

## **Comprehensive Engineering Statement**

prepared for

### **Rondaradio**

WRLR-LP Round Lake Beach, IL

Facility ID 125575

Ch. 252L1 0.016 kW 74 m HAAT

Rondaradio (“*Rondaradio*”) is the Licensee of WRLR-LP, Channel 252L1, Round Lake Heights, Illinois (file number BLL-20060110AAE). *Rondaradio* seeks to modify WRLR-LP to specify a different transmitter location, antenna height and Effective Radiated Power (ERP), and to change the community of license to Round Lake Beach, Illinois. In particular, *Rondaradio* proposes to move the station to a nearby unregistered water tower located at 42° 23’ 07.7”N, 88° 04’ 24.0”W (NAD 27). The same antenna is an SWR FM1/2 two-bay, half-wave spaced omnidirectional antenna, at 74 meters HAAT. An ERP of 16 Watts is being specified.

### **Allocation Considerations**

The location of the proposed site is 1.99 km from the authorized coordinates of WRLR-LP, as shown in the map provided as **Figure 1**, thus complying with §73.870(a). The proposed facility’s Height Above Average Terrain (“HAAT”) was calculated using the 8-radial method per §73.313, with a resulting 74 meters. The FCC’s Propagation Curves Tool was used to calculate the equivalent 5.7 km contour distance, resulting in 15.8 Watts, or 16 Watts as rounded per §73.812(a).

A study of nearby FM facilities on co-channel and adjacent-channel frequencies was conducted to identify which stations require further study to demonstrate compliance under §74.807. Spacing requirements for pertinent full service stations are listed in **Table I**. The nearest co-channel station is WJMR-FM, Ch. 252A at a distance of 73.86 km, and first adjacent channel stations are W251BU, Ch. 251D at 30.92 km and WMGN(FM), Ch. 251B at a distance of 124.82 km. As shown in **Table I**, second adjacent stations WFMT(FM) (Ch. 254B, Chicago, IL) and WCKL-FM (Ch. 250B, Chicago, IL) are short-spaced by 0.1 km and 1.4 km, respectively. In the case of WFMT(FM), the FCC’s rounding rule results in no short spacing to the proposal. However, the distance to WCKL-FM requires additional attention.

*Rondaradio* hereby requests a waiver of the second adjacent spacing rules as described in §73.807(e)(1) of the Rules. **Figure 2** demonstrates that the proposed facility is well outside of the WCKL-FM 54 dB $\mu$  contour, and the proposed 94 dB $\mu$  contour will not have prohibited contour overlap with the WCKL-FM contour. Therefore no actual interference will occur to WCKL-FM.

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The proposed site is located 406.75 km from the Canadian border, and more than 1,800 km from the Mexican border, well beyond the 320 km coordination distance required for LPFMs specified in §73.807(g). The nearest FCC monitoring station is 175.8 km distant at Allegan, MI. This distance exceeds the threshold minimum distance specified in §73.1030 that would suggest consideration of the monitoring station.

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect regarding allocation matters.

### **Environmental Considerations**

The proposed facility will operate with a circularly-polarized ERP of 16 Watts with an SWR model FM1/2 two-bay omni-directional antenna at 58 meters AGL on an unregistered water tower, which also provides support for other telecommunications facilities. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Because no change in structure height is proposed and the overall height of the tower will not exceed 200 feet (60.96 meters), no change in current structure marking and lighting requirements is anticipated. The structure passes the FCC's TOWAIR Determination. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

### **Human Exposure to Radiofrequency Radiation**

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility meets the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

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The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for the entire FM broadcast band is  $200 \mu\text{W}/\text{cm}^2$ . For the purpose of this study, “public access” will be considered at the base of the tower at a location two-meters above ground.

Using the FCC’s FM Model program and a worst-case EPA Type 1 antenna it was determined that the proposed facility would contribute a worst-case RF power density of  $0.04 \mu\text{W}/\text{cm}^2$  at two meters above ground level near the antenna support structure, or 0.02 percent of the general population/uncontrolled limit.

