

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

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FM Translator Station K228FJ  
0.013 kW ERP / 93.5 MHz  
Pocatello, Idaho

Tauna M. Barbieri

January, 2017

## **APPLICATION FOR LICENSE**

The following engineering statement has been prepared for **Tauna M. Barbieri** ("Barbieri"), permittee of FM translator station K228FJ at Pocatello, Idaho, and is in support of her application for license to cover the initial construction of that facility.<sup>1</sup> This application is being filed to cover the most recent construction permit for the facility, which is under FCC File No. BMPFT-20161221ABE.

The construction permit for the facility has an expiration date of January 16, 2017, which was the Martin Luther King Jr. federal holiday. Construction of the facility was completed in advance of the expiration of the construction permit.

K228FJ is authorized to operate with a maximum effective radiated power of 13 Watts at a center of radiation of 1,784 meters above mean sea level, which corresponds to an elevation of 13 meters above ground. The antenna proposed, authorized, and constructed, is a non-directional antenna. Construction of the facility pursuant to the terms of the construction permit has been completed.

The construction permit as issued by the Commission lists three special conditions or restrictions. The first of these conditions is not applicable, while Barbieri complies with the other two. These conditions will be discussed in this engineering statement.

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<sup>1</sup> The Facility ID for K228FJ at Pocatello, Idaho is 145392.

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The first special condition on the construction permit requires the performance of spurious emission measurements under the assumption that K228FJ utilizes a shared antenna. K228FJ utilizes its own antenna at a community communications site. Since no other facilities utilize this antenna, it is respectfully requested that this special condition be deleted from the authorization as not applicable.

The second special condition pertains to radiofrequency radiation safety at the site. Under this condition, Barbieri is required to coordinate with other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Barbieri certifies that she will undertake necessary coordination activities under this condition, which may include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The third special condition requires that this application for license be on file prior to the commencement of program tests. Barbieri will commence operation of the facility under the provisions of automatic program test authority following the submission of this application. Barbieri has performed limited equipment tests of the system prior to the submission of this application.

The specified transmitter power output achieves the authorized effective radiated power. The antenna utilized by the facility is a single bay RFS CPF500-1. This antenna has a power gain, as specified by the manufacturer, of -3.5 dBd. This value corresponds to an efficiency of 44.67 percent. The input power to the antenna to achieve the authorized effective radiated power is 29.1 Watts.

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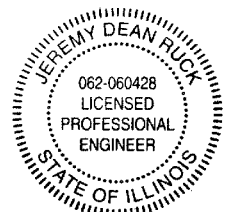
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Between the transmitter and the antenna is 55 feet of Belden 9913 coaxial cable. The insertion loss of this cable at the frequency of operation for 100 feet of length is 1.348 dB. This value was obtained by interpolation between the published insertion loss values for 50 MHz and 100 MHz. The total insertion loss for the cable is 0.7414 dB, which corresponds to an efficiency of 84.31 percent. The input power to the coaxial cable to achieve the authorized effective radiated power is 34.5 Watts, which rounds to 35 Watts. The input to the coaxial cable is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

The facility utilizes a non-directional antenna. This antenna has been installed in accordance with manufacturer instructions.

The preceding statement 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, 2017

Jeremy D. Ruck, PE  
January 17, 2017

**JEREMY RUCK & ASSOCIATES, INC.**

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