

Consolidated Technical Statement

*prepared February 2024 for
Eagle Communications, Inc.*

NEW(FM) Maryville, Missouri



CAVELL
MERTZ
& Associates, Inc.

a division of



Capitol Airspace Group

Table of Contents

Introduction	2
Allocation Considerations.....	2
International and Other Considerations.....	3
Environmental Considerations	3
Human Exposure to Radiofrequency Electromagnetic Field	3
Safety of Tower Workers and the General Public	4

Introduction

Eagle Communications, Inc. (“Eagle”), has been granted a Construction Permit (“CP”) (Facility ID 762475, file number 0000159319) from Auction 109 in 2021. The instant application is being filed to request a minor modification to specify a different antenna height on the same tower. In particular, *Eagle* proposes to use a registered tower (ASR Number 1248409) at 40° 24’ 08.7”N Latitude, and 94° 53’ 17.2”W Longitude (NAD 83). The proposed antenna will be omni-directional, circularly polarized and mounted at 134.1 meters AGL. An ERP of 9.7 kW is being specified.

Allocation Considerations

The FCC has specified a contour distance of between 28 km and 39 km for a Class C3 facility per §73.210(b)(3)(i) of the Rules. §73.211(a)(1)(iv) also specifies an ERP of between 6 and 25 kW ERP for a Class C3 facility. The proposed 285C3 facility is to be installed with a site elevation of 356.9 meters and a Center of Radiation of 491 meters AMSL (134.1 meters AGL). The standard 8-radial HAAT calculation for this site is 159 meters per §73.313(d).¹ Using the FCC’s FM and TV Propagation Curves tool, the contour distance of the proposal is 39 km which is the maximum for a Class C3 facility.

Figure 1 is provided to depict the 60 dB μ F(50,50) contour, and to demonstrate that all of Maryville, Missouri, the Community of License, is fully encompassed by the 70 dB μ contour, thus fulfilling §73.1690(c)(8)(i) of the Rules. For comparison, the currently authorized 60 dB μ contour is provided with a dashed line.

