

ENVIRONMENTAL STATEMENT  
KIQN PUEBLO, CO, CH. 295C1  
UNITED STATES CP, LLC  
FCC FORM 301  
SEPTEMBER 2013

The applicant proposes diplexing into an existing antenna on an existing 60 meter un-registered tower. The antenna is currently being used by KRYE Rye, Colorado, channel 285C3. The antenna was originally designed to operate with two station, so is broad-banded by design. The proposed Center of Radiation will be 52 meters Above Ground Level. The ERP will be 100 kilowatts circular polarization. A Dielectric model DCR-M8CFE92, 8 bay antenna is proposed with 7/8th (0.875) wavelength spacing between the antennas. Calculations were made using FM Model for Windows, version 2.10. The proposed antenna Center of Radiation, above ground, was reduced by 2 meters to allow for the average height of a human on the ground. FM Model predicts a peak exposure of  $83.24 \mu\text{w}/\text{cm}^2$  at a distance of 18 meters from the base of the tower. This represents 41.6 % of the allowable Maximum Permissible Exposure ("MPE") of  $200 \mu\text{w}/\text{cm}^2$  for uncontrolled environments at any point on the ground.

This site is also utilized by KRYE Rye, Colorado, facility ID 164276, KTPL Pueblo, Colorado, facility ID 12362, and KRWA Rye, Colorado, facility ID 87409. Per FCC records, KRYE produces a worse case power density of  $6.68 \mu\text{w}/\text{cm}^2$  at 2 meters, KTPL a worse case power density of  $76.31 \mu\text{w}/\text{cm}^2$  at 14 meters, and KRWA a worse case power density of  $18.60 \mu\text{w}/\text{cm}^2$  at 116 meters. Even if all of these other sources were directly added together, the total power density would be  $184.83 \mu\text{w}/\text{cm}^2$  at any point on the ground. Field measurements have been made by the last user at this site, they are attached. They indicated the worse power density measured at any point on the

ground was 17.45% of the un-controlled allowable 200  $\mu\text{w}/\text{cm}^2$  power density level.

Thus, once again if the proposed worse case power density being proposed is 41.6%, or if added to the measured RF fields currently on the ground, the total would be 59.05% of the allowable.

The applicant will ensure that the public access to the tower is restricted by fencing, anti-climb devices or other appropriate measures. The site will be posted with RF warning signs. If climbing of the tower by authorized personnel becomes necessary, transmitter power will be reduced to safe operating levels, or transmission even terminated, as necessary as not to exceed the RF exposure limits to tower workers. The licensee will cooperate with other users at the site with the scheduling of such tower or antenna maintenance.

No modification of the existing tower is proposed, other than the proposed side mounting of the antenna system and addition of a transmission line. The tower was constructed prior to March 16, 2001. The National Programmatic Agreement generally allows such a collocation without consultation or review under Section 106 and Subpart B of 36 CFR §800. The applicant believes that it is in full compliance with the Agreement, and that no further study is required.

March 3, 2008

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This letter serves as our report on the RF exposure measurements collected at the Clear Channel tower site in Rye, Colorado on 29 February 2008,

Currently, the Rye tower supports three broadcast FM stations:

KRYE (104.9) at 25 kW ERP  
KTPL (88.3 MHz) at 65 kW ERP  
KRW A (90.9 MHz) at 11.3 kW ERP

The tower is a 195' Rohn SSV, self-support steel tower. KRYE employs a new, 8-element 7/8 wavelength spaced Dielectric antenna while KTPL uses an 8-element, full wavelength spaced SWR antenna. Both antennas are sidemounted at the top of the tower in the same aperture, but on separate tower legs, with a center of radiation of approximately 52 meters AGL. KRW A operates from a 4-element ERI "rototiller" antenna (EPA Type 3) with ½ wavelength vertical spacing to reduce downward radiation. The antenna center of radiation is approximately

32 meters AGL. See Figure 1 (attached) for the site plan and Figure 2 (also attached) for a photograph of the tower.

The tower has one face facing roughly north with KTPL on the west leg and KRYE on the east leg. The KRW A antenna is mounted on the east leg immediately below KRYE. The tower is fenced around its perimeter with a chain link fence and a locked gate. The terrain to the north rises for roughly 200 feet horizontally before reaching a peak roughly 75' above the base of the tower. The terrain to the south, east and west drops off quickly. Land to the north is mostly in the San Isabel National Forest and the absence of RF notice signs (or the permission to install them) means that this area is an uncontrolled environment and the FCC public exposure limit applies.

We collected measurements on Friday the 29 February 2008 Starting at 1600 Local Time. Exposure measurements were collected with a W&G EMR-300 broadband exposure meter using a Type 25.1 weighted electric field probe. The instrument was calibrated in October, 2007. This probe reads total power density as a percent of the FCC occupational limit. In the FM broadcast band, the public

limit is a factor of five lower than the occupational limit, so a meter reading of 20% equals the public limit. Measurements were collected in accordance with FCC bulletin OET-65 and ANSI C95.3-2002. All measurements are spatial averages, taken on a straight line from ground to a point 1.8 meters above ground.

