

***COMPREHENSIVE TECHNICAL EXHIBIT***  
***APPLICATION FOR LICENSE***

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FM TRANSLATOR STATION  
K298BM - CEDAR RAPIDS, IOWA  
107.5 MHz / 0.25 kW ERP ND

KZIA, INC.

DECEMBER, 2013

## **APPLICATION FOR LICENSE**

The following engineering statement and attached exhibits have been prepared for **KZIA, Inc.** ("KZIA"), licensee of FM translator station K298BM at Cedar Rapids, Iowa, and are in support of their application for license to cover changes to that facility.<sup>1</sup> The changes to the facility were authorized under construction permit BPFT-20130930ATP.

The changes authorized by the specified construction permit were proposed as a result of the loss of the transmitter site authorized under the license. As a result of the loss of this lease, KZIA sought a new site further to the north. The translator continues to serve as a fill-in translator for AM station KGYM at Cedar Rapids, Iowa.<sup>2</sup>

The facility was constructed as authorized in the underlying constructing permit. The construction permit as issued by the Commission listed two special conditions or restrictions. KZIA is in compliance with both of these special conditions, as described.

The first special condition requires KZIA to coordinate with other users of the site to ensure workers and other persons having access to the facility are not exposed to levels of radio frequency radiation in excess of the applicable safety standards. KZIA certifies that it will coordinate with all other present and future users of the site. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or a cessation of operation.

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<sup>1</sup> The Facility ID for K298BM at Cedar Rapids, Iowa is 152290.

<sup>2</sup> The Facility ID for KGYM at Cedar Rapids, Iowa is 9718.

JEREMY RUCK & ASSOCIATES, INC.

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Canton, IL 61520

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The second special condition pertains to the submission of this application for license. Under that condition, KZIA is required to have this application on file prior to the commencement of program tests for the translator. Upon submission of this application, KZIA will begin program test operation of the facility.

The specified transmitter power output achieves the authorized effective radiated power. The authorized ERP is 250 Watts. K298BM utilizes an Electronics Research, Inc. (ERI) model 100A-4F-HW antenna. The manufacturer of this antenna specifies the gain of the antenna as 1.176. The antenna input power to achieve the authorized effective radiated power is 212.6 Watts. This is a non-directional antenna.

Ahead of the antenna is the transmission line run, which consists of 496 feet of Commscope AVA5-50FX. Data from the manufacturer indicates an efficiency of this run of line as being 64.49 percent. The necessary input power to the transmission line is 330 Watts.

The transmitter, however, is connected to the input to the transmission line. Therefore, the required power at the input of the line is the transmitter power output. Since the value specified here is equivalent to that provided on the form pages, it can be seen that the specified transmitter power output achieves the authorized effective radiated power.

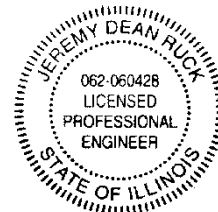
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**12.9.2013**

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, 2015

Jeremy D. Ruck, PE  
December 9, 2013

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