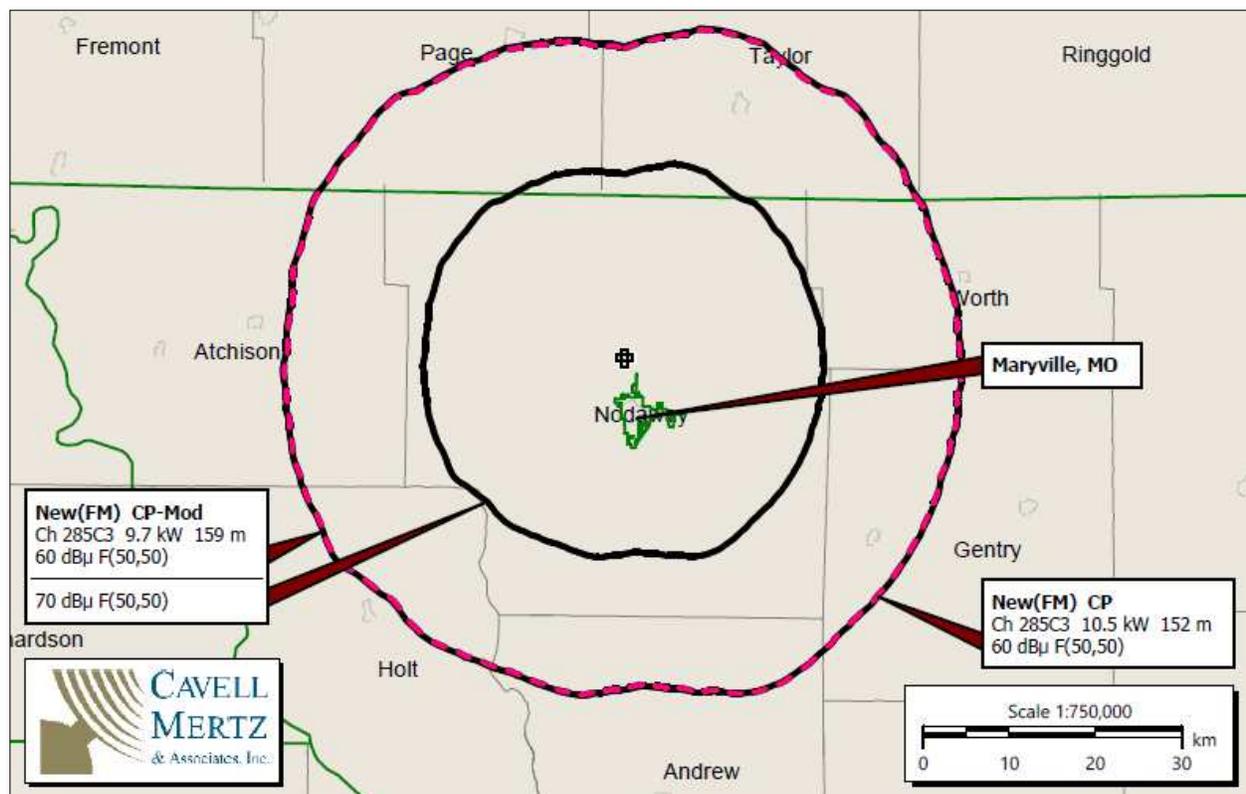


Figure 1 – NEW(FM) Contour Comparison

¹ Details of the HAAT calculation procedure will be made available upon request.

A study of the pertinent surrounding FM facilities was conducted with regard to spacing under §73.207 of the Commission’s Rules. **Table I** below identifies the nearest co-channel, first adjacent, and second and third adjacent as well as IF relationship facilities that may require additional study. As shown in the table, the proposed facility is fully spaced to all nearby co-channel and adjacent channel facilities. Thus, further analysis is not required.

Table I – FCC Spacing Requirements

REFERENCE		CLASS = C3				DISPLAY DATES		
40 24 08.70 N.		Current Spacings to 3rd Adj.				DATA	02-12-24	
94 53 17.20 W.		Channel 285 - 104.9 MHz				SEARCH	02-12-24	
Call	Channel	Location	Azi	Dist	FCC	Margin		
NEW_%	CP	285C3	Maryville	MO	0.0	0.00	153.0	153.0²
KKJO-FM	LIC	288C1	St. Joseph	MO	189.7	78.03	76.0	2.0
KCJK	LIC	286C1	Garden City	MO	166.2	149.95	144.0	6.0
KBOE-FM	LIC	285C2	Oskaloosa	IA	60.8	214.81	177.0	37.8
KRES	LIC	284C	Moberly	MO	118.6	214.17	176.0	38.2

International and Other Considerations

The proposed site is located 890.8 km from the Canadian border, and 1,320.5 km from the Mexican border so International coordination is not required. The nearest FCC monitoring station is 304.9 km distant at Grand Island, NE and the facility is 880.0 km from the Table Mountain Quiet Zone. These distances exceed the threshold minimum distance specified in §73.1030 that would suggest consideration.

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

Environmental Considerations

The proposed facility will operate with an ERI LPX-4C (an EPA Type 3: Opposed U Dipole), circularly polarized 4-bay, full wavelength spaced omni-directional antenna at 134.1 meters AGL on the registered tower with ASRN 1248409. An ERP of 9.7 kW is specified. 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, no change in current structure marking and lighting requirements is anticipated. 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 Electromagnetic Field

The proposed operation was evaluated for human exposure to radiofrequency electromagnetic field using the procedures outlined in the Commission’s OET Bulletin 65 (“OET 65”). OET 65 describes a means of determining whether a proposed facility exceeds 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.

² The NEW_% CP listed is the authorization being modified by this application.

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 locations two-meters above ground. Using the FCC’s FM Model program and specifying an EPA Type 3 antenna, it was determined that the proposed facility would contribute a worst-case RF power density of $3.22 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 1.61 percent of the general population/uncontrolled limit.

§1.1307(b)(3) states that facilities at locations with multiple emitters are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent of the pertinent MPE limit. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of any other facilities near this site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered a factor at ground level as defined under §1.1307(b).

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 be restricted and controlled through the use of a locked gate.

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. Based on the preceding, it 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

Based on the preceding, it is believed that the instant proposal complies with all Commission Rules and policies.