Measurements were first collected over a wide area in all directions to assess the overall behavior before collecting measurements at 17 specific locations around the tower and to the north. The 21 measurement locations are shown in Figure 1 (attached).

Power density readings tend to rise and fall as one moves away from the tower, corresponding to the pattern nulls in the elevation pattern of the dominant contributing station. At the Rye site, peak levels occurred on due North radial of the tower.

Location	Radial	Distance	Description	% Occupational	% Public
1	200	175	Access driveway	0.63	3.15
2	200	150	Access driveway	0.61	3.05
3	200	100	Access driveway	1.31	6.55
4	195	60	Access driveway	1.01	5.05
5	180	40	Access driveway	1.28	6.4
6	170	20	Access driveway	0.46	2.3
7	120	5	At The base of the tower outside fence	0.81	4.05
8	25	15	Access driveway	1.41	7.05
9	20	30	Rise across Driveway, 10' higher than tower base	0.41	2.05
10	25	50	Continuing uphill, 15' higher than tower base	0.84	4.2
11	25	70	Continuing uphill, 20' higher than tower base	0.88	4.4
12	30	100	Continuing uphill, 25' higher than tower base	0.44	2.2
13	35	125	Continuing uphill, 35' higher than tower base	0.56	2.8
14	35	150	Peak of Hill, 40' above tower base	0.71	3.55
15	90	50	Slope of Hill, Equal to tower base	1.15	5.75
16	85	60	Slope of Hill, 5' above tower base	2.79	13.95
17	80	70	Slope of Hill, 10' above tower base	2.82	14.1
18	70	120	Slope of hill, 20' above tower base	1.36	6.8
19	50	75	Slope of hill, 20' above tower base	0.53	2.65
20	20	50	Slope of hill, north of ridge, 15' above tower base	0.72	3.6
21	0	50	Slope of hill, north of ridge, 10' above tower base	0.76	3.8
22	350	70	Slope of hill, north of ridge, 5' above tower base	0.91	4.55
23	335	60	Sharp Slope of hill, 5' below tower base	1.45	7.25
<b>24*</b>	<b>345</b>	<b>50</b>	<b>Sharp Slope of hill, Equal to tower base</b>	<b>3.49</b>	<b>17.45</b>
25	350	40	North leg of tower, 5' below Tower base	2.84	14.2
26	280	25	West of North tower leg	2.17	10.85
27	280	50	West of North tower leg	1.01	5.05
28	295	50	West of North tower leg	2.02	10.1

The highest recorded measurement with all three transmitters operating at full power was 17.45% of the public limit (3.49% of the occupational limit) and this

reading occurred 50 feet away on a radial of 345 degrees from the north tower leg and slightly lower than the tower base level. No readings at ground level exceeded the public exposure limit (i.e., 20% of occupational). Therefore, we can conclude the site complies with FCC limits on human exposure to radio frequency energy.

If you require further information, you can reach me at (719) 332-4436 or via email at [harrywrussell@hotmail.com](mailto:harrywrussell@hotmail.com).

Harry W. Russell, C.E.

Attachments:

1. Figure 1 – Site Drawing with Measurement Locations Indicated.
2. Figure 2 – Tower Detail
3. Figure 3 -- Topo Map of Tower Site Area

Figure 1. Site Drawing with Measurement Locations.

