

**ENGINEERING STATEMENT RE;
RELOCATION OF TRANSMISSION FACILITY
KHOL(FM), BLED-20080311ABJ
CH. 206C3, 1.9KW, 2554m AMSL
JACKSON, WYOMING**

INTRODUCTION

This engineering statement is prepared on behalf of Jackson Hole Community Radio, Incorporated, licensee of FM radio station KHOL at Jackson, WY. It supplies information regarding the relocation of its authorized transmission facility to the communications site at Apres Vous mountain. This statement with attachments is submitted in support of a request for relocation and waiver of the FCC Rules. The information contained in this statement has been determined in accordance with the FCC Rules and procedures.

PROPOSED FACILITIES

KHOL(FM) is presently licensed at a transmitter site on Snow King Mountain east of the town of Jackson and operates with an STA facility from its studio building in that town. The proposed new transmitter site is located approximately 18 kilometers to the North West of the licensed KHOL transmitter site. The shift in transmitter site will be from the mountains on the east side of the valley of Jackson Hole to those on the west side. The local terrain and effective antenna heights will restrict predicted contour coverage, and actual service, from the un-populated high elevations outside of the valley and facilitate coverage over the populated valley area.

The proposed facilities will be 1.9kW ERP at an antenna center height of 15 meters Above Ground level (AGL), 2554 meters Above Mean Sea Level (AMSL) and 178 meters Above Average Terrain (AAT). The antenna system will consist of a Nicom BKG77 3-bay antenna with reduced inter-bay spacing.

ALLOCATION CONSIDERATIONS

The proposed relocated facility of KHOL is fully spaced and without prohibited contour overlap to all protected stations with the exception of the FCC Application for a channel 204C facility at Ririe, Idaho, FCC File number BNPED-20071022AVX. This is one of the many Educational FM applications filed in the October 2007 filing window. That application appears to be in conflict with several other applications filed in the same window and possibly with an undetermined number of additional applications daisy-chained to it.

The Ririe application specifies facilities of 100 Watts Horizontal Polarization and 66.487 kW Vertical Polarization at 608 meters AAT. The resulting second adjacent protected and interfering contours are defined by a -40 dB ratio between the Desired and Undesired (d/u) contours, the 60 dBu F(50,50) and 100 dBu F(50,10) contours respectively.

The KHOL 60 dBu predicted service contour falls far short of the Ririe interfering contour, therefore KHOL would suffer no received interference. The Ririe application predicted 60 dBu contour lies just tangent to the west side of the KHOL predicted 100 dBu contour from its licensed facility. Though there is no predicted interference to the Ririe application, there is no clearance between these predicted contours. Therefore, without creating prohibited contour overlap, KHOL can not upgrade or relocate to the west, closer to its community of license. Relocating to the proposed Apres Vous site, the KHOL transmitter and its predicted 100 dBu contour interference area, the area defined by the 40 dB u/d signal ratio, is within the Ririe predicted 60 dBu contour. Because of this relocation with resulting predicted contour overlap a waiver of the FCC Rules Section 73.509 is requested as described below.

WAIVER REQUEST

The Ririe application and the proposed KHOL transmitter sites are separated by 43.4 kilometers and the Teton Mountain range. The proposed KHOL transmitter site is at the crest of Apres Vous mountain at a new communication site situated on National Forest use permit land. The area surrounding the transmitter site is rugged mountain top ski area and is uninhabited and uninhabitable. The nearest habitable land is in the Granite Ridge area of Teton Village at the base of the mountain. That property is over 1.6 kilometers distant. The location of the transmitter site and Teton Village are shown on the attached air photo.

Relocation of KHOL just under 18 kilometers to the northwest will place its transmitter site inside the Ririe application 60 dBu contour at approximately the predicted 67 dBu contour position. The resulting 40 dB u/d interfering level is 107 dBu and this contour is predicted to extend approximately 1.4 km. This predicted interfering area is shown on the attached air photo along with the nearest habitable area at Teton Village. There is no predicted interference to any habitable area or population. Because of the severe Ririe application signal attenuation by the Teton Mountain range, its 60 dBu service contour is unlikely to reach the Jackson Hole valley or Teton Village and hence, again, no interference is likely. For these reasons, that no interference will occur affecting any population, waiver of the FCC Rules Section 73.509 is requested.

PREDICTED CONTOURS

Attached are maps showing the FCC Predicted 60 dBu service contours for the present and proposed operations. The contours illustrate the terrain impact on those contours, restricting it beyond the high mountains and facilitating it in the valley between the two transmitter sites. Each map shows populated census grids, each 0.5 km square, which report year 2000 census population. The first map shows all such grids without limitation to the extent of the contours or as limited by terrain. The second map includes the limitation imposed by the terrain as predicted by the Longly Rice propagation model with a threshold of more than 60 dBu service. The restriction of actual service to the Jackson Hole valley area by the surrounding terrain is quite evident from this second map.

SPECIAL TEMPORARY AUTHORITY REQUEST

As stated above, the Ririe application was filed in the October 2007 Educational FM filing window with many other applications. Its status is "Tendered For Filing" and it has not yet been placed on any public list of applications available for further processing. It is involved with other possible conflicting applications and may be daisy-chained to other applications in other communities. The applicant can make no changes at the present time which would eliminate the predicted contour conflict with any usable KHOL relocation site in the Jackson Hole valley.