Thus, based on this analysis, the Commission’s limit regarding general population / uncontrolled exposure to RF electromagnetic field is not exceeded at ground level locations near the WRLR-LP site location.

### **Safety of Tower Workers and the General Public**

As demonstrated herein, excessive levels of RF energy will not be caused by the proposal at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will continue to be restricted and controlled through the use of a locked gate. According to information provided by the applicant, appropriate RF exposure warning signs are posted. In the event that maintenance or other workers gain access to the tower, power output of the translator will be decreased or shut off to protect workers.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations. Based on the preceding, it

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is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.

### **Conclusion**

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect.

**EXHIBIT 11-FIGURE 1  
CONTOUR COMPARISON STUDY**

*prepared October 2018 for*

**Rondaradio  
WRLR-LP Round Lake Beach, IL  
Facility ID 125575  
Ch. 252L1 0.016 kW 74 m HAAT**

**Cavell, Mertz & Associates, Inc.  
Manassas, Virginia**

**WRLR-LP License**  
Ch 252L1 96 Watts  
60 dBμ F(50,50)

TX Site

**WRLR-LP Proposed**  
Ch 252L1 16 Watts  
60 dBμ F(50,50)

TX Site

**Round Lake Beach, IL**

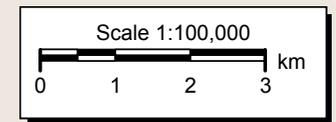


Exhibit 11 - Table I  
**ALLOCATION SPACING SUMMARY FOR WRLR-LP**  
 prepared for  
**Rondaradio**  
 WRLR-LP Round Lake Beach, Illinois  
 Facility ID 125575  
 Ch. 252L1 0.016 kW 74 m

REFERENCE				CLASS = L1		DISPLAY DATES	
42 23 07.7 N.						DATA	10-26-18
88 04 24.0 W.					Current Spacings to 2nd Adj.	SEARCH	10-26-18
----- Channel 252 - 98.3 MHz -----							
Call	Channel	Location		Azi	Dist	FCC	Margin
<del>WRLR-LP</del>	<del>LIC 252L1</del>	<del>Round Lake Heights</del>	<del>IL</del>	<del>273.0</del>	<del>1.99</del>	<del>24.0</del>	<del>22.0<sup>1</sup></del>
WCKL-FM	LIC 250B	Chicago	IL	145.4	65.62	67.0	-1.4
WFMT	LIC-N 254B	Chicago	IL	147.2	66.90	67.0	-0.10
WJMR-FM	LIC 252A	Menomonee Falls	WI	5.8	73.86	67.0	6.9
WQEG-LP	LIC 252L1	Chicago	IL	156.7	31.66	24.0	7.7
W251BU	LIC-D 251D	Kenosha	WI	36.5	30.92	21.0	9.9
WMGN	LIC 251B	Madison	WI	301.4	124.82	97.0	27.8
WXXQ	LIC 253B1	Freeport	IL	264.0	104.48	74.0	30.5
WGHC-LP	LIC 252L1	Chicago	IL	143.6	58.01	24.0	34.0
W252AW	CP -D 252D	Chicago	IL	147.7	69.89	32.0	37.9
WCCQ	LIC 252A	Crest Hill	IL	185.0	105.93	67.0	38.9
W252AW	LIC-D 252D	Chicago	IL	153.8	76.78	32.0	44.8

<sup>1</sup> This is the spacing to the currently licensed WRLR-LP facility (itself).

**EXHIBIT 11 - FIGURE 2  
CONTOUR AND SPACING STUDY**

*prepared October 2018 for*

**Rondaradio  
WRLR-LP Round Lake Beach, IL  
Facility ID 125575  
Ch. 252L1 0.016 kW 74 m HAAT**

**Cavell, Mertz & Associates, Inc.  
Manassas, Virginia**

**WRLR-LP Proposed**

Ch 252L1 16 Watts  
60 dB $\mu$  F(50,50)

94 dB $\mu$  F(50,10)

TX Site

**WCKL-FM License**

Ch 250B 2nd Adjacent  
67 km Spacing

54 dB $\mu$  F(50,50)

**Round Lake Beach, IL**

