

KZRY-LP Fac. ID No. 196097
PORTLAND, OREGON
MINOR CHANGE OF LICENSED FACILITY

Purpose of this application is to propose minute detail changes for licensed facility:

A. Revise Board member (see Section II 3a).

B. Revise coordinates (within meters) to better match tower location:

Structure Coordinates: 45-32-25.9 N 122-33-54.9 W (NAD 83)

Structure Coordinates: 45-32-26.5 N 122-33-50.6 W (Converted to NAD 27)

ASRN: 1036952

C. Revise elevation:

Site Elevation: 157.9 meters

Height of Structure: 37.2 meters

AGL: 12.2 meters

D. HAAT and power calculation:

Antenna Height Above Average Terrain Calculations -- Results	
Input Data	
Latitude	45° 32' 26.5" North
Longitude	122° 33' 50.6" West (NAD 27)
These coordinates convert to NAD 83 coordinates of 45° 32' 25.93", North, 122° 33' 54.94" West (NAD 83).	
Height of antenna radiation center above mean sea level: 170.1 meters AMSL	
Number of Evenly Spaced Radials = 8 0° is referenced to True North	
Results	
Calculated HAAT = 84 meters	
Antenna Height Above Average Terrain calculated using 1 km GLOBE terrain data	

Select Contour Type:	<div>F(50,50) Service Contour -- FM and NTSC (analog) TV</div> <div>F(50,10) Interfering Contour</div> <div>F(50,90) Digital TV Service Contour</div>	
Select Channel Range: (not TV Virtual Channel)	<div>FM Radio or TV Transmit Channels 2-6</div> <div>TV Transmit Channels 7-13</div> <div>TV Transmit Channels 14-69</div>	
Find This:	<div>Field Strength, given a Distance (in km)</div> <div>Distance, Given a Field Strength (in dBu)</div> <div>FM ERP, given Distance and Field Strength [F(50,50) Service Contour]</div>	
ERP (kW)	5.64	Distance (km)
HAAT (meters)	84	Field (dBu)
	<input type="button" value="Find Result"/>	<input type="button" value="Clear Form"/>

Results:

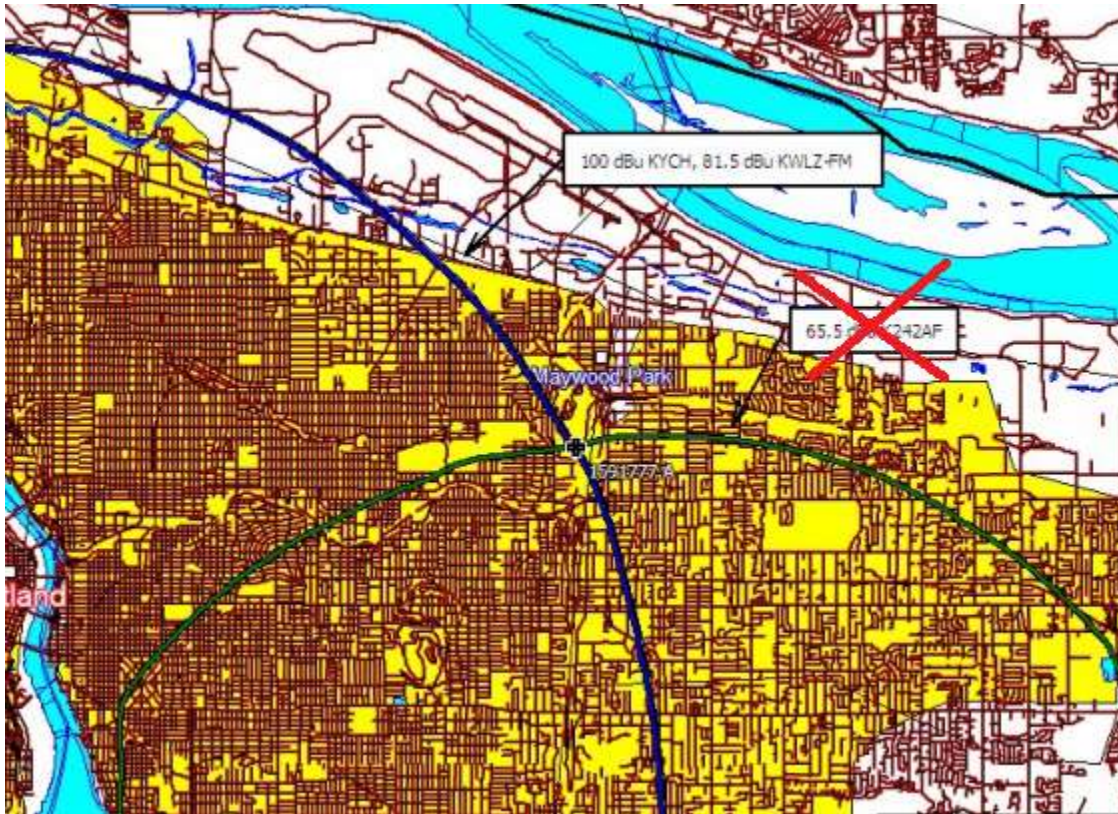
Calculated ERP (rounded per Section 73.212) = **0.0125 kW**
(FM 60 dBu Service Contour only)

thus:

HAAT: 84 m
ERP: 12.5 w

However, **11 w is prescribed** due to TPO limitations of current transmitter (note minimum LPFM wattage at this site for 4.709 km 60 dBu is 6.2 w)

E. Revise antenna/waiver request:



Since last application, K242AF Portland, OR, has relocated channels, thus channels KYCH and KWLZ-FM, now KWEE, are the limiting factors for determining second adjacent signal levels that the site.

KZRY respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by used Free Space methodology of calculation.

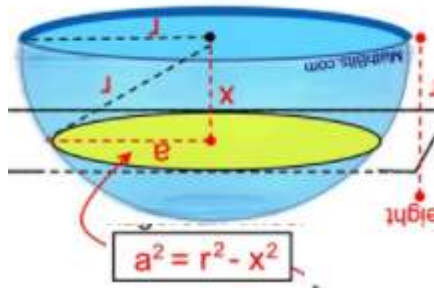
Using U/D methodology, at the proposed KZRY transmitter location KYCH has a signal strength of 100 dBu and KWEE has a signal strength of 81.5 dBu. Interference will occur when the lesser signal strength (KWEE) interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 121.5 dBu contour.

The distance to this contour, using free space method:

$D = (7.01 * P^{1/2}) / E$, where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

P = 11w, E = 121.5 dBu
D = 19 meters

To find interference radius on the ground at a 12.2 m antenna height use Pythagorean Theorem



$$a = (19^2 + 12.2^2)^{1/2} = 14.6 \text{ m}$$



With the antenna proposed 12.2 meters above ground, the 14.6 meter radius around the antenna contains an area of zero population

Due to zero population within this radiation radius, this meets the "Living Way" criteria to qualify for a Waiver of 47 C.F.R. Section 73.807.

Thus, the applicant requests second adjacent waiver based upon evidence no interference is proposed.