KHOL desires to construct its full service facility but has been frustrated by delays and obstacles in obtaining final use agreement at its licensed site. For several months it has been operating with an STA facility of low power and low antenna height from its studio location near the center of Jackson and surrounded by hilly terrain. Its service area includes the town center but is otherwise severely restricted. KHOL is strongly motivated to relocate to the newly commissioned communications site at Teton Village. Relocating to this site will fulfill the station's goal of offering its originally promised wide area service to its public market.

KHOL requests Special Temporary Authority (STA) to relocate to the Apres Vous communications site and construct the facilities described in this application. Considering the Construction Permit application waiver request and its supporting statement, no interference is predicted.

As stated above, the KHOL predicted contours from the licensed and proposed site, with nearly identical facilities, are significantly controlled by the terrain in the Jackson Hole valley. The licensed facility on the east side and the proposed facility on the west side produce near mirror images of each other's predicted 60 dBu service contours. The proposed facility, and that proposed for the STA operation, will expand the coverage to the east into an area formerly predicted with no 60 dBu coverage. That area consists almost entirely of the very high mountain terrain "behind" the licensed site to the east, covering the Gros Ventre Mountains and wilderness area. This area is generally un-inhabited and

uninhabitable wilderness area. The only population exists along major roads on the perimeter of the area as shown on the contour maps above. Using the terrain sensitive Longly-Rice coverage prediction model, the anticipated population within this eastern “extension” area is 35 people in 5 cells of 0.5 km square size.

A temporary authority to operate KHOL from its proposed site, pending action on its application for Construction Permit, will permit prompt area wide coverage and is requested herewith.

R.F. EXPOSURE CALCULATION

The proposed KHOL transmitter site is located at the crest of Apres Vous Mountain, northwest of the town of Jackson and in a National Forest area with difficult access. The site and surrounding area can be seen in the air photos described above. The RF exposure calculation for the immediate transmitter site area was based on the proposed operating facilities of KHOL. Other very low power and/or intermittent transmitters, such as two-way, cellular and translators, also operate from this site. Their RF Exposure contribution is negligible. The KHOL FM transmitter facility will be constructed with a three-bay Nicom USA type BKG77 antenna, mounted at 15 meters Above Ground Level (AGL). This antenna is identical in construction to the Jampro “Double V” (EPA) type antenna.

Since the Nicom BKG77 antenna is not represented in the FCC FM Model RF Exposure prediction software, Version 2.10(b), the KHOL(FM) RF Exposure source was evaluated using the antenna vertical pattern represented by the Phelps-Dodge “Ring Stub” (EPA type 1) pattern data contained in that program. It was assumed that the antenna emissions are undistorted by tower mounting and that the RF signals are projected equally around the tower. After a short distance out from the towers the terrain falls away quickly. The formulas and procedures in the program FM Model, supplied by the FCC, have been used for all calculations. A copy of that program graphical output is attached.

CALCULATED R.F. EXPOSURE CONTRIBUTIONS

An analysis of KHOL(FM) was conducted and the results demonstrate that the main concentration of its ground level exposure occurs at the base of its tower. The ERP and height of the KHOL(FM) facility, 1.9 kW at 15m AGL, with the above described antenna will contribute approximately 115 uW/cm² RF Exposure at ground level. This is well below the FCC adopted uncontrolled (public) exposure, and about 11.5% of the FCC adopted controlled (worker) exposure level, at the base of the antenna.

R.F. EXPOSURE CONTROL REQUIREMENTS

The above calculation indicates that the maximum permissible guideline for neither the controlled or uncontrolled ground level exposure is reached at any ground level location. To minimize uncontrolled public exposure, access to the entire antenna site is controlled as described below.

The KHOL(FM) site is located on a mountain ridge northwest of Jackson, Wyoming. Vehicle access to the ridge is by way of a dirt road several miles from the nearest highway. The access road is closed to all public vehicle travel at all times and only authorized persons can take maintenance vehicles to the transmitter site. For approximately six months of the year, due to heavy snow pack, the road is closed to all but over snow vehicles or persons on foot. When the road opens in the summer, after the snow pack melts, it is then passable only by all wheel drive vehicles. The transmitter site can be reached on foot from the ski lift several hundred yards away, which operates only in winter months. The site is remote from public access.

The access road and immediate site area is posted with signs restricting access and warning about R.F. Exposure. Cross country vehicle access is impossible due to the extreme rugged nature of the mountain terrain and is not allowed in the area. Access on foot is possible, though difficult, through the National Forest area in which the antenna site is located. Cross country foot access would require traveling several miles of road and 1800 feet elevation climb in the summer time and in the winter several hundred meters through deep snow. The transmitter site is not predicted to exceed the Controlled or Uncontrolled Environment exposure levels as described above.

R.F. EXPOSURE COMPLIANCE


Compliance with the FCC adopted RF exposure limits will be assured under the following conditions. The operators of the multiple user transmission site have installed suitable barriers and warning signs to alert workers and to exclude access to the supporting tower and the area of potential exposure in excess of the FCC un-controlled and controlled exposure guidelines. The barriers and signs are sufficient to control ready access.

FM station KHOL(FM) will generate a ground level RF Exposure less than the FCC adopted uncontrolled (public) exposure level and far less than the controlled exposure level. It is therefore excluded from further RF control measures.

The site operators have adopted suitable working arrangements and other controls, such as lock-out / tag-out controls, so that employees can not access areas on the towers where exposure in excess of the controlled area exposure limits may be exceeded.

By these controls, exposure in excess of the FCC adopted RF limits is not possible.

Respectfully Submitted
Lohnes & Culver;

by 
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