated power of 41 kilowatts at a center of radiation of 168 meters above average terrain. This combination of height and power results in a distance to the 60 dBu service contour in excess of 52 kilometers. Under Section 73.210 of the Commission's Rules, a class B station is defined as having a 1.0 mV/m service contour of 39 kilometers to 52 kilometers in radius based on uniform terrain. The resulting contour radius for WPBG using the licensed height and power is 52.6 kilometers, which rounds to 53 kilometers.

WPBG therefore is considered a "super-power" station. The absolute maximum permissible digital ERP for the facility would be -10 dBc of the analog ERP that would place the 1.0 mV/m service contour at a radius of 52.2 kilometers. The analog effective radiated power to place the 1.0 mV/m contour at 52.2 kilometers based on a center of radiation of 168 meters above average terrain is 39.1 kilowatts. Due to the rounding described under the Commission's Rules, the -10 dBc value is therefore 3.9 kilowatts.

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<sup>1</sup> The Facility ID for WPBG(FM) at Peoria, Illinois is 42114.

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In addition to this value, the potential for interference to first adjacent facilities must also be considered. A search of the Commission's FM database identified five first adjacent facilities to be considered. These stations, including their channel numbers, are listed in the following table.

<b>Callsign</b>	<b>City of License</b>	<b>Channel</b>	<b>Contour Color</b>
WXRT	Chicago, Illinois	226	Blue
KMCS	Muscatine, Iowa	226	Blue
WYDS	Decatur, Illinois	226	Blue
KJOC	Davenport, Iowa	228	Green
WSJK	Tuscola, Illinois	228	Green
KKMI	Burlington, Iowa	228	Green

The contour color column relates to the 60 dBu contour for each facility depicted on Exhibit E-1. In short, facilities operating on channel 226, or the first adjacent lower channel to WPBG, are denoted by blue contours. Those operating on the upper first adjacent are indicated by green contours. The 51.2 dBu F(50,10) contour of WPBG is indicated in red.

The 51.2 dBu F(50,10) contour from WPBG is the limiting first adjacent field strength for -14 dBc. If the interfering field strength is this value or greater at any point on the 60 dBu contour of an adjacent channel station, then the facility proposing IBOC operation is limited to -14 dBc. As Exhibit E-1 demonstrates, the 51.2 dBu F(50,10) contour of WPBG overlaps a portion of the 60 dBu service contour of WYDS at Decatur, Illinois. Additional detail in the vicinity of this overlap is illustrated in Exhibit E-2, along with the 49.5 dBu F(50,10) contour from WPBG, which is the -10 dBc requirement.

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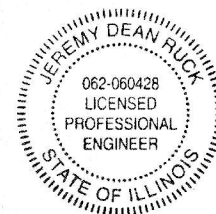
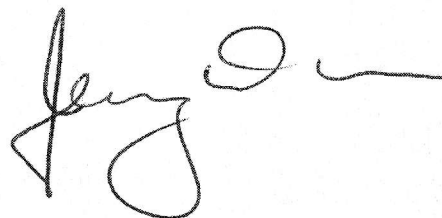
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In Exhibit E-3, the 49.5 dBu F(50,10) contour from WPBG is illustrated in relation to the 60 dBu service contour of each of the other facilities listed. This map demonstrates that there is no overlap with of the 49.5 dBu F(50,10) contour with any facility except WYDS. Thus, WYDS becomes the limiting factor.

As the above table denotes, WYDS operates on channel 226, or the lower first adjacent channel. Therefore, the lower IBOC sideband must be limited to -14 dBc. There are, however, no limitation on the upper side band, which may operate with up to -10 dBc. However, as was previously stated to absolute maximum ERP for digital operations due to the superpower status of WPBG is 3.9 kilowatts. Thus, WPBG would be limited to this value on the upper sideband. The maximum permissible ERP values for the two sidebands are listed in the following table, and operating at maximum for each sideband would result in asymmetrical operation.

Sideband	Carrier Relative Limit	Actual ERP Limit
Upper IBOC Sideband	-10 dBc	3.9 kW
Lower IBOC Sideband	-14 dBc	1.63 kW

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2021

Jeremy D. Ruck, PE  
April 1, 2021

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