

# ***TECHNICAL EXHIBIT APPLICATION FOR LICENSE***

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FM Translator Station K276GO  
0.250 kW ERP / 103.1 MHz  
Glendive, Montana

GLENDIVE BROADCASTING CORP.

February 2021

## **APPLICATION FOR LICENSE**

The following engineering statement has been prepared for **Glendive Broadcasting Corp.** ("Glendive"), permittee of FM translator station K276GO at Glendive, Montana, and is in support of their application for license to cover the initiation construction of that facility. This application is being filed to cover the construction permit assigned LMS File No. 0000130412.

The referenced construction permit authorizes operation on FM channel 276, 103.1 MHz, with an effective radiated power of 250 Watts at a center of 845.5 meters above mean sea level, 100 meters above ground, utilizing a Bext TFC2K-2 antenna. The facility has been constructed in accordance with the parameters specified in the application for construction permit.

The construction permit as issued by the Commission, lists two special conditions or restrictions.

The first condition or restriction pertains to the submission of this license application. Under this condition, Glendive is required to have this license application on file prior to the commencement of program tests. The applicant will commence operation under program test authority upon the submission of this license application.

The second condition or restriction pertains to the Commission's *AM Revitalization* efforts. Under this condition, Glendive is advised, among other things, that this translator is tied to the primary station in perpetuity, and that this translator may only be assigned

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or transferred in conjunction with the authorization for the parent. Glendive is cognizant of all requirements or restrictions under this condition, and will abide by the same.

The specified transmitter power output achieves the authorized effective radiated power. The antenna authorized, and installed, is a Bext model TFC2K-2 antenna. This antenna is a two-bay antenna, with full-wave spacing between the bays. The antenna has a numerical gain of 1.0 as specified by the manufacturer. The input power to the antenna to achieve the authorized effective radiated power is 250 Watts.

Preceding the antenna is the main run of transmission line, which consists of 355 feet of RFS LCF78-50JA-A0 coaxial cable. This cable is a foam-dielectric semi-flexible cable, with a nominal diameter of one-half inch. Interpolated data from the manufacturer, plus connectors, yield an efficiency of this run of transmission line of 74.64 percent. The input power to the transmission line to achieve the authorized effective radiated power is 334.9 Watts.

Ahead of the main run of transmission line is a six-foot jumper consisting of RFS SCF12-50J coaxial cable. The efficiency for this jumper is 74.64 percent. The input power to the jumper to achieve the authorized effective radiated power is 342.9 Watts.

Preceding this jumper, is a Shively 2914 bandpass filter. The insertion loss of this filter is 0.5 dB, which results in an efficiency of 89.13 percent. The input power to the filter to achieve the authorized effective radiated power is 384.7 Watts.

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Between the transmitter and the filter is a second jumper cable, which consists of three feet of RFS SCF12-50J coaxial cable. At the frequency of operation, this cable assembly has an efficiency of 98.38 percent. The input power to this jumper cable to achieve the authorized effective radiated power is 391 Watts. The input to this cable is the transmitter output, thus the specified transmitter power output achieves the authorized effective radiated power.

Glendive certifies that it will coordinate with all other users of the site to ensure that workers and other persons are not exposed to levels of radio frequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to a reduction in transmitter power or cessation of operation.

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

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, 2021

Jeremy D. Ruck, PE  
February 12, 2021

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