

# *APPLICATION FOR LICENSE*

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LPFM STATION  
WPNV-LP - PEORIA, ILLINOIS  
FACILITY ID: 193576

BLACK BUSINESS ALLIANCE PEORIA CHAPTER

NOVEMBER, 2014

## **APPLICATION FOR LICENSE**

The following engineering statement has been prepared for **Black Business Alliance Peoria Chapter** ("BBA"), permittee of new LPFM station WPNV-LP at Peoria, Illinois, and is in support of their application for license.<sup>1</sup> The file number of the most recent construction permit authorizing WPNV-LP is BMPL-20140707ABR. This application for license seeks to cover the construction authorized under that file number. WPNV-LP is currently operating under the provisions of automatic program test authority.

The facility as constructed complies with the terms of the construction permit. The construction permit as issued by the Commission listed one special condition or restriction. BBA certifies that it will comply with this special condition, which requires coordination with all other users of the site to ensure workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or cessation of operation.

The specified transmitter power output achieves the authorized effective radiated power. The authorized effective radiated power is 40 Watts. The antenna utilized by the facility is a Systems With Reliability (SWR) model FMEC/1. Data from the manufacturer lists the gain of this antenna at 0.441. The input power to the antenna to achieve the authorized effective radiated power is 90.7 Watts.

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<sup>1</sup> The Facility ID for WPNV-LP at Peoria, Illinois is 193576.

JEREMY RUCK & ASSOCIATES, INC.

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221 S. 1st Avenue  
Canton, IL 61520

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Ahead of the antenna is the main run of transmission line, which consists of 125 feet of Andrew/Commscope LDF4-50A semi-flexible foam dielectric coax with a 1/2" nominal diameter. This particular length of line has an insertion loss of 0.89 dB based on data from the manufacturer. This insertion loss translates into an efficiency of 81.47 percent. The input power to the transmission line to achieve the authorized effective radiated power is 111.3 Watts.

Ahead of the transmission line is a Polyphaser lightning protection device. This device has an insertion loss of 0.1 dB, which corresponds to an efficiency of 97.72 percent. The input power to the Polyphaser to achieve the authorized effective radiated power is 113.9 Watts.

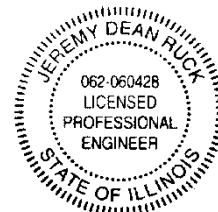
The final component in the transmission system is a super-flexible jumper between the transmitter and the Polyphaser, which is twelve feet in length. The insertion loss of this jumper is 0.16 dB, which corresponds to an efficiency of 96.38 percent. The input power to the jumper to achieve the authorized effective radiated power is 118.2 Watts, which rounds to 118 Watts. The input to this jumper is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

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



Above signature is digitized copy of actual signature  
License Expires November 30, 2015

Jeremy D. Ruck, PE  
November 17, 2014

JEREMY RUCK & ASSOCIATES, INC.

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