

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

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FM Translator Station K237FA  
0.250 kW ERP / 95.3 MHz  
Pocatello, Idaho

Carl Watkins

April, 2016

## **APPLICATION FOR LICENSE**

The following engineering statement has been prepared for **Carl Watkins** ("Watkins"), licensee of FM translator station K237FA at Pocatello, Idaho, and is in support of their application for license to cover modifications to that facility.<sup>1</sup> The file number of the most recent construction permit, the one for which this license application is being submitted, is BPFT-20130628AAA.

Under that construction permit, K237FA was authorized to operate with a maximum effective radiated power of 250 Watts at a center of radiation of 1783 meters above mean sea level, 12 meters above ground, utilizing a directional Nicom BKG77 single-bay antenna. Construction of the facility has pursuant to the terms of the construction permit has been completed.

The construction permit as issued by the Commission lists two special conditions. Watkins is in compliance with both of these conditions.

The first of the special conditions pertains to radiofrequency radiation safety at the transmitter site. Under this condition, Watkins 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. Watkins certifies that he will undertake necessary coordination activities, which may include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

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<sup>1</sup> The Facility ID for K237FA at Pocatello, Idaho is 145719.

JEREMY RUCK & ASSOCIATES, INC.

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The second special condition requires this license application to be on file prior to the commencement of program tests. Watkins will operate under program test authority once this application is filed, until such time as a license is granted by the Commission.

The specified transmitter power output achieves the authorized effective radiated power. The peak antenna gain specified by the manufacturer is -3 dBd, which corresponds to an arithmetic value of 0.5012. The input power to the antenna to achieve the authorized effective radiated power is 499 Watts.

Ahead of the antenna is the run of transmission line for the facility. This run consists of 60 feet of Andrew LDF4-50B transmission line, which is a foam-dielectric coaxial cable with a nominal diameter of one-half inch. Data from the manufacturer of this line indicates that the insertion loss for this length at the frequency of operation is 0.42 dB. This value corresponds to an efficiency of 90.78 percent. The input power to the transmission line to achieve the authorized effective radiated power is 0.549 kW. The input to the transmission line is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

The facility utilizes an antenna specified as directional. This antenna has been installed in accordance with the instructions of the manufacturer. Additionally, the antenna has been oriented such that the major lobe azimuths will be located at azimuths of 30 and 150 degrees true.

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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  
April 6, 2016

JEREMY RUCK & ASSOCIATES, INC.

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