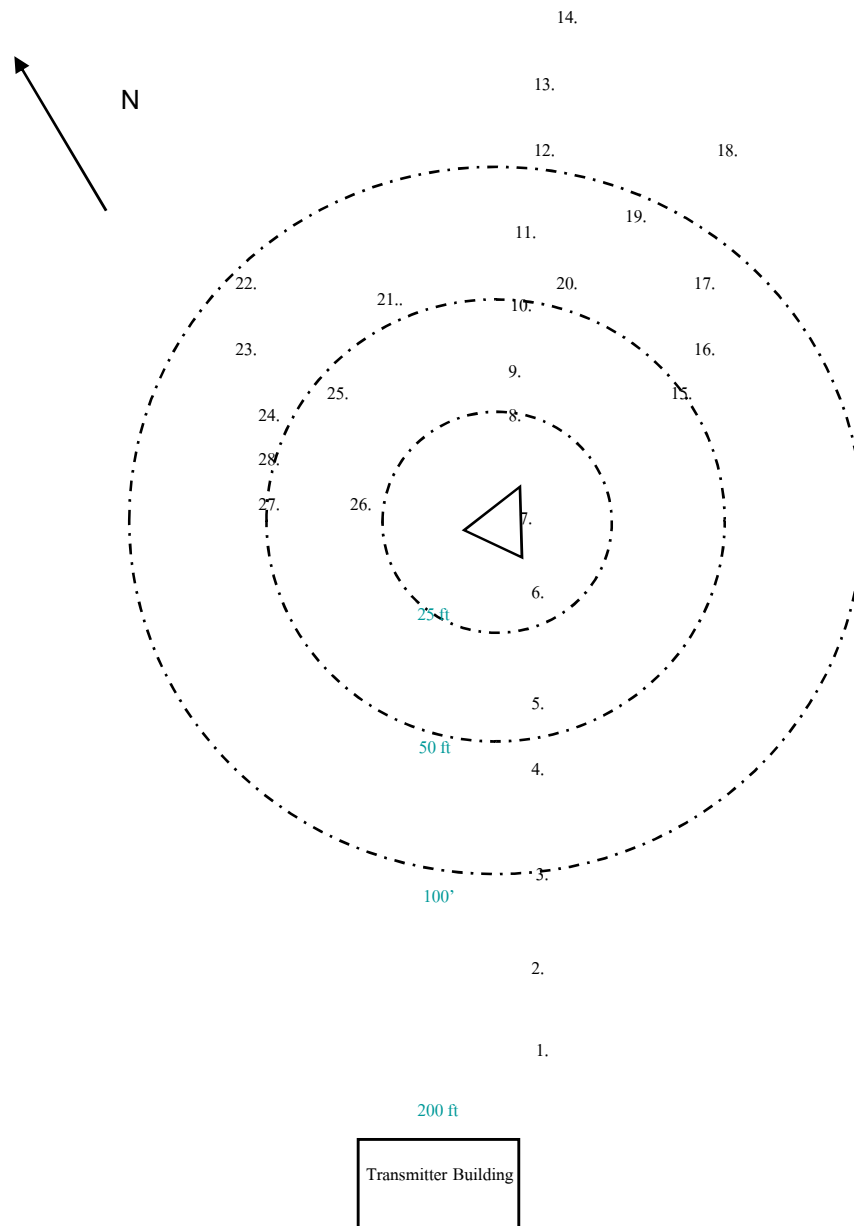


Figure 2. Tower and Antenna Placement Detail

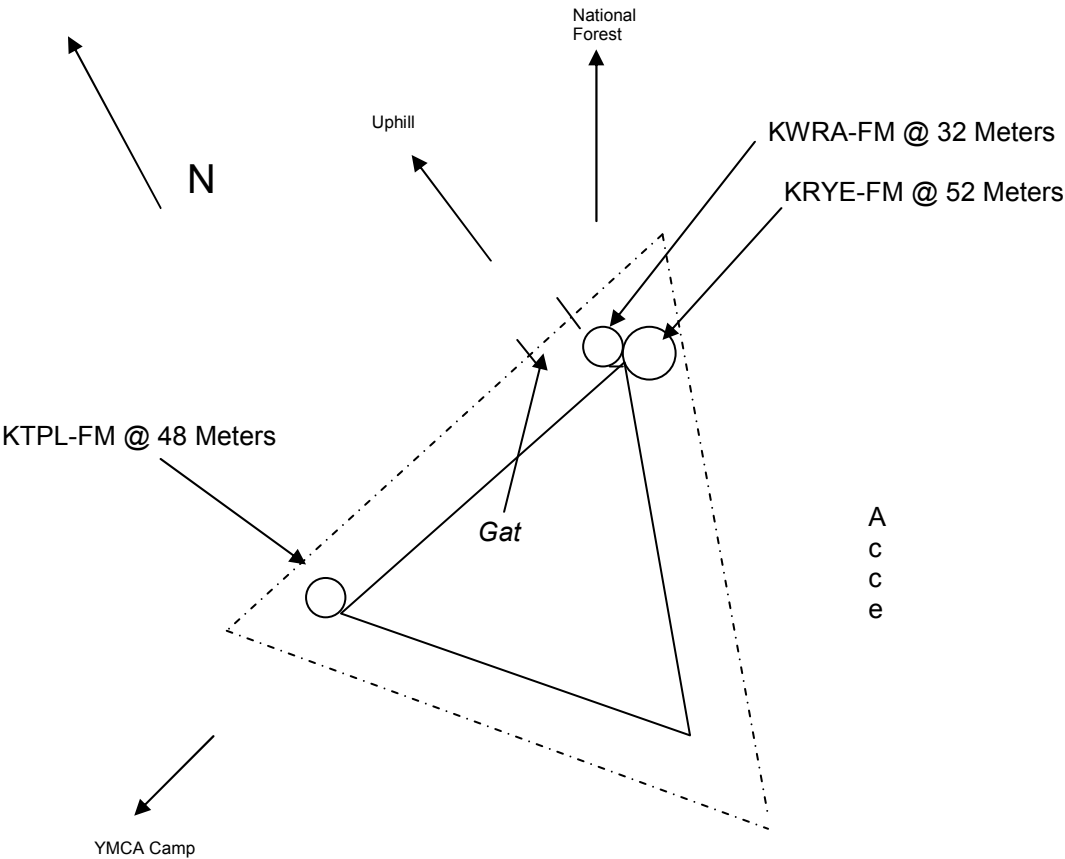


Figure 3. Topo Map of Tower Site